InterForm

Manual for
InterForm400
Version 2018

eForms & Intelligent Output Management
For Power, System i, i5, iSeries & AS/400

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All the names in this manual are fictional and any resemblance to existing people or firms is purely coincidental.

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About This Manual

This manual is intended for the person or people responsible for production printing on the site. For instance the system administrator.

InterForm400® is designed to operate completely transparent to the user, which means this manual is only used for designing overlays, setting up printers and for configuration of sub-system handling the overlays and printers.

InterForm400® requires no programming of any kind in order to operate with existing print jobs. All logical definitions for searching and selecting print jobs are set up in the InterForm400® menus.

The manual describes functions, that may require the purchase of additional modules. Whenever additional module(s) are required it should be mentioned, but that cannot be guaranteed. For guidelines refer to page 23. Ask your local InterForm400 reseller if in doubt.

The terms ‘AS/400', ‘iSeries’, ‘i5' and ‘System i’ may be used in the manual. Unless mentioned they refer to all 4 types of machines.

How the manual is organized

This manual is built as a technical reference as well as a self study on creating overlays fast and easy. The self study sections are constructed as follows:

Getting Started: Work through this chapter if you are installing the system for the first time. You will end up with an illustrative sample printed through the AutoFormsControl sub-system.

Getting Familiar with Overlays: This section will use the demo overlay as template and lead you through virtually all the design features in InterForm400®. To gain full benefit of this section you should have worked through the section **Getting Started**.

Getting Familiar with Overlay Selectors The overlay selector is a vital element of InterForm400®. It enables specific pages in a spool entry to have unique overlays attached according to the contents of the spool data. To gain full benefit of this section you should have worked through the section **Getting Familiar with Overlays**.

Getting Familiar with Auto Forms Control This chapter will lead you through a real life example of using Auto Forms Control. You will be guided step-by-step through the entire procedure. To gain full benefit of this section you should have worked through the section **Getting Started**.

Getting Familiar with Soft-fonts and Barcodes: This section is structured as a learning-by-doing example which makes extensive use of download fonts and bar codes.

Throughout the manual you will find the following symbols, which will provide you with special information:

☺ **TIP** ☺

If you would like to make an easy thing, then just make a ...

☹ TROUBLE SHOOTING ☹

Did you remember to ...

💣 WARNING 💣

Do not do that, as you will end up in deep..

☝ **NOTE** ☝

Important information

What is new in the 2018 versions

This Users Guide describes functions available in version **2018M01** and newer.

Below are listed most of the new features added in InterForm400 since the last Users Guide (version 2017).

Before upgrading

- **OS400 V6R1** or newer is required to install the 2018 (and future) versions of InterForm400. This is mentioned on page 27 and 459 .
- **Java 1.6 or higher** is required for support for **installation of color images** of other types than BMP and JPG via the green screen interface - as well as for PDF Concat. The Auto Forms Control subsystem also need to be started for installation of other image types than BMP and JPG, and also for the PDF Concat feature.
- **IMPORTANT**: Printing **IPL** (Intermec Printer Language) with InterForm400 is no longer recommended. The new, **default** setting of label overlays, **new behaviour** is **NOT SUPPORTED FOR IPL**. The recommendation is to set the Intermec printers in either Direct Protocol (DP) mode (which is supported from the 2018 versions of InterForm400), or in ZPL (Zebra Printer Language) compatible mode, and generate the equivalent print data stream in InterForm400.

Designer

- The **new behaviour** option has now also been implemented for label file sets. The new behaviour option is default for new overlays, but can be disabled if needed. This means, that overlays and conditioned overlays for ZPL and DP can now be as easily rotated as for overlays in the PCL/PDF file sets. The new behaviour option is explained on page 595.
- The **supported color image formats** (installed via a 5250 session) has been extended from bmp and jpg to include a lot of other color image formats. Prerequisites for this are: Java 1.6, and the Auto_form subsystem also need to run. If those prerequisites are not met, then only jpg and bmp files can be installed via the 5250 interface - however installation via the designer should be considered instead. Installation of color images via the green screen is described here 409.
- Color images (bmp, gif, jpg, png, raw and tiff) can now be **installed** directly via the graphical **designer** as described here 606.
- For Label overlays (ZPL, IDP and IPL), the **thick line and boxes** with thick lines are previously positioned a bit wrong in the result view in the designer. Now they are displayed exactly as they are printed.
- For the **extended remap** you have been able to convert text sequences into a **color** in the middle of a text. This is now also supported in the **graphical designer** as explained here 1.
- **Preview** for overlays created in a label file set (for ZPL, IDP or IPL compatible printers) can now also be previewed via printer, that is compatible with the **Direct Protocol** (IDP) printer language. This is setup in the general InterForm400 configuration as described on page 44.

PDF

- The option to **concatenate PDF files** (The Advanced PDF module is required) has now been implemented for all PDF outputs, so that you can now append an extra PDF file to the standard PDF file generated with the **MRGSPLFPDF** command (page 453), the **PDF file naming** definition (as described on page 257), and the **email finish definition** (as described on page 237).

- The **version of the PDF** files, that are created can now be set via the configuration as described on page 46. Possible values are version 1.4 and 1.7. However some PDF features will force the output to be version 1.7.

Printing

- Support for **Direct Protocol** (for **Intermec** printers) has been added. Overlays to be used for Direct Protocol should be created in label file sets (like overlays for ZPL compatible printers). The new printer types are IDP203 and IDP300. The new printer data stream is described on page 479.

Other

- A new **font creation tool** has been added. The option can help you to add a new font in various sizes in the fast, structured way. These fonts are referred to as **universal fonts** (as they are useable in any ebcdic codepage), and are easily created after referring to a True Type Font (TTF). This new tool is described on page 364.

- A new command, **APF3812/MRGTPLVAR** (Merge Template with Variables) has been added. This command takes a stream file as input and creates a new stream file, where up to 97 variables has been substituted. This can e.g. be useful for interface with various archive systems, if you want to archive a PDF file with an XML file containing the index information. A template XML file prepared with *V1-*V97 for the variables can be prepared with the PDF file naming definition in a generic way - here the command can be called from a closing exit program. The command is described on page 518.

- The **split** definition can now respect the **page range** setting of the input spooled file, previously the complete spooled file was always used. A new parameter on the split definition, **Respect page range** is default *NO, for backwards compatibility, but if you set this to *YES, then only the pages selected in the PAGERANGE attribute of the spooled file will appear in the output from the split definition. This feature of the split definition is described on page 199.

- The **split definition** can now also return **blanks** for **SQL look ups**, that find multiple records. This is defined via a new value for the Duplicate record option, as described on page 204.

- You can now **prompt** and select **fields for SQL look ups** in the **split definition**. Not only can you prompt and select fields, but InterForm400 also inserts a sample comparison to help you write a correct comparison for the where statement. Details are included on page 205.

- When you create a **QR barcode** font with a specific version, then the actual **size** of the barcode and number of **supported** alphanumeric **characters** are calculated immediately and displayed on the screen. This is described on page 385.

- A new **Java service job** is automatically starting with the Auto Forms Control

subsystem. It require Java 1.6 or higher. This is currently required for the install of color images other than bmp and jpg files via the 5250 interface, but will also be needed for other future functionality. This new job is described on page 145.

What is new in this manual

This lists the major changes to the manual, that does not concern the new functions. The changes/additions are:

- The size and specifications of a datamatrix barcode is now explained more clearly on page 384.
- The description of **QR** barcodes has been improved. This is covered on page 385.
- The command, **APF3812/CVTSPLFXML (Convert spooled file to XML)** is now described in the manual. The command can be used for converting input spooled files into XML, while using an XML (or XML+) finishing definition. The command is described on page 517.
- A few tips regarding debugging XML+ definitions has been included on page 306.
- During an upgrade of InterForm400 the journal and journal receivers of the old version are first saved into a save file and then deleted. This is now described on page 466.
- The **ITF-14** barcodes are described as an Interleaved 2 of 5 barcode with a box around them on page 383.

The modules of InterForm400

Below basic InterForm400 package and the modules are described.

As minimum you need to buy either the InterForm400 Light version or the basic InterForm400 package.

If wanted you need to install the additional modules InterWord400 and InterFax400. InterFax400 is installed via option 80 on the InterForm400 Service menu and requires the InterForm400 CD. The other modules are installed along with InterForm400 and only need to be enabled with a new license code.

Refer to Appendix G on page **494** for details of the light version.

The Basic InterForm400 package

The basic InterForm400 does not contain any of the functions, that are available as a module. That means, that the following is **NOT** included in the basic package:

- ZPL output
- PDF output and E-mailing with attached PDF files
- Possibility to encrypt and digitally sign PDF files created by InterForm400
- InterWord400 (OV400 replacement and System i mail merge)
- Possibility to fax (Interfax).
- Swiftview licenses apart from 1 license, that is delivered with InterForm400 for free
- You can create simple XML files, but advanced XML output require the InterXML module.
- And any other module, that may be offered for InterForm400.

However the number of output queues supported for PCL output in the basic package is unlimited.

The InterForm400 Classic package

The InterForm400 Classic package fits the functionality of the previous versions of InterForm400. The Classic package includes PCL output on an unlimited number of output queues, **ZPL** output, **PDF** output and e-mailing.

If you already have purchased the full InterForm400 license prior to the 2004 versions (and have maintenance) then you will get a 2010 license code for the classic package. If you already have bought InterWord400 or additional SwiftView licenses then the 2010 code (and future license codes) will of course also include that.

InterXML

With the classic package you get the basic XML generator as described on page **277**, but with the InterXML module you can create very advanced XML files e.g. for electronic invoicing e.g. for the EHF invoices as used in Norway and the ZUGFeRD invoices as used in Germany. The InterXML module (also referenced in InterForm400 as XML+) is described on page **294**.

InterArchive400

With InterArchive you can archive and retrieve documents created by InterForm400 - including copies of outgoing emails. The functionality also includes workflow, scanning, Browser User

Interface and much more...

The ZPL Module

Purchase this module and you will be able to print on ZPL compatible printers including the wireless QLnnn+ printers.

In order to start working with Zebra output you need to create a Zebra File set.
Refer to page 355 for how to do that. This module is included in the classic package.

The PDF and E-mailing Module

If you want to create PDF files in InterForm400 and/or send E-mails with attached PDF files you need this module. This module is included in the classic package.

The Advanced PDF Module

The **Advanced PDF Module** enables you to encrypt PDF and digitally sign PDF files - as well as embed files into the PDF files - and merge PDF files. The Embed option and encrypt/sign options are described separately:

Encrypt/Digital signature:
If you want to encrypt PDF files created by InterForm400 and/or digitally sign them, then you need this module. Note, that you also need to buy the PDF and E-mailing module if you do not have the classic package. Refer to the **PDF Security manual** for more information. The PDF Security manual can be downloaded here:
http://download.interform400.com/shares/public/Manual_PDF_Security.zip

Embed PDF
With the Advanced PDF Module it is possible to embed one or more files within a PDF file. This can be combined with any of the distribution methods supported including emailing and creation of PDF files locally.

The Embed option of the Advanced PDF is described in details in **Appendix T** on page 653.

Merge PDF files
The command, PDFCONCAT can merge two PDF files together. The command is described on page 519.

You can also append an extra PDF file to the standard PDF file generated with the **MRGSPLFPDF** command (page 453), the **PDF file naming** definition (as described on page 257), and the **email finish definition** (as described on page 237).

The InterWord400 Module

Can be used as a substitute for OfficeVision400. It converts OV/400 documents into RTF format. Offers also the possibility to do mail merge directly on the System i. Ask your local InterForm400 reseller for more details.

The InterFax400 Module

The InterFax400 module enables distribution of the InterForm400 documents via facsimile. The

InterFax400 modules ensures a correct translation of the InterForm400 documents. This is done in combination with the E-mail/Fax finishing definition in InterForm400. Note that InterFax400 is only supported for V5R1 or newer.

The WinPrint Module

With WinPrint you can extend the types of printers you can use with InterForm400. A WinPrint client is installed on one or more Windows PC's and then you can print the merged result on any of the printers installed on these Windows PC's (provided that the printer drivers supports printing of e.g. normal PDF files.).

The Sign Pad Module

With this module it is possible to sign the PDF files created by InterForm400 and archive, email and print out these signed PDF files. The module includes all: InterForm400 communicates with a sign pad installed on a PC and processes the signed PDF.

Getting Started

The idea of the following procedure is to give you a safe and easy start on the InterForm400® system. No knowledge on InterForm400® is required, and only minor OS/400 knowledge is needed.

The final result of the following will print a sample spool entry with a predefined overlay by means of the Auto Forms Control (AFC) system, which is an essential part of the InterForm400® system. The result will be printed on a PCL printer of your own choice.

iASP installation

If you install or upgrade InterForm400 on a system that is running iASP you need to read this:

InterForm400 can only be installed on **one ASP**. This ASP must be varied on for both upgrading and installing.

Installation will insert a **symbolic link** like this, where 'aspdev' is the ASP device:
ADDLNK OBJ('/aspdev/APF3812Home') NEWLNK('/APF3812Home')

The libraries used by InterForm400 will all **automatically** be created in the same ASP as the APF3812 library:

APFIMPORT	(Library used during import)
APFEXPORT	(Library used during export)
APFIMPDST	(temporary library used during import)
APFEXPDST	(temporary library used during export)
APFPTFnnnn	(Libraries containing installed PTFs - number nnnn).

If you want to install on an ASP, that is not the system ASP, then you need to restore the APF3812NEW library into that ASP. InterForm400 is shipped as a zip file, which contains a normal save file.

For future upgrades the same ASP will be used. If you install InterForm400 into another ASP than the system ASP, then you must go into InterForm400 configuration (after the install) and make sure that the job queues and subsystem descriptions are placed in a library inside the system asp.

NOTE

Commitment control is used in InterForm400 when you rename fonts in InterForm400 via option '7=Assign new font number' as shown on page 360. This is the only function in InterForm400 using commitment control. This is important to notice if you are running an iASP installation: The ASP group must be set prior to font renumbering.

NOTE

If you are running iASP and there is an abnormal end for the Auto_Form jobs, you can risk that there are spooled files, that are partially created in the output queue APF3812/APFSYS. This will not influence the functions of InterForm400.

1. Preparation

- Make sure your OS/400 level is **at least Version 6 release 1** or newer. (Refer to **System Requirements** page 459)

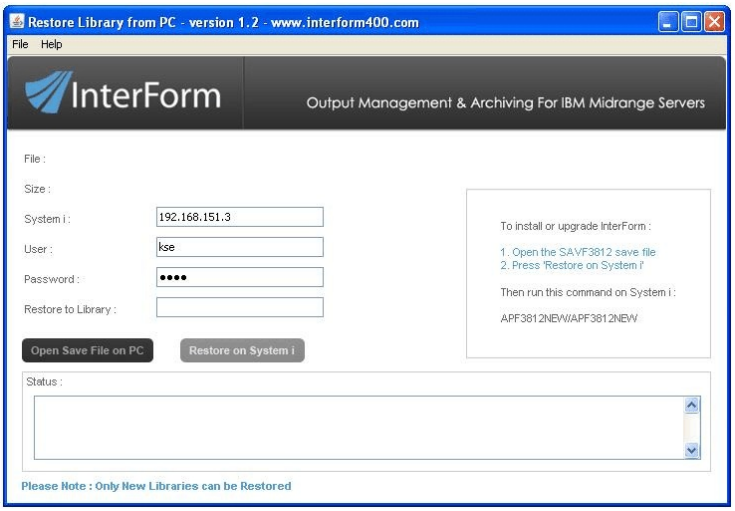
- Make sure you have **QSECOFR** rights on the System i, or similar with **USER CLASS *SECOFR** authority. The user profile used for the install must at least have *ALLOBJ, *SECADM and *SPLCTL authorities in order to be able to do the install.

- Make sure you have a PCL5, ZPL or IPL compatible printer attached either through a LAN (SNA APPC, TCP/IP LPD, Raw Socket (port 9100) or TN5250E) or Twinax (direct or through a Terminal or a PC emulator card). Any PCL5 Printer configured to use IBM Host Print Transform can be used. Refer to Appendix B page 469 for detailed information on attaching printers.

- Note that printers with IPDS as the only language can not be used. Normally you can define an additional printer device (type 3812) to point to the same physical IPDS printer in order to print from InterForm400.

Restore with the RSTLIBPC tool

The easiest way to upload and restore the library is to use a small java program which you can run on your PC. In the InterForm400 installation zip file you can find a file called RSTLIBPC.exe. In order to start uploading you can double click on the RSTLIBPC.exe file. This will start up a DOS window and this window will then appear:



In the screen above you enter the System i identification i.e. IP-address or server name and a user ID and password used for signing on to the System i. Type the library APF3812NEW as this is where you want to restore to and select the save file to upload (called SAVF3812) - you can also keep the “Restore to Library” field blank to use the same library as is in the save file.

When the upload and restore is done you can start the installation like described below.

Alternative restore with FTP

If you are unable to run the java program you can manually FTP the save file and install via this. Here is how to do that:

1. First **create a save file** on the System i onto which you will upload the save file. You can e.g. create it in qgpl with this command: `CRTSAVF QGPL/SAVF3812`

2. Next **upload the save file** SAVF3812 (e.g. found in the distributed zip file) e.g. via FTP onto the save file (here we imagine the SAVF3812 file is placed in C:\temp and is to be uploaded to qgpl/savf3812:
    a. Open a **DOS** session on your PC
    b. Type **ftp** followed by the ip address of your System i and press Enter, type your user profile and password when prompted
    c. Type **lcd c:\temp** (or wherever you have placed the SAVF3812 file
    d. Type **cd qgpl** to temporarily place the save file in the qgpl library
    e. Type **bin** to change to binary transfer
    f. Transfer the file with the command: **put SAVF3812**
    g. Type **quit** to exit the ftp session.

3. Now **restore the apf3812new library** from the save file QGPL/SAVF3812 (this save flie in this example) with the command:
    `RSTLIB SAVLIB(APF3812NEW) DEV(*SAVF) SAVF(QGPL/SAVF3812)`

4. Now you can **delete the temporary save file**:
    `DLTF FILE(QGPL/SAVF3812)`

5. **Start the upgrade or install** like described below

☺ **TIP** ☺

If you have a very limited bandwidth you can also consider to upload a zip file with the save file within onto the System i and then unzip the file directly on the System i (with apf3812/unzip) before you copy the SAVF3812 file into a save file (The save file must be created before) with the command:

```
CPYFRMSTMF FROMSTMF('/pcdata/savf3812')
TOMBR('/qsys.lib/qgpl.lib/savf3812.file') MBROPT(*REPLACE)
CVTDTA(*NONE)
```

(Here we copy the file savf3812 in the IFS directory pcdata into a save file with the same name in library qgpl). From the save file you can restore the APF3812NEW library.

Installation

After restoring the APF3812NEW library with one of the methods above you can now do the actual installation.

Note: Refer to page **460** if you are about to upgrade to an existing InterForm400® installation.

1. Run the command: APF3812NEW/APF3812NEW.

   InterForm400 will first check the authority of the user profile, that is doing the upgrade/install. If the user does not have *ALLOBJ, *SECADM and *SPLCTL as special authorities, the job will stop with an error message: CPF9898 received by APF3812NWC at 3700. (C D I R). The details of the error message indicates the reason.

2. The first screen informs you that any objects in the QTEMP library of the installation/upgrade job will be deleted (confirm with 'G' for 'Go'):

```
                          Display Program Messages

Job 264723/KSE/QPADEV000B started on 28/03/14 at 08:35:43 in subsystem QBASE
Library QTEMP will be cleared. (C G).









Type reply, press Enter.
  Reply . . .  G

F3=Exit    F12=Cancel
```

3. The screen below will only appear if you have added journaling of extra objects in the journal APF3812/APFJRN. The screen will show a list of any objects, that are normally not journaled in InterForm400:

```
       Objects journaled to APF3812/APFJRN prevents upgrade.        JRN440D

Please end journaling to be able to upgrade. To end journaling use one or
more of the following commands: ENDJRN, ENDJRNPF and/or ENDJRNOBJ.
Press Enter to continue.

Type        Object
*FILE       APF3812/APFLCKP









                                                                        End
F3=Exit    F12=Cancel
```

If you see the screen above you are probably trying to upgrade InterForm400 on a mirrored machine, where the journal is used for replicating changes. What you need to do is to end journaling for each object mentioned above e.g. with the commands:
ENDJRN
ENDJRNPF
ENDJRNOBJ

Refer to page **646** for more information of how to solve this. After ending journaling you need to restart the installation or upgrade again with the command APF3812NEW/APF3812NEW.

4. At the next screen you are asked to confirm that you agree with the End User License Agreement:

```
          Accept InterForm400 End User License Agreement              EUA200D


IMPORTANT: BY USING INTERFORM400 AND MODULES, YOU ARE AGREEING TO BE BOUND BY
THE FOLLOWING INTERFORM A/S TERMS.
InterForm A/S (Licensor)
END USER LICENSE AGREEMENT

Concerning the licensing of the Software InterForm400 and modules
(hereinafter referred to as "the Software").

Intellectual property rights

The Licensor holds the copyright and all other intellectual property rights
to the Software and all future versions and upgrades hereof.

The Licensee is not entitled to change or remove any notice on copyright,
trademarks or any other rights marked on the Software or the data media.

Scope of the license

                                                                      More...
F3=Exit    F12=Cancel    F16=Accept EULA
```

Please notice, that there are more than this screen. Press the <Page Down> key to view the other screens and press <**F16**> to accept this license agreement. After the installation/upgrade this agreement can be viewed from the menu by selecting option '70. Configuration and licences' followed by option '60. Display InterForm400 End User License Agreement'.

Now InterForm400 will verify the validity of the APF3812NEW library. The number of objects in the APF3812NEW must match the expected number of objects (according to the save file, that

Interform has shipped). If the number of objects does not match, then this screen will inform you:

```
INS0115                InterForm400 version 2017.M01                PMK250

Cannot install InterForm400. Invalid APF3812NEW library exists.

Not all objects restored.

Do one of the following:

1. Rename library APF3812NEW.
2. Backup library APF3812NEW and delete it.

Press Enter to retry.




 3231 /       3230



F3=Exit   F12=Cancel
```

- in the screen above an object is missing: InterForm400 expected 3231 objects in the APF3812NEW library, but found 3230, so the upgrade has stopped - waiting for you to restore the remaining object(s).

Please notice, that if you have added additional objects to the APF3812NEW library prior to an upgrade, the similar screen is also shown i.e. the number of objects must match exactly - not to few and not too many objects are allowed.

5. You are now prompted to choose your preferred language for the installation:

   Note: If the installation detects an existing version of InterForm400® on your system you will, at this point, get prompted to selected installation method. Refer to page 460 for more information on release updates.

```
                        InterForm 400 version 2015.M01               INTER03

DE: Wählen Sie bitte eine Sprache aus, während verwendet zu werden installieren
    Eingabetaste --> Weiter

DK: Vælg sprog for instruktioner under denne installation.
    Tryk på Enter for at fortsætte.

ES: Seleccione por favor un lenguaje para ser utilizado durante instalan.
    Pulse Intro para continuar.

FR: Veuillez choisir la langue à utiliser pendant l'installation.
    Appuyez sur ENTREE pour continuer.

EN: Please select a language to be used during install.
    Press Enter to continue.

PT: Favor selecionar uma língua a ser usada durante a instalação.
    Aperte Enter para continuar.

EN  DE=Deutsch, DK=Dansk, EN=English
    ES=Españoles, FR=Français, PT=Português

F3=Exit   F12=Cancel
```

6. The next screen asks you to enter a licence code if needed. You can also leave it blank and fill it out later.

```
Work with licence information                                  LIC350D

  InterForm 400 version . . :  2015.M01
  Model / Feature . . . . . :  270  22A2
  Serial number . . . . . . :  65BD1BB
  Operating system  . . . . :  V5R3M000

Type options, press Enter.
  2=Change  5=Display

Opt   License code
 _    Production key            Not applied
 _    Test key                  Not applied
 _    Mirroring key-1           Not applied
 _    Mirroring key-2           Not applied









F3=Exit               F12=Cancel=Cancel
```

7. In the following screen you can set the preferred language used in InterForm400. The language can be changed later if needed. This is done by option 2 at the *Administration menu* to change the global settings for InterForm400® or use option 4 to select language for specific InterForm400® users.

   Note: InterForm400® CL commands like MRGSPLFPDF, APF3812 etc. will be installed in the language chosen here, and can not be changed unless a re-installation is made.

```
INS0121                InterForm 400 version 2015.M01                 INTER03

Select primary language, press Enter.

Primary language . . . . . .   EN   DE=Deutsch, DK=Dansk, EN=English,
                                    ES=Españoles, FR=Français, PT=Português


Primary language is used for:
1. The language of commands.
2. The language of displays.


Notice:
Language of commands can only be selected during install.
Primary language can be changed at the administration menu option 2.



F3=Exit   F12=Cancel
```

8. If you are unsure, you should leave the default values for the journal. Refer to page **436** for more information on journaling.

```
INS0122                InterForm 400 version 2015.M01                 INTER03

Select journal, press Enter.

Journal  . . . . . .  APFJRN___
  Library  . . . . . .    APF3812___


If a journal is selected, changes are recorded to a journal receiver.

It is recommend to use the journal APFJRN in library APF3812.
This journal will be created during install, if used.

If you select a journal in a other library this journal must already exist.



F3=Exit
```

9. The installation guide now gives you an overview of parameters you have chosen, for the installation of InterForm400®. Press F16 to start installation. Note that Status messages will be shown at the bottom of the screen during installation.

```
 INS0129                InterForm 400 version 2015.M504                PMK250

Start installation with selected options.

Device . . . . . :   APF3812NEW
  Category . . . . . :     *LIB
ASP device . . . . . :   *SYSASP
Primary language . . . . . :   EN
Journal  . . . . . :   APFJRN
  Library  . . . . . :     APF3812

Start subsystems . . . . . :   1=Start subsystems

Current version  . . . . . :   2016.M01
Library  . . . . . :   APF3812



Press F16 to install.


F3=Exit   F8=Locked objects   F12=Cancel   F16=Upgrade InterForm
```

10. If any jobs outside any of the InterForm400 subsystems has a lock on any object in the APF3812 library, then the installation cannot proceed and will halt with this screen when/if you press F16:

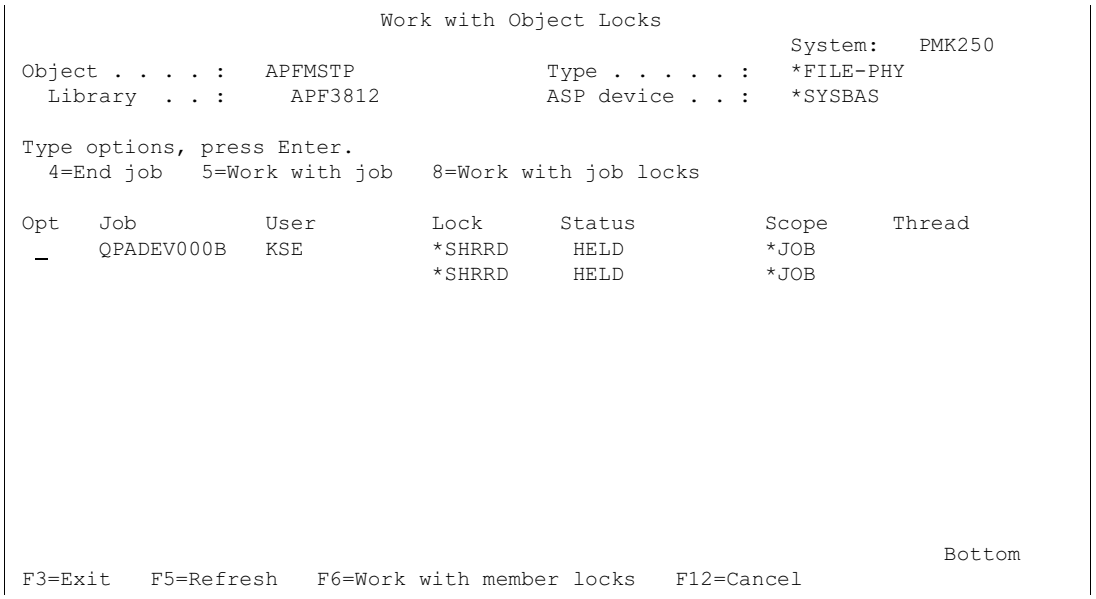
    (When there are no more object locks you can press Enter on the screen below to retry and the installation/upgrade will proceed, if there are not more locks).

```
INS0150                InterForm 400 version 2016.M01                  PMK250

Found locked objects in library APF3812.

Locked objects in library APF3812 poses a potential problem for the upgrade.

Press Enter to retry.

Press F8 to view a list of objects currently locked by jobs running outside
subsystems that will be ended during upgrade.

Press F10 to continue the install with the locks in effect. The upgrade will
probably end in error. *** This is NOT recommended ***

Press F3 to exit the install.




F3=Exit    F8=Locked objects    F10=Ignore warning    F12=Cancel
```

11. If you press F8 on the screen above, you will be able to see the objects currently locked by ‘outside jobs’:

```
          Locked objects in library APF3812                            LCK100D

Type options, press Enter.
  5=WRKOBJLCK

Opt   Object      Type      Attribute
 _    APFMSTP     *FILE     PF









                                                                          End
F3=Exit    F5=Refresh    F12=Cancel
```

12. With option 5=WRKOBJLCK you can check out the job, that has locked the file, and make sure that the lock is released before resuming:


Work with Object Locks
System: PMK250
Object . . . . : APFMSTP
Type . . . . . : *FILE-PHY
Library . . : APF3812
ASP device . . : *SYSBAS
Type options, press Enter.
4=End job 5=Work with job 8=Work with job locks
Opt Job User Lock Status Scope Thread
QPADEV000B KSE *SHRRD HELD *JOB
*SHRRD HELD *JOB
Bottom
F3=Exit F5=Refresh F6=Work with member locks F12=Cancel

3. Setting Up the System

The system is now ready for setting up administrators, file-sets, print queues and printers.

Enter the InterForm400® main menu:

```
APF3812/APFMENU
```

When entering InterForm400® for the first time, you will be asked to appoint an administrator. Enter option **70. Configuration and licences** and go through the menu points 1 - 3, as follows:

1. Enter **1. Appoint Administrator** to appoint an administrator of InterForm400®, (e.g. QSECOFR). It is recommend to allow access to ALL until the system enters production.

2. Enter **2. Configure InterForm 400.**

3. Type in a default output queue. Select printer type according to the supported HP PCL emulation of your printer. (It is recommended to select **HP4 or HP4D** (D for duplex) in order to have support for all fonts used in the overlay sample).
Refer to page 478 for other values.

   Enter Y/N (Yes/No) whether you want to "**Allow Users to override default printer type**". Answer '**Y**' if in doubt.

```
          Configure InterForm 400                                  APF101D
                                                                      1/23
Specify default output queue for users with no individual output queue.

Users may override value when using the system.

  Output queue . . . .  PRT01
    Library  . . . . .    QUSRSYS


Specify default printer type

  Printer type . . .   HP4          HP4, HP4D, HP4_PJL, HP4D_PJL,
                                    HP5C, HP4500, HP4500D,
                                    ZEBRA203, ZEBRA300, QLZPL203,
                                    IPL203, IPL300




Allow users to override default printer type ?      Y  (Y N)

F3=Exit                                                    F12=Cancel
```

When you press Enter you are presented with the screen below. Here you decide what form type to use as default (use ***STD** if in doubt), the paper size, and whether or not the InterForm400 users are allowed to override the paper size on overlays (See more on page 60).

```
         Configure InterForm 400                                  APF101D
                                                                      2/23

Specify default form type for the InterForm 400 system.

Users may override value when using the system.

        Form type      *STD______



Select paper size      4  1 = LETTER      5 = COM-10      A = LEDGER
                          2 = LEGAL       6 = MONARCH     B = A3
                          3 = EXECUTIVE   7 = C5          C = A5
                          4 = A4          8 = DL

Do you want to define paper size on the individual overlays         Y (Y N)


F3=Exit                                                  F12=Cancel
```

Leave the macro offset value at “0". Refer to page 342 for additional info

```
         Configure InterForm 400                                  APF101D
                                                                      3/23



Number to be added to the macro numbers the system works with . . .   ___0


The reason to add a number can be, that printers are equipped with
flash-simm cards, that does not correspond to the HP standard saying,
that a macro in the printers internal memory should be selected,
even if it has the same number as a macro in the flash-simm.


F3=Exit                                                  F12=Cancel
```

If you do not intend to exchange overlays between a number of InterForm400® installations, you can answer N to using DDM. Refer to page 343 for more information on using DDM.

```
          Configure InterForm 400                                 APF101D
                                                                      4/23


 Do you want to use DDM to InterForm files
 on other AS/400

        Use DDM . . . . . .   Y      (Y N)









F3=Exit                                                  F12=Cancel
```

Enter the **IP-address or Network name/NetServer Name** of the System i you work on. This name can be found with the command APF3812/DSPNETSVRA, or can be found under "other computers" on your System i Access connected Windows PC. This option is used in relation to the PCL viewer and the DDM features. If you are in doubt you can also specify the IP address of the System i - without surrounding ‘’.

Sharename can be used for situations, where you do not want to share the complete APF3812Home (In InterForm400 it used mainly for the possibility of a graphical view). If you instead have shared the APF3812Home/VIEW directory you can state the sharename here. Note, that you need to add the share before InterForm400 will accept this sharename. Use e.g. the command: APF3812/ADDFILSHR to share a directory.

Public authorisation: When you view a merge graphically a temporary file is created in /APF3812Home/VIEW. You can restrict access to this file, so that the public authority is *EXCLUDE. Then only the file creator and users profiles with authority *ALLOBJ have access to the file.

Install SwiftView at drive: If your users want to install Swiftview in another drive than the usual C-drive you can state a different drive name here. This is for all users.

NOTE

The change of PUBLIC authority of the files in /APF3812Home/VIEW is only used when creating new files (not when replacing existing). To use the new authorisation delete the files in /APF3812Home/VIEW, that holds the names of your end users. Do not delete the file SVIEW.EXE.

```
          Configure InterForm 400                                APF101D
                                                                     5/23

The Name that is used for this AS/400
under "Other computers" on PC's.

        Networkname  . . . . .  222.2.1.247

        Sharename. . . . . .  APF3812HOME

Public authorisation to files that are created in the /APF3812Home/VIEW directory.

                                0   0=*EXCLUDE
                                    1=*ALL

Install SwiftView at drive
                                C   A - Z


F3=Exit                                                 F12=Cancel
```

The selection of **Primary language** for operating InterForm400® was chosen during the installation of InterForm400®. It can be altered here if needed.

```
          Configure InterForm 400                                APF101D
                                                                     6/23



Select primary language.

        Language code  . . . .  EN   DE=Deutsch, DK=Dansk, EN=English,
                                     ES=Españoles, FR=Français, PT=Português









F3=Exit                                                 F12=Cancel
```

If you want Auto Forms Control to monitor output queues with printers attached, you now have the option to state which form type to print from the shared output queues.

State **N** for not using the program, APF3812/STRWTRCHK program if in doubt.

```
          Configure InterForm 400                                APF101D
                                                                   7/23
Do you want to use the APF3812/STRWTRCHK program as validity checking program
for the STRPRTWTR and STRRMTWTR commands, to avoid a writer to be started with
FORMTYPE(*ALL) on one of the output queues defined in Auto-Forms-Control, and
if yes, what formtype has to replace *ALL when a writer is started on one of
these output queues.



   Use APF3812/STRWTRCHK as a validity checker    N    (Y N)

   Formtype to replace *ALL . . . . . .  __________

This option is especially usefull, if you are using the same output queue
for both input to AFC-functions and for output to a printer, as a writer
never should be started with FORMTYPE(*ALL) on souch an output queue.




F3=Exit                                                F12=Cancel
```

On the final screen of the configuration you state, if you want to use unicode and/or DBCS spooled files with InterForm400. If you state 'Y' unicode options will be visible and the USRDFNOPT field of spooled files to be merged will be inspected: If the value '*IF-UCS2*' is found the spooled file is considered to be unicode. You can also activate unicode output when you merge a spooled file with an overlay by stating 'Unicode output=*YES'. Refer to page **52** for details.

The **Remove underlines** option simple indicates, if you want any underline characters from input DBCS spooled files in the final output. If you do not, then you can set this option to 'Y'.

The last option, **Default soft font** can help you, if you quickly want to be able to generate unicode pdf or PDF/A output. A prerequisite for unicode and PDF/A is, that any font number used in the relevant overlay(s) a unicode soft font must be linked (via Autodownload) to an installed unicode soft font.

Instead of mapping each and every font number, you can instead here just select a default soft font to use for PDF. The unicode soft font must have already been installed as described on page **373**. Page **374** describes the autodownload setup.

```
          Configure InterForm 400                                APF101D
                                                                   8/23


Do you want to be able to use UCS2 (unicode) or DBCS (double byte) print.

        Use UCS2 / DBCS  . . .  Y     (Y N)


Do you want underlines to be removed from DBCS input before merge.

        Remove underlines  . .  N     (Y N)


Do you want a default soft font to be used for unicode/PDFA PDF-files
when download is not defined.

        Default soft font . . . *NONE       Name, *NONE


F3=Exit                                                F12=Cancel
```

The next screen display the subsystem used for Auto Forms Control. If you prefer you can use a different name and/or library.

```
         Configure InterForm 400                                  APF101D
                                                                       9/23


Auto Forms Control subsystem


   Subsystem description  . .  AUTO_FORM
     Library  . . . . . . . .    APF3812 __
```

F3=Exit F12=Cancel

Just like for the AUTO_FORM subsystem above InterForm400 will ask if you want to change the other subsystems on the next 4 screens:

Output Schedule Control	Default subsystem: APF3812/OSCCTL
Email recovery	Default subsystem: APF3812/MAILINTER
Card reader terminal	Default subsystem: APF3812/TERMINTER
WinPrint	Default subsystem: APF3812/WINPRINT

WARNING: You should only refer to subsystems, that can be shut down during upgrades of InterForm400 without causing any problems. Sub systems like e.g. QINTER and QBASE should NOT be referred here.

It is very easy to change the subsystem: You just type the new name and library above. If the subsystem does not exist InterForm400 will suggest to copy and/or update a few necessary objects:

```
               Create AFC subsystem description

Subsystem description  . .  AUTO_FORM3
  Library  . . . . . . . .    KSE

Press Enter to create the subsystem description or
press F3 or F12 to cancel.

Note:
The following objects will also be created or updated in
the subsystem library:

Object     Type   Description
AUTO_FORM  *JOBQ  Auto Forms Control job queue
AUTO_FORM  *CLS   Auto Forms Control class
AUTO_FORM  *JOBD  Auto Forms Control job description
AFCSTART   *JOBD  Auto Forms Control startup job description

F3=Exit              F12=Cancel
```

Check page 153 to see the authority requirements for the Auto_Form Jobd used.

! IMPORTANT !

If you chose to change the subsystem name or library then remember to change your start up IPL program to start the new sub system(s)!

(The Card reader terminal is used for the Digital signature/PDF Security module only).

The next configuration screen indicates how to handle Zebra printers:

```
          Configure InterForm 400                                  APF101D
                                                                      14/23



Command prefixes and delimiter on Zebra printers.



        - Control commands prefix          Hex  7E   Default = X'7E' (tilde)

        - Format commands prefix           Hex  5E   Default = X'5E' (caret)

        - Delimiter                        Hex  2C   Default = X'2C' (comma)







F3=Exit                                                 F12=Cancel
```

Above you set the control characters, that InterForm400 should use as a part of the ZPL data stream. If you print to the same physical printer from other applications, then you need to make sure, that all applications are using the same control characters.

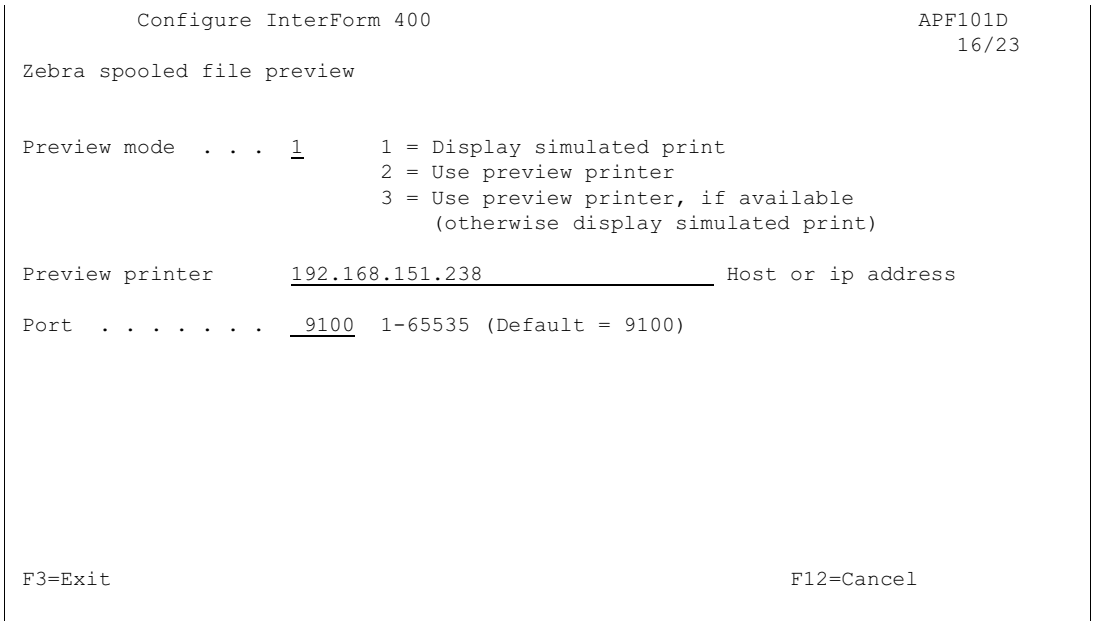
When you press Enter this screen appears:

```
          Configure InterForm 400                                  APF101D
                                                                      15/23



Do you have Zebra printers with firmware nn.13.nn or older?
                                                                    N (Y N)

Do you have Zebra printers with firmware nn.18.nn or newer?
                                                                    Y (Y N)

This information is used to control format of soft fonts.

If you have both old and new versions of Zebra printers,
you will have to define which output queues uses the old firmware
in work with printer control options on the administration menu.
```

It is important to state the firmware that you printers are running above. Zebra has changed the supported soft font formats:
Firmware versions up to and including nn.13.nn supports one (older) kind of soft font support.
Firmware versions in the range nn.14.nn - nn.17.nn supports both the old soft fonts and a new, more efficient way to include soft fonts.
Firmware versions nn.18.nn and newer supports only the new, efficient types of soft fonts.

If you have a combination of both old printers (nn.13.nn or older) as well as new printers (nn.18.nn or newer), then you need to state Y for both above and you also need to tell InterForm400 on which output queues the old printers are attached as described on page 424.

The next screen looks like this:



In this screen you can decide how you would like to preview the merged ZPLII result from InterForm400. The possibilities are these:

1 = Display simulated print
This is the default value. With this the ZPL spooled files are displayed via an internal

conversion in InterForm400, that converts the ZPL datastream into PDF. The advantage with this is, that you will see the result very quickly and no physical printer is required. The disadvantage is, that what you see is not 100% correct (e.g. some fonts might look different than the printed result).

2 = Use preview printer
If you specify a printer (either as a name or IP-address) and a port number, then you can use the printer for making previews. The advantage is, that the displayed result is 100% the same as the printed result. The disadvantage with this is, that the printer cannot be used for any printing while previewing, it will also take longer to view the result and that only the first page will be shown.

3 = Use preview printer, if available
If you select this option, then InterForm400 will use the specified printer if available. If the printer is not available, then simulated print will be shown.

The next screen concerns the use of IPL compatible printers (IPL is short for Intermec Printer Language). If you are not using any IPL label printers with InterForm400 you just answer 'N' on the first screen and InterForm400 will skip all IPL related questions.

```
         Configure InterForm 400                                APF101D
                                                                   17/23

Do you use Intermec label printers . . . .  Y (Y N)

The system has support for Intermec printers up to model PD41/PD42.

Newer printers are not supported, as these printers does not support
soft fonts in the data stream.









F3=Exit                                                F12=Cancel
```

If you answer 'Y' on the previous screen, then this will be shown:

```
         Configure InterForm 400                                APF101D
                                                                   18/23

Some old Intermec printers does not have the Swiss 721 Bold Condensed font,
that we use as a substitute for the Triumvirate Bold Condensed font in
Zebra printers.

Do you have such old printers  . . . . . .  Y (Y N)


If you have not yet installed a soft font for Zebra printers, answer no here,
and return to the configuration after having done so.









F3=Exit                                                F12=Cancel
```

If you are in doubt in regards to if you have these old printers, then you can initially answer 'N' above and then only change into 'Y' if you experience, that font numbers in the range 2000-2999 are not printed correctly on some IPL printers. If you select 'Y' on the screen above, then you will need to tell InterForm400 which soft font to use instead of the Swiss 721 Bold Condensed on the next screen:

```
        Configure InterForm 400                                 APF101D
                                                                   19/23

Soft font to be used as substitute for Triumvirate Bold Condensed
on Intermec printers.


Font name . . . . . . . . . .               ARIALM    F4=List











F3=Exit                                                    F12=Cancel
```

You can e.g. consider to use Arial Narrow Bold or similar instead. The procedure to install soft fonts for label printers is described on page **402**. Here you need to install the True Type Font (TTF) for the western codepage to be shown on the list above.

The screen below can be used, if you are printing with the Intermec Direct Protocol (IDP) print data stream (printer types IDP203 and IDP300). If so, you can select one or your Direct Protocol compatible printers for previewing in InterForm400. The printer should not be used for production printing in parallel.

```
        Configure InterForm400                                  APF101D
                                                                   20/23
Intermec Direct Protocol preview printer


Preview mode  . . .  1      0 = No Direct protocol preview
                            1 = Use preview printer



Preview printer      192.168.151.185                  Host or ip address

Port  . . . . . . .   9100  1-65535 (Default = 9100)








F3=Exit                                                    F12=Cancel
```

The next screen of the configuration looks like below. You should normally select principle 1 as shown below. If you however have any issues when selecting the right drawer on the connected printers (when using the paper type), then you should consider changing it to principle 2.

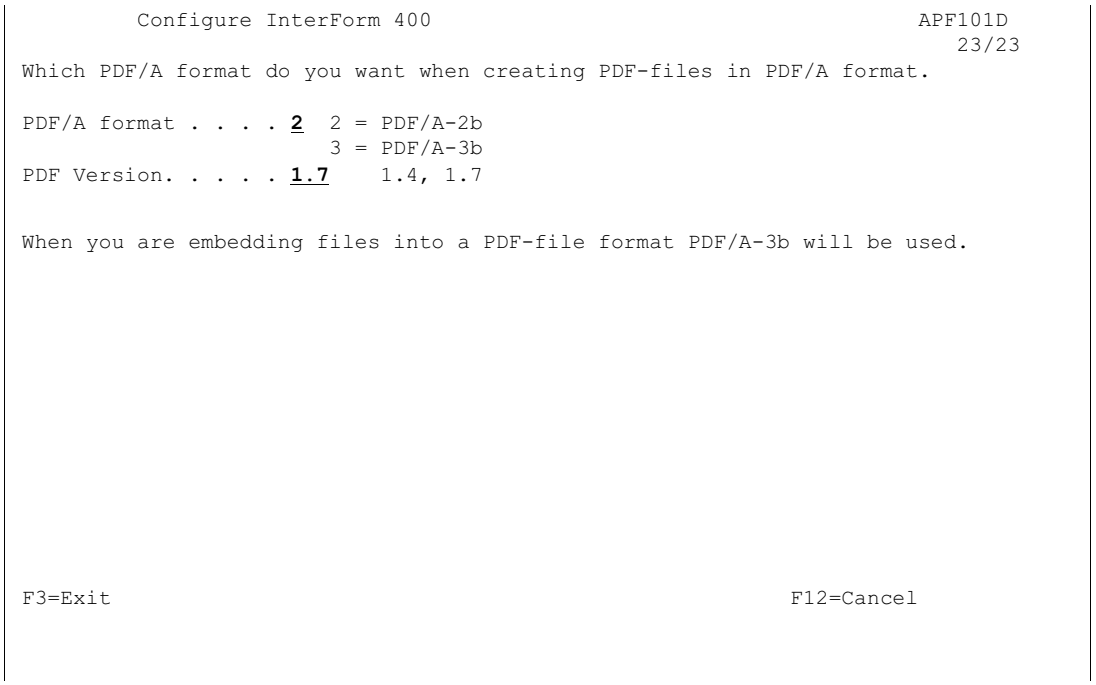
```
         Configure InterForm 400                                  APF101D
                                                                     21/23
Paper type selection principle


Principle . . . . .  1   1 = HP and most other printers
                         2 = Kyocera









F3=Exit                                                F12=Cancel
```

The next screen of the configuration is this:

```
         Configure InterForm 400                                  APF101D
                                                                     22/23
Do you want email addresses to be syntax checked


                     Y  (Y N)









F3=Exit                                                F12=Cancel
```

On the screen above you decide if you want InterForm400 to do a syntax test of email addresses when they are handled in an email finish definition. If this is '**Y**' (recommended), then any email address is e.g. syntax checked when entered in the menues. If you set this to 'N', the syntax is not validated. The value '**N**' can be used in installations, where customers e.g. using a special fax solution that is supporting email addresses not fitting all syntax requirements.

The final screen looks like this:



The PDF/A files created by InterForm400 are PDF/A-2b compatible unless you are embedding files into the PDF file, in which case the PDF/A files will be PDF/A-3b compatible.

The requirements for PDF/A-2b files are higher than for PDF/A-3b, so the recommendation is to select 2=PDF/A-2b above to signal the toughest requirement, that the PDF/A files meet.

However if you specifically want that the PDF/A files should claim to be PDF/A-3b compatible (even though they actually are both PDF/A-2b and PDF/A-3b compatible), then you set the choice to 3=PDF/A-3b above.

PDF version
The PDF version sets the version of PDF, that you want to generate. The PDF version will however be forced to version 1.7, if you create a PDF/A file or if you have embedded file(s) in the PDF.

To finalize the configuration you should do this:

From the InterForm400 Main Menu select '**80. Administering InterForm 400**' and then enter **1. Work with InterForm400 users**. Press F6 to enter your **System i** user ID. Later you can add additional users which will have access to configure and/or define overlays and merge-definitions in InterForm400®.

Enter **2. Work with file sets** (on the administration menu)**.** Press F6 to create an overlay file set called e.g. TEST (select 1=Black/White Laser for Printer Class). This file set is referred in the Getting Familiar with Overlays section on page 104. Later you can add file sets for different purposes or for specific users.

Enter **3. Connect users with overlay file sets** (on the administration menu). Connect your user profile to file set SAMPLE and the file set you created in the previous step.

Start subsystem AUTO_FORM: From the Select **5. Work with Auto Forms Control** from the InterForm400 Main Menu followed by option **10. Start AUTO_FORM subsystem**.

You can now proceed to install and setup the PCL/PDF-viewer (please refer to page **553** for further information) and the graphical designer (refer to page **584** for more information).

4. Work With Overlay/AFC Sample

You are now ready to start working with the overlay, SAMPLE delivered with the package.

First we will make sure that our device is changed to use the sample queue which the InterForm400® demo is preset for:.

Printer Writer (Twinax, or TCP/IP (TN5250E or Raw Socket))
Make sure the printer writer **PRTXXX** (determined in step 3) is started. If not, the following command will start the printer writer with our sample output queue **AFC_OUT1**, which was created by the installation program previously:

```
STRPRTWTR DEV(PRTXXX) OUTQ(APF3812/AFC_OUT1)
```

If the printer writer is already started and attached to another output queue, the following command will change **PRTXXX** to be attached to output queue **AFC_OUT1**:

```
CHGWTR WTR(PRTXXX) OUTQ(APF3812/AFC_OUT1)
```

Remote Writer (TCP/IP LPD)
Using a TCP/IP LPD attached printer does not require a printer device description. You should instead follow the procedure explained on page 475 **Attaching through a TCP/IP Print Server** in order to configure queue **AFC_OUT1** as a remote LPD writer.

The entire environment should now have been set up. The AUTO_FORM sub-system is running, and we have a PCL compatible printer attached to a predefined AFC output queue (AFC_OUT1).

You can verify that the **AFC job AFC_INPUT1** is actually started in sub-system AUTO_FORM by entering the InterForm400® main menu and select option **12. Work with Active subsystem AUTO_FORM** in menu **5. Work with Auto Forms Control**.

In a new installation, the job, **AFC_INPUT1** is set NOT to automatic start with the subsystem, AUTO_FORM. You can change it this way: From the InterForm400® main menu choose: **5. Work with Auto Forms Control**, 1. Functions attached to Output Queues, choose option **2** for AFC_INPUT1, Change '**Autostart job**' from **N** (No) to **Y** (Yes). Start and stop the subsystem and the job will run.

We will now create a demo spool entry, which the AFC system will merge automatically with a sample overlay called **IF400DEMO** and send to the AFC output queue **AFC_OUT1**.

The demo spool entry will appear on the output queue **AFC_INPUT1** which is defined as input queue for the AFC_INPUT1 job (The names of the input queue and the AFC job are in this example identical).

You could work with spool entries of your own as input to the AFC_INPUT1 job. A new spool entry will, after a while, appear in output queue AFC_OUT1 as a result of the merge process. However, for best understanding of the example we recommend that you create a demo spool entry according to the following description

Enter the InterForm400® menus again with the command **APF3812/APFMENU**. You will this time be asked to select a file-set. Select file-set **SAMPLE**.

Enter **12. Service functions** and select option **1. Create Demo Spool Entry** (more info on the demo spool entry on page 433)

You should now receive four pages on print queue **AFC_OUT1** with text and InterForm overlays. You will find a re-print of one of the pages in the printout in the following section.

☹ TROUBLE SHOOTING ☹

NOT PRINTING!

Q *Is there a message on the printer e.g. a request to change the forms?*

A *Reply "G" to such messages. You can enter queue AFC_OUT1 from the InterForm400® main menu by selecting option* ***10. Work with output queue*** *from the main menu.*

Q *Is the sub-system AUTO_FORM active, and is the AFC job AFC_INPUT1 started?*

A *Check the sub-system by entering WRKACTJOB (more info page* ***147***, ***328****)*

Q *Do the spool entry in queue AFC_INPUT1 have status READY?*

A *Try to HOLD the spool entry in queue AFC_INPUT1 and release it again (the AFC functions only works on jobs getting status READY in the defined input queues).*

☹ TROUBLE SHOOTING ☹

PRINT IS GARBLED!

Q *Is the printer type chosen in InterForm400® matching your printer (same PCL level)?*

A *Your printer must be at least PCL5 compatible, so try defining this printer type in InterForm400®. (More info on printer types page* ***478****)*

☺ TIP ☺

Instead of printing the document, you can use the SwiftView PCL viewer delivered with the InterForm400®. Refer to Appendix ***L. PCL Viewing (SwiftView)*** *for information on setting up and using the viewer.*

☝ NOTE ☝

When you merge a spooled file in InterForm400® make sure, that the first line in the spooled file (containing text) does not include characters in position 300 or above. These positions are reserved for InterForm400® information.

5. About The Print Results

Maybe you noticed that page 2-4 was printed slightly faster than page 1. The reason is that the overlay is loaded into the printer as a macro at the beginning of the spool entry and is being called from the printer memory on page one and the succeeding pages. The example contains some bit images to give a feeling of this.

Notice that the address field text and the reference text are printed with a different font than the rest of the text. The lines and columns where these text strings are found in the spool entry are re-mapped by definitions in the sample overlay **IF400DEMO**. Enter **1. Design Overlay** on the main menu and select overlay **IF400DEMO** and look at the overlay elements defined in here. Do not make changes to this overlay, as it will be used as template in section **Getting familiar with Overlays.**

Try entering **5. Work with Auto Forms Control** on the main and select **1. Functions attached to Output Queues**. Select **2** for **Change AFC_INPUT1** and look into the definitions found in here.

You should now investigate further on your own. You will probably be amazed how simple the concept really is. We suggest that you either proceed with the section **Getting familiar with overlays** which leads you through a process of adding more advanced overlay elements to the sample you have been working on. Alternatively you can start building your own definitions.

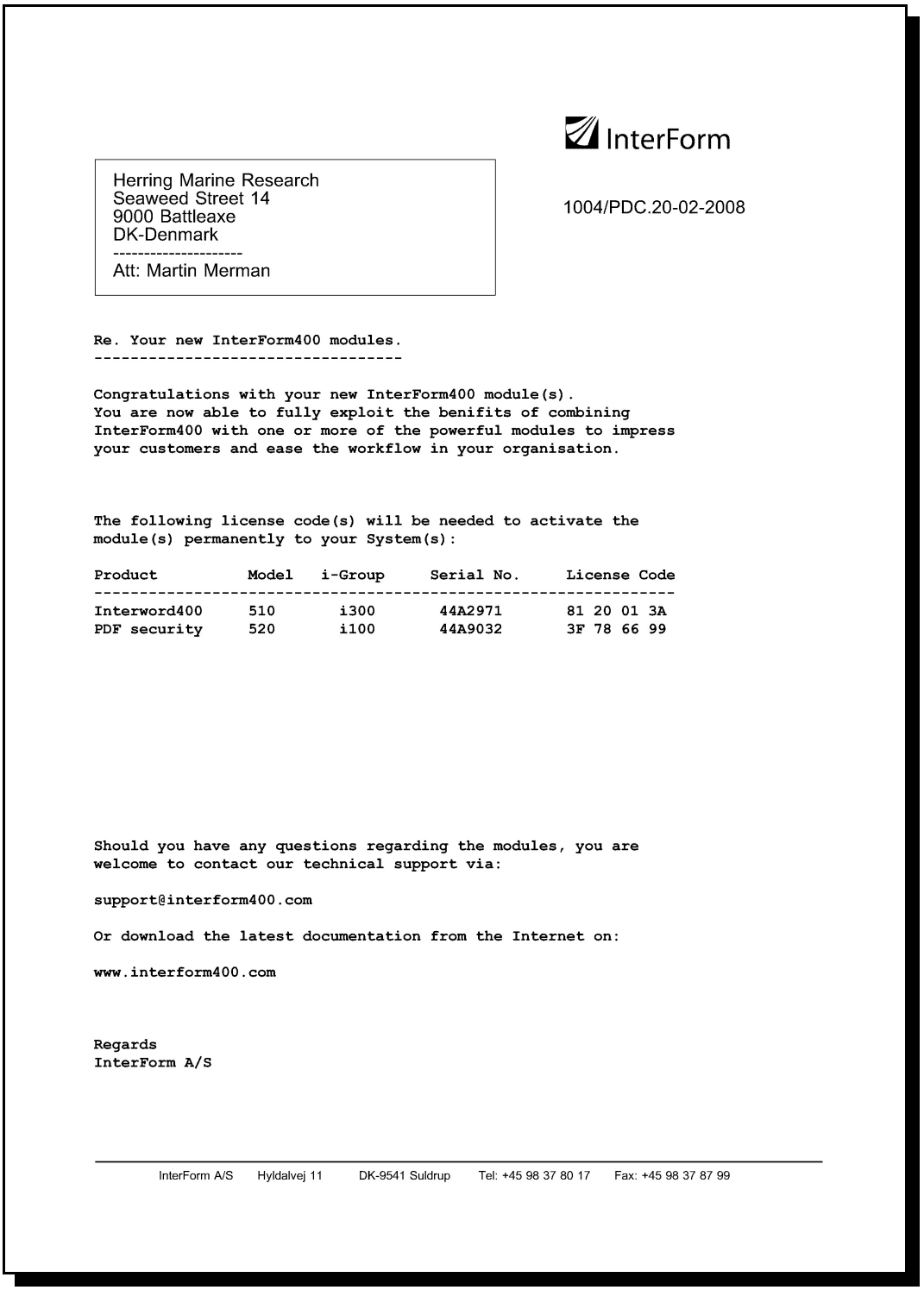
WARNING

DO NOT *create new overlays intended for production in the file-set* ***SAMPLE****. A future release update will not update the changes you make in the file-set SAMPLE. Neither will changes made to AFC-definitions in AFC-job/queue* ***AFC_INPUT1****, unless a "Light" code is entered in the old version which is being updated from)*

WARNING

DO NOT *make any changes to the overlay* ***IF400DEMO*** *at this stage if you intend to work with the* ***Getting familiar with overlays*** *section.*

Illustration of the demo spool entry merged with the overlay IF400DEMO delivered with InterForm400® (The illustration is a screen shot of the InterForm400® PCL viewer function:):



InterForm

Herring Marine Research
Seaweed Street 14
9000 Battleaxe
DK-Denmark

Att: Martin Merman

1004/PDC.20-02-2008

Re. Your new InterForm400 modules.

Congratulations with your new InterForm400 module(s).
You are now able to fully exploit the benifits of combining
InterForm400 with one or more of the powerful modules to impress
your customers and ease the workflow in your organisation.

The following license code(s) will be needed to activate the
module(s) permanently to your System(s):

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971	81 20 01 3A
PDF security	520	i100	44A9032	3F 78 66 99

Should you have any questions regarding the modules, you are
welcome to contact our technical support via:

support@interform400.com

Or download the latest documentation from the Internet on:

www.interform400.com

Regards
InterForm A/S

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Unicode, DBCS and AFPDS support in InterForm400

InterForm400 supports both unicode and DBCS (Double Byte Character Set). For a description of unicode refer to www.unicode.org.

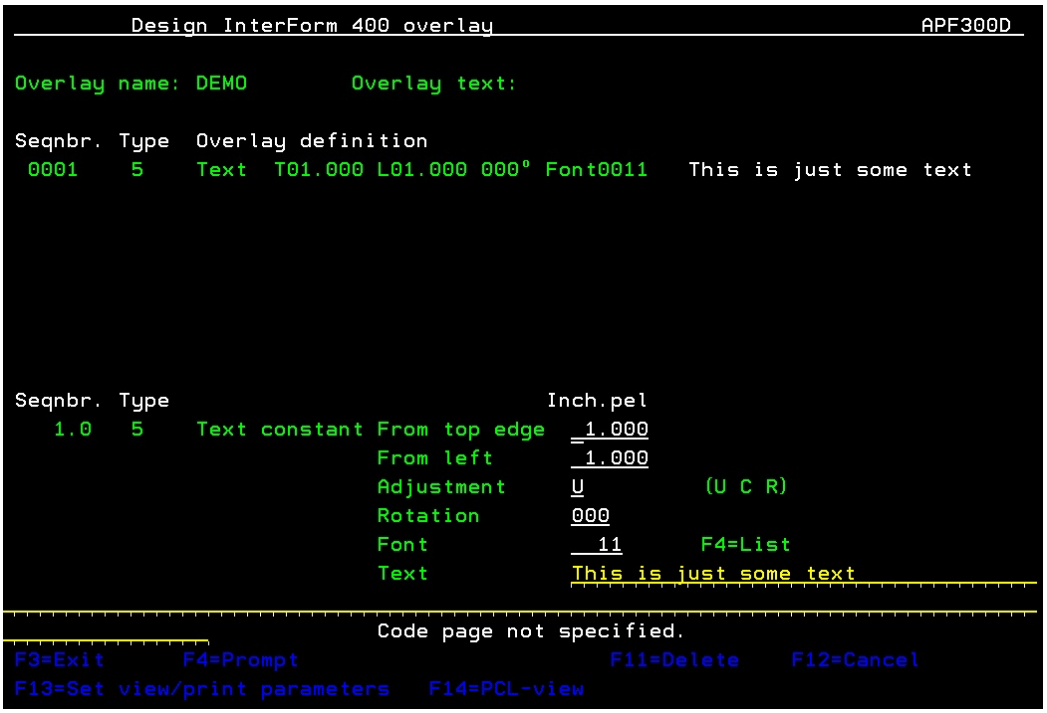
The unicode support in InterForm400 consists of 2 parts:

1. Previously spooled files handled by InterForm400 could only contain one codepage. Now also special unicode spooled files can be handled in InterForm400. This is described in details on page 52 and in **Appendix D**.

2. Multiple codepages are implemented in the InterForm400 setup and screens. The enhancements to the menus and screens are described below.

Important: To notice after upgrading from a pre 2007 version

After you have upgraded InterForm400, you might notice that text fields in the overlay and fields in the e-mail finishing definition are displayed in yellow (with the text code page is not specified) as below:



The yellow colour and 'Code page not specified.' indicates that the field is not yet linked with a code page, but if you press Enter on this screen the text is from now on printed EXACTLY as displayed (the code page of your 5250 session is saved with the text).

If you previously have typed in text in a 5250 session running one code page knowing, that it would be used in a different code page you should now stop that way of working
(It could be e.g. that you have typed in a '**§**' (Hex '7C') sign in a 5250 session running the german code page 273, because Hex '7C' is to used in the US code page 37 to denote the '**@**' sign - if the machine ran code page 37...).

In 2007 (and future) versions these fields are really printed as they look - **if** the code page of the 5250 session is in the same symbol set as used for the merge.

Notice that the symbol sets are:
1=CodePage850
2=CodePage852

3=Baltic
4=CodePage858
5=Cyrillic
6=CyrilEuro
7=ISO8859/9 Latin-5 (Turkish)
8=ISO8859/7 Greek
9=CentralEurope with Euro
A=Arab-864

This means e.g. that normal western code pages (e.g. 273) cannot be mixed with euro code pages (e.g. 1141) in the same spooled file as code page 273 belongs to symbol set **1=Codepage850** and 1141 belongs to Symbol set **4=CodePage858**.

Right after an upgrade the fields are however printed as in previous versions - until you change them.

Notice that the **code page of the graphical designer** can now be set up per user via *'80. Administering InterForm 400*' and '*1. Work with InterForm 400 users'*.

Using DBCS or multiple code pages in the same print out

When you want to use more than one code page in the same print out you have these possibilities:

1. Simple setup - spooled file with a single code page

Without making any changes to your setup you can e.g. insert fixed texts in your overlay design in many different code pages (retrieved from your 5250 session or code page of the designer session) as long as all the texts belongs to the same symbol set.

2. DBCS support

If you want to have full DBCS support you need to setup the DBCS codepage in these places:

a) On the user profile in order to know what DBCS codepage to use if InterForm400 detects that you are typing in DBCS characters in either the designer or via a 5250 session. Refer to page **354** to see how.

b) Unless the spooled file to be merged really has a specific DBCS codepage you will need to tell Auto Forms Control for the used output queue what DBCS codepage to use if any DBCS characters are found. Refer to page **153** for more information.

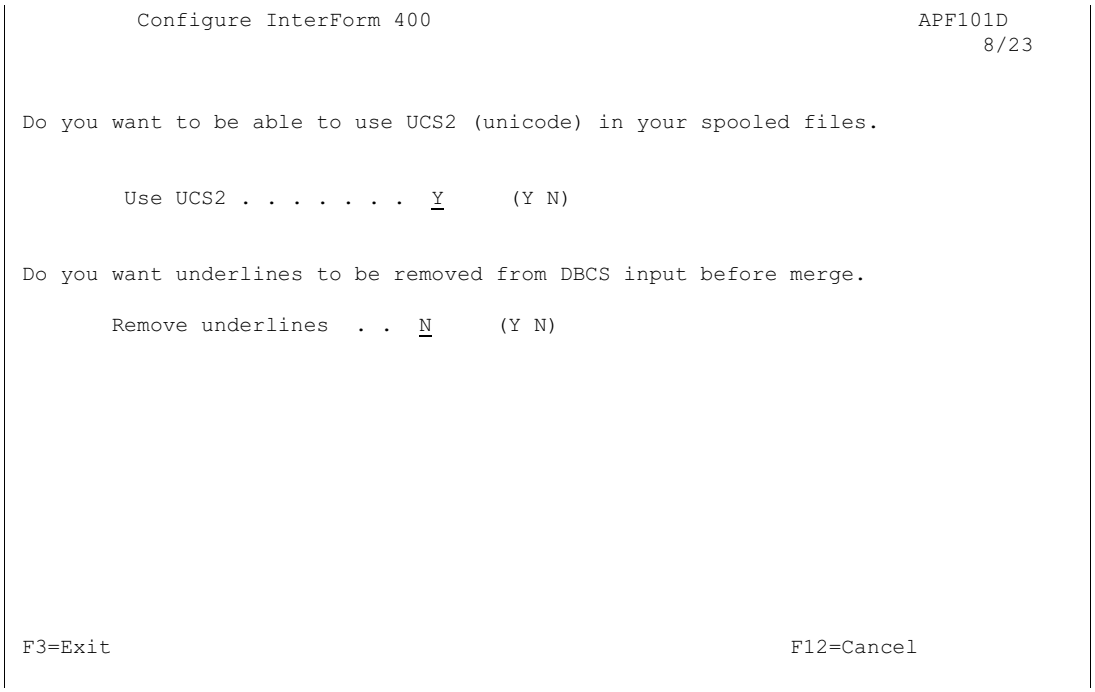
3. Unicode setup - unicode spooled file

If you want to use more than one symbol set, if you want DBCS support or if you want to use unicode in the spooled file you should use the unicode setup below:

Note, that the phrase 'unicode spooled file' here refers to an *SCS spooled file formatted in a special way - or an AFPDS unicode spooled file. (Refer to appendix at page **484** for details of the special *SCS unicode spooled file).

If you want to use texts in code pages belonging to different symbol sets or want to merge a unicode spooled file in InterForm400 you need to do this:

1. Select '70. Configuration and licences' and '2. Configure InterForm 400' followed by Enter several times until you get to this screen:



Type in a 'Y' to activate unicode in InterForm400. This will make the unicode options in InterForm400 visible and InterForm400 will look for a user defined option (**USRDFNOPT**) on the spooled files to be merged.

If a user defined option is 'IF-UCS2' then the spooled file is considered to be unicode (or a mix of unicode and normal EBCDIC characters) and unicode soft fonts is used. The more simple setup is however to create AFPDS unicode spooled files instead as described on page **482**.

2. Install one or more TTF soft fonts to be used for unicode.
   Refer to page **373** for a description of how to do that.

3. Create a font number fitting the soft font attributes and add auto download for the soft font. Refer to page **374** for additional information.

Support for AFPDS Spooled files

InterForm400 supports AFPDS spooled files as input. In short InterForm400 supports the non-graphical contents of the input spooled files, so that only the text elements are visible in the final output (apart from any additional elements, that are added in an InterForm400 overlay).

So if you display the contents of an AFPDS spooled file in a green screen (5250) session, then you have a good idea of what InterForm400 is able to 'see' in the input spooled file, but that is not all:

- If the AFPDS spooled file has a mix of fonts in multiple sizes, where the global font size (as seen on the spooled file attributes) is larger than the font size used for some texts, then you can 'spread out' the spooled file to avoid overprinting in the text based view as described for the option **9. Work with AFPDS copy spooled file CPI & LPI** on page **425**.

- If you want to see exactly how InterForm400 sees the input spooled file, then you have two options:
  a) Load the spooled file in the graphical designer. This will display the spooled file exactly as InterForm400 sees it.
  b) Use F19=DSPPGM in the green screen designer. It is easier to use F18=DSPSPLF, but F18 displays the spooled file with the limitations of OS400 - and

not as InterForm400 sees the spooled file.

With the 2017 (and future) versions of InterForm400, the AFPDS commands (inside the input spooled files) supported by InterForm400 has been extended. This means, that more texts defined in input AFPDS spooled files are ‘seen’ in InterForm400 compared to earlier versions of InterForm400 - and especially compared to the DSPSPLF command.

If you want to use InterForm400 with unicode/multi codepage input spooled files, then you should consider to use AFPDS input spooled files with InterForm400. Unicode AFPDS spooled files are described on page **482**.

Menu Structures and General Operation

The InterForm400® system can be included in one of your menus and can be called from here (refer to the section **Relations to other applications** page 467). You can also enter the InterForm400® system via a command line by entering:

```
APF3812/APFMENU
```

You will then be presented with the InterForm400® main menu:

```
InterForm 400  -  MAIN MENU                          System.......: INTER03
InterForm 400 Samples                                Workstn ID...: QPADEV0009
Select one of the following options:                    CCSID ....: 00277
                                                     User ID......: KSE
 1. Design overlay                                   Administrator: *ALL
 2. Test print overlay                               File set.....: SAMPLE
 3. Merge spool entry with overlay                   Output queue.: AFC_INPUT1
 4. Work with overlay selectors                         library...: APF3812
 5. Work with Auto Forms Control                     Printer type.: HP4D
 6. Work with Output Schedule Control                Version......: 2017.M01

 8. Select file set
 9. Select output queue and printer type
10. Work with actual output queue
12. Service functions
70. Configuration and licences
80. Administering InterForm 400
90. Exit InterForm 400

Option:


F3=Exit                F6=Display messages                F12=Cancel
```

In the upper right corner of the display you will find a selection of information.

System: The system name of the **System i** you are currently running on (relevant when two or more systems are connected).

Workstn ID: The name of the workstation you are sitting at.

CCSID: The code page of the current 5250 screen.

User ID: The name of your user profile.

Administrator: The user profile name of the InterForm400® system administrator. This person is the only one who can use the option "Administering InterForm400" on the main menu. If an administrator has not been appointed this option is open to anybody.

File set: The name of the file-set you are currently operating on. Refer to **Select File set** page 133 for further description. The description of the file set is included on the left in line 2.

Output queue: The name of the output queue for your session in the InterForm400® system when printing from within the menus (not via Auto Forms Control).

Printer type: The default printer type of your session, which is only shown if the administrator has allowed users to select Printer type (this is done under option 9 on the main menu). Refer to page 478 for more information.

Version: The release number of InterForm400®, also reflecting the year of the release. The number will be followed by an M##, which is the modification number. M23 would mean modification 23.

At the bottom of the display you can see which command keys can be used everywhere in the system. How to use them is only described here:

F3: Brings you back to the previous menu. In the main menu F3 exits the InterForm400® system.

F12: Always takes you one screen backwards in the system.

F6: Displays the message queue.

Additionally using the **ATTN** key when your job is a group job will bring you out of the InterForm400® system temporarily. When you return to the InterForm400® system you will continue from the point at which you pressed ATTN.

1. Design Overlay

Note, that InterForm400® comes with a graphical designer. See Appendix O on page 584 and onwards to see how to install and use it. Below the green screen designer is explained.

In this menu overlay definitions and manipulation with spool data are defined.

Overlay names can be up to 10 characters long. The first character must be a letter A-Z. No blanks or special characters can be used in the name; ONLY "_" (underscore) is permitted.

Selecting an existing overlay

Press **F4** to get a list of existing overlays to select from or type the name of the overlay.

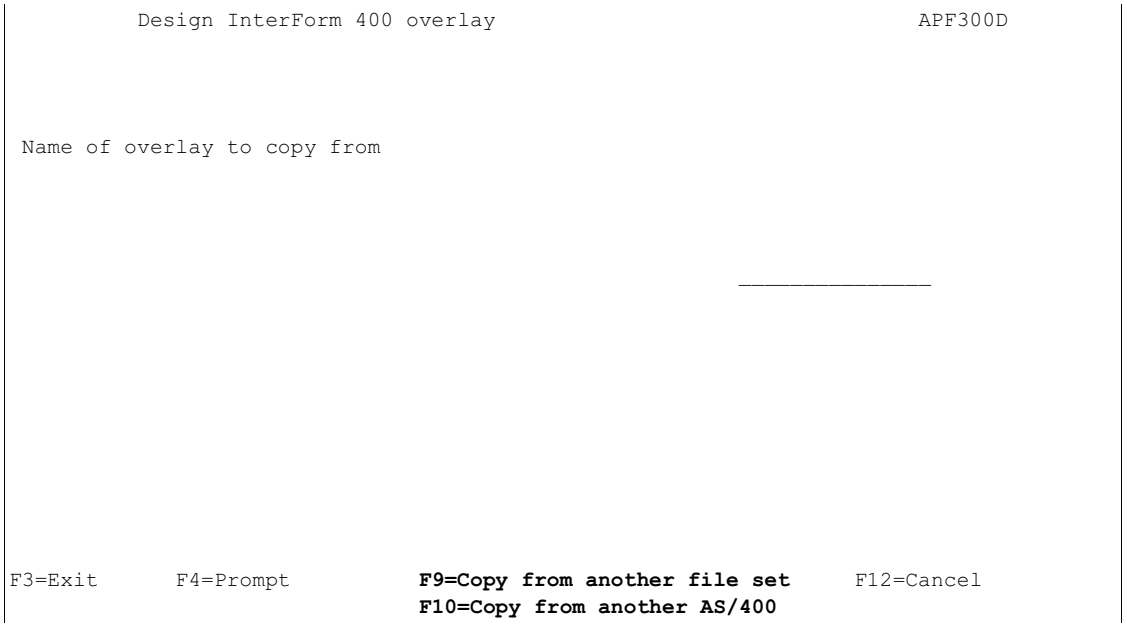
You may be refused access with the message 'Overlay in use by user XXX in designer job NNN' a Graphical Designer job is editing the same overlay. If you are sure, that this other job can be stopped you can do so by selecting option '80. Administering InterForm400' and '50. Work with Designer job overlay locks'. Stop the job with option 4-Remove.

Creating a new overlay

Type in a name of the overlay you want to create and press **Enter**

Copy Overlay from Another Overlay

Type in a name of the new overlay you want to copy to and press **Enter.** Press **F9** to enter a overlay name to copy from and press **Enter**



Press **F9** to enter a overlay name to copy from and press **Enter**, or press **F10** to enter the name of another System i to copy from. You can then copy overlays from InterForm400® on another System i using DDM. (see page 343 for more information)

If the overlay is not known, or if placed in another file set press **F9** once more to get a list of file sets to choose from. Select the file set containing the overlay you want to copy from, and select the overlay you want to copy.

Global settings of an overlay

The global settings of the overlay depends on the type of file set in which the overlay is placed. These are the settings for file sets used for PCL printers and PDF output:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name          TEST          Last update . . :  2013-01-30     F20=Log
Old / New behaviour   1          0 = Old behaviour  1 = New behaviour
Overlay text          ____________________________________
Line spacing          040___     in 1/240 of an inch (*INPUT, 1-720)
Rotation              000___     (*INPUT, 0, 90, 180, 270)
Extra left margin
        positions     _0         (0-99)
Maximum number of
  print positions     378        (1-378)
Extra blank lines
           on top     _0         (0-99)
Font                  0066__     *NONE, *INPUT, fontnumber     F4=List
Extended page def.    N          (Y N)
Drawer / Papertype    *PRINTER   (*INPUT, *PRINTER, 1-255, Name)   F4=List
Paper Size            0          F4=List
Pages per side        __
Copy management       N          (Y N)
Duplex print          N          (N=no  S=short edge margin  L=long edge margin)
Duplex margin         __0        in 1/240 of an inch (1-720)
Back page overlay     __________  Code for placement _ (B=back page F=front)

F3=Exit      F4=Prompt          F11=Delete this overlay          F12=Cancel
F13=Set view/print parameters   F14=PCL-view
```

The data entered on this page describes how the spool file to be merged with this overlay should be manipulated. The attributes (number of lines per inch, font etc.) of the spool entry will be overwritten by these settings.

Overlay text: For your own information

Old/New behaviour:
How to handle rotation. Refer to page 595 for details.

Line spacing: Is dissolved in n/240 inch. For example 6 lines per inch corresponds to 40/240 inch. You may have been expecting to have to specify line spacing in number of lines per inch. We have chosen this method to give you a higher degree of freedom of choice. This setting can be overwritten by **Extended Formatting**. By stating ***INPUT** the value is set according to the attribute of the spool entry.

Rotation: Informs the system how the contents of the input spool entry should be rotated on the paper. You may specify 000, 090, 180 or 270 degrees (counter clockwise). The values 180 and 270 can only be used in connection with IBM3812/16. In connection with other printer types these values will be perceived as 000. By stating ***INPUT** the value is set according to the attribute of the spool entry. The attributes ***COR** and ***AUTO** is also inspected.

Please note, that you can only rotate the complete design with this value, if you have activated the New behaviour setting on the overlay. If the New behaviour option is disabled, then the rotation will not rotate any element inside the overlay. Refer to page 595 for a description of the New behaviour option.

Extra Left Margin: Number of character the print should be offset from the left margin. Extra positions defined here will be included in **Extended Formatting**

Max Print pos: Maximum Print Position should normally be set to 240. However, in case the spool entry, intended for merging with the overlay, contains unwanted characters to the right, the number of print positions to be truncated can be specified here.

Extra blank lines: Extra blank lines inserted before line one of the spool entry. This value can be suppressed by **Extended Formatting**.

Font: This font will be the global font for the entire spool entry unless otherwise specified by Extended Formatting or the overlay definitions **Remap Window** and **Tabulator**. By stating ***INPUT** the value is set according to the attribute of the spooled file.
With ***NONE** the spooled file will not be included in the output - only the contents, that are remapped or tabulated.

F4=Prompt Gives a list of available fonts. The standard IBM 3812 font ID's is predefined (refer to page 489 or look at the font list in the back of this manual). Other fonts can be defined to the system and will then be available here (See section 1. Description of additional fonts page 360)

F20=Log The date of the last change (or update) of the overlay is shown on the top of the screen. Press F20 to display previous change dates.

```
       Overview Fonts                                          FNT100D

Type Selection, Press Enter.
   1=Select Font

Select one of the following:
_      0281         Gothic Text 20
_      0290         Gothic Text 27
_      0751         Sonoran-Serif 8-pt Roman Medium
_      1051         Sonoran-Serif 10-pt Roman Medium
_      1053         Sonoran-Serif 10-pt Roman Bold
_      1056         Sonoran-Serif 10-pt Italic Medium
_      1351         Sonoran-Serif 12-pt Roman Medium
_      1653         Sonoran-Serif 16-pt Roman Bold
_      2103         Sonoran-Serif 24-pt Roman Bold
_      3998         MICR E-13B
_      3999         POSTNET barcode
_      9902         Sample - Univers 8p
_      9903         Sample - Univers 10p
_      9904         Sample - Univers 1p Bold
_      9906         Sample - Univers 18p Bold

F3=Exit                                                        F12=Cancel
```

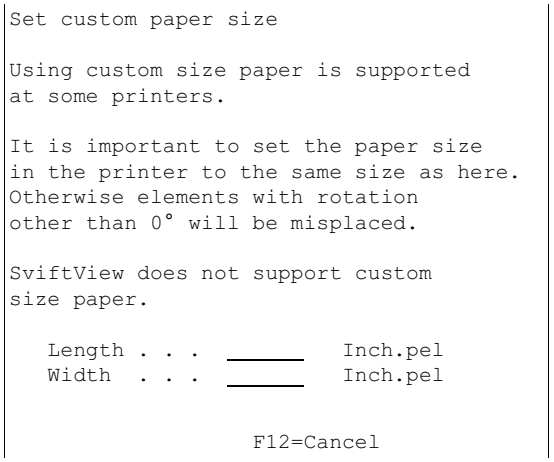
Extended page def: When stating Y in this field you can override the global settings of **Line Spacing**, **Extra blank lines on top** and **Font**. Formatting is done for intervals of lines and is especially convenient if large areas of text should be re-mapped or if you want to format the spool data into columns.

Drawer: Depends on the printer type. Valid values are:

***INPUT**	= The drawer specified in the spool entry
***PRINTER**	= Sets the PCL drawer to 1.
1-255	= Printer specific paper source
Name	= Paper type (prompt with F4 to list valid types)

The values 1-255 is inserted in the HP PCL command Esc&l#H (see **Cassette Selection** page 480). For details about how to select drawer by use of paper type (which is recommended) refer to page 417 and 481.

Paper Size: Is only visible if you have allowed individual paper sizes for the overlays. If you specify **0** in **Paper Size** the default value from the administration menu option **2. Configure InterForm 400** will be used for this overlay (more info page 342). You can also specify the custom page size, X. If you do, you will be prompted for the actual size:



This custom paper size is especially relevant if you want to print onto label printers via the WinPrint module. Notice, that the size is measured in inches and pels, so e.g. 1.120 is one and a half inch (as 240 pels equals 1 inch).

Pages per side (Multi-up): Blank or 1 indicates **no** multi-up functionality. When 2 or more are indicated, the overlay definitions **Tabulator** and **Remap Window** will be able to handle the total number of lines set for the Multi-up.

E.g. a spool page has 66 lines and multi-up is set to include 2 spool pages on one laser printed page. A **Tabulator** will then be able to handle line 1-132 (2 x 66), resulting in both spool pages will have the same tabulator. The same applies for the **Remap Window.** The spool pages included in the multi-up function could also be formatted in separate ways. I.e. removing of headers and footers of the additional pages included in multi-up print.

Copy Management: Stating **N** in this field, will enable you to define advanced pagination within the overlay for use with spool entries consisting of different types of contents (see using Page control page 77).

Stating **Y** will enable you to create several copies of each page. Also design elements can be dedicated to specific copies. This is for instance used when making copies of Invoices where the overlay for the copy should have basically the same elements as the original but should be characterized by the text “COPY” printed across.

Duplex options

These options are only visible if you have selected duplex print for the actual file-set (Option **5. Create/Delete Overlay File Sets** page 355). If the field **Duplex print** is filled in with **N**, only the front of the paper is used.

Duplex print: If you answer **S** or **L** in the **Duplex print** field, both sides of the paper is used, including the answer you have given about the duplex margin being at the long or short edge of the paper. When filling in **S** or **L** for **Duplex print** together with **N** for **Copy Management** the **Page Control** on the **Design Overlay** screen will be extended to include selection for restricting overlay to odd or even pages (See **Page control** page 77).

WARNING

Combining Duplex with spooled file data on both back and front (i.e. without a back page overlay) with copy management is not supported. If you try the result is not what you might expect..

Forced front page: Controls if the overlay for which the Duplex function has been selected, always should be printed on a front page, when a overlay selector is used. By stating *YES, you will avoid that an intended first page is printed on the duplex side of the previous page.

Duplex margin: This value in the field states the width of the binding margin in n/240 inch.

Back page overlay: This field can be left blank meaning that you want to use the same overlay on both sides of each sheet. If the field is filled in with an overlay name, only the front pages will be used for print and the back pages will contain the back page overlay **without** any spool data.
It is however, possible to put variable data on both sides of the sheet with different overlays, by leaving this field blank, and using sub-overlays. A simple "main" overlay should be made, that contains two sub-overlays calls only. In the two If..then lines in the main overlay, the field "number of lines to remap", will indicate the lines the sub-overlay should process. All formatting must be handled by the sequence lines in the sub-overlays.

Entering ***VAR** in this field will bring up a screen, where the conditions for selecting the overlay must be stated. Note that *VAR can only be used with **Code for placement=B** (or blank):

```
         Design InterForm 400 overlay                                  APF300D

Overlay name          TEST

Overlay text
Line spacing          040       in 1/240 of an inch (*INPUT, 1-720)
Rotation              000       (*INPUT, 0, 90, 180, 270)
Extra left margin
        positions     ........................................
Maximum number of     :     Variable Back Page Overlay          :
  print positions     :                                         :
Extra blank lines     :  Prefix . . . . .  ______               :
           on top     :  Line number  . .  ___                  :
Font                  :  Position . . . .  ___ - ___            :
Extended page def.    :                                         :
Drawer                :                                         :
Paper Size            :                                         :
Multi-up              :  F3=Exit           F12=Cancel           :
Copy management       :                                         :
Duplex print          :.........................................: edge margin)
Duplex margin           0       in 1/240 of an inch (1-720)
Back page overlay     *VAR        Code for placement B (B=back page F=front)
             F4=Prompt          F11=Delete this overlay          F12=Cancel
F13=Set print parameters
```

Prefix The first part of the back page overlay name. The overlay which is called by this function consists of this prefix plus the character string found by **Line number** and **Position**. For instance if the prefix is INV, and Line Number and Position finds the string 001, the back page overlay should be named INV001.
The Prefix must consists of minimum 1 character, which can not be a number. The Prefix plus the string found with Line Number and Position can not exceed a total of 10 characters.

Line Number: The print line in the spool entry defining the last part of the back page overlay name.

Position: The column interval containing the last part of the overlay name.

It is also possible to state ***CPYMNG,** as the **back page overlay** when using duplex output. That is for use together with Copy management. If used you are afterwards prompted for the back page overlay for each of the copies, that have been specified for Copy management. Please note, that you must use back page overlays, when you combine duplex and copy management. You define it like so:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name          DUPLEX       Last update . . :  2016-04-05     F20=Log

Overlay text          Main duplex ovl with Cpy Mng.
Line spacing          040       in 1/240 of an inch (*INPUT, 1-720)
Rotation              000       (*INPUT, 0, 90, 180, 270)
Extra left margin
        positions      0        (0-99)
Maximum number of
  print positions     378       (1-378)
Extra blank lines
           on top      0        (0-99)
Font                  0066      *NONE, *INPUT, fontnumber     F4=List
Extended page def.    N         (Y N)
Drawer / Papertype    *PRINTER  (*INPUT, *PRINTER, 1-256, Name)   F4=List
Paper Size            0         F4=List
Pages per side
Copy management       Y         (Y N)
Duplex print          L         (N=no  S=short edge margin  L=long edge margin)
Duplex margin           0       in 1/240 of an inch (1-720)
Back page overlay     *CPYMNG     Code for placement   (B=back page F=front)
F3=Exit      F4=Prompt           F11=Delete this overlay          F12=Cancel
F13=Set view/print parameters    F14=View
```

With these settings you will be prompted for the back page overlay for each copy defined in copy management:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: DUPLEX      Overlay text: Main duplex ovl with Cpy Mng.

Selection of back page overlay is controlled per copy


Primary      Back page
copy         overlay
  1          TERM1_____   Overlay name, *VAR, *NONE
  2          TERM2_____









F3=Exit      F14=View                                              F12=Cancel
```

Code for Placement: The possibility of placing the back page overlay on the front of

the physical printed page is a unique feature of the system, which overcomes a common problem for duplex printing on pre-printed forms. Normally a HP printer will print the back page of a duplex print first in order to have it faced down in the output tray. This means pre-printed forms has to be turned upside-down in the input paper tray depending on the print being simplex or duplex. When stating **F** (front) as code for placement you will not have to do this, as the system will reverse the order before printing.

☺ **TIP** ☺

An easy way of making "short bind" duplex, is to define the front page overlay as normal, but rotate the back page overlay 180 degrees.

💣 WARNING 💣

***Do not** combine duplex with spooled file data on both front and back (without a fixed back page overlay) and copy management. If you combine the two the result is not what you might expect...*

Function keys for display of a spool file

F13: Set view/print parameters:
This function is used to set the attributes of the spool file you want to merge the overlay with. This must be done prior to selecting F14, F18 or F19.

```
        Select Parameters for view / Print                          APF730D

Overlay name            __________
or Overlay Selector     ________
Primary/Secondary set   _           1=Primary 2=Secondary
Spooled file:
   Job name             __________  Job system name  *ONLY___   *ONLY,*CURRENT,
   User                 __________                             *ANY
   Job number           ______      Creation date    *ONLY     *ONLY, date
   File name            __________    Creation time  ______    blank, time
   Spool file no.       ______      Number, *ONLY, *LAST
Code page               ______      Number, *INPUT
Unicode output          ______      *INPUT, *YES
Form type               A4________
Copies                  __1         (1-255)
Drawer / Paper type     *PRINTER__  (*PRINTER, *INPUT, *OVERLAY, 1-255, Name)
View format             _           1=PCL  2=B/W PDF  3=Color PDF


Name of output queue to search if spooled file is unknown:

   Output queue         __________
      Library             __________

F3=Exit                       F4=List overlays
```

Overlay Name — Name of an overlay in the file-set you want to view together with a spool file when using the PCL viewer (F14). This is required, though the information is used for PCL viewing only.

Primary/ Secondary Set: — If you have defined **Copy Management** for the overlay (see page 78 and 70) you can test if you have made the correct selection of overlay elements, by printing the overlay elements for one of the two sets only. If this field is left **blank** (default) the system will as default pick the **Primary** set.

Overlay Selector: — If you have defined an **Overlay Selector** you can test if it is able to pick the correct overlay. In this case **Overlay Name** above must be blank. (refer to section **Working with Overlay selectors** page 136)

Spooled File: — Spooled file identification can be entered here.

There is an alternative to typing all the information manually. If you type the name of an **output queue** in the bottom of the screen and press **Enter**, you can fetch the information about the spool entry from a view of the selected output queue by selecting with option **1**:

```
                          Work with Output Queue

Queue:   PRTHP3         Library:   QUSRSYS

Type options, press Enter
  1=Select 2=Change 3=Hold 4=Delete 5=Display 6=Release 8=attributes

Opt  File        User        User Data   Sts   Pages  Copies  Form Type   Pty

 1   QPRINT      INTERFORM   INVOICE     RDY       1       1   *STD         5
 _   QPRINT      INTERFORM   PROFIT      RDY       5       1   *STD         5









Parameters for option 2
===> ____________________________________________________
F3=exit   F11=View 2   F12=Previous   F21=Description   F24=More keys
```

Code page: This defines if a specific code page should be forced for the spool entry. ***SYSVAL** means that the default code page specified for the system will be used, unless a specific code page is defined as attribute for the spool entry**.**

Unicode output: ***INPUT** means that the merged spooled file will be unicode only if the USRDFNOPT attribute of the spooled file selected is '**IF-UCS2**'. Specify '*YES' if you want unicode output independently of the original spooled file.

Form type: The Form type of the resulting printout. Default ***STD**

Copies: 1-255

Drawer: Overwrite the drawer settings of the overlay **global settings**.
For details about how to select drawer by use of paper type refer to page 417 and 481.

View: You can specify what you want to view when you press F14 in overlay design. If you choose '**1=PCL**' pressing F14 will display the result of a merge to PCL - in SwiftView. Choosing option **2** or **3** will make InterForm400® create a PDF file and display it using Acrobat Reader (assuming that Acrobat Reader is associated with PDF files on your PC). Refer to page 553 for more information.

NOTE

In order to get PDF output you need to purchase the PDF module or the classic package for InterForm400.

Output Queue: The name of the output queue where the spool entry to be merged is placed.

Library: The library of the above output queue. If left blank the library list will be used.

F18: DSPSPLF
With the Remap Window this function is relevant for displaying the spool entry in order to determine lines and columns for the Remap Window. F18 prompts the command DSPSPLF with the job information set by **F13 Set view/Print parameters**, or by in

menu **3. Merge spool entry with overlay** (page 131). Pressing **F18** will only appear if this has been set **prior** to entering this menu .

F19: **DSPPFM**

This function works like **F18**, but prompts the commands DSPPFM for displaying the spool entry as a physical file. This is useful for revealing reprinted lines (bolding), which is not displayed with F18 DSPSPLF.
Remember to subtract the first 4 positions containing SKIP/SPACE information, when calculating coloumn positions in the DSPPFM view..

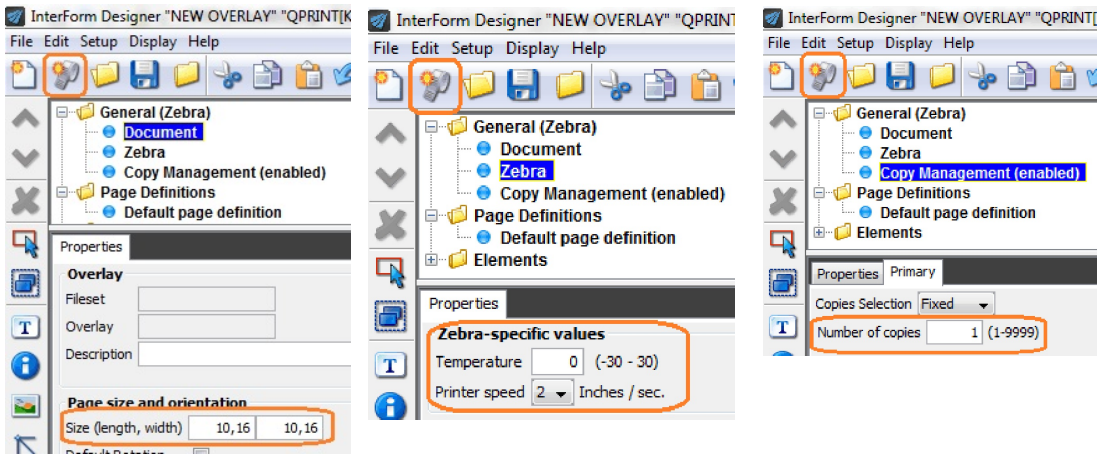
Changing the unit of measurement:

After you press Enter on the screen above you can actually change the unit of measurement in this 'green screen designer' as in the graphical designer. Just press **F22=Set unit** to change the measurement unit to millimeters or inches and pels.

Considerations for Zebra overlays

> **NOTE**
> Creation of ZPL output in InterForm400 requires purchase of the ZPL module or the classic package.

For overlays intended to be used for label printers the Design Overlay screen looks like this:



The especially Zebra related parameters are:

Page size:
The length and width of the labels to print on.

Temperature: The temperature to use for the printing head. This number is a **relative** value (-30 to 30) for the temperature to use for the print head of the Zebra printer. This value will be added to the **Darkness** value specified on the printers display. That is if Darkness is 10 and temperature is 5 the actual Darkness value for merges with this overlay will be 15. If the sum of temperature and Darkness is outside the range 0-30 the nearest value is used.

Printer speed: Specify the printing speed in number of inches per second. Note, that the highest possible print speed varies from one model to another.

Copy Management:

For Zebra/Intermec printers the number of copies can be up to 9999. If you set the number of copies to 9999, then the printer will print the same label indefinitely.

The **Ink element** is not supported for ZPL/Intermec output. To print something in white on black you just print in the same place twice in the same place - in ZPL.

Remember to create your overlays in a file set that fits the required output: A **file set** is intended for **either PCL/PDF** output **or ZPL/IPL** (IPL=Intermec Printer Language) output.

The fonts and images must be created/installed specifically for Zebra/Intermec.

Special printer types are also used for Zebra/Intermec output.

☺ **TIP** ☺

If you want to insert text, frames or images in reverse i.e. white on black background you can do it by first adding a frame with black filling (=pattern) and then place the text or image on top of the black frame (without specifying white in an Ink command). In this manner you reverse the part of the text or image, that overlaps the black frame.

☝ **NOTE** ☝

Make sure, that the label length stated is correct. If not this will affect the positioning of elements placed with rotation 90 and 270.

💣 WARNING 💣

Use a relatively low temperature e.g. 0 in order to avoid burn through of the ribbon and ***potential damage*** *to the print head. The wear of the print head increases when using a higher temperature (or using a lower distance between paper and print head).*

☺ **TIP** ☺

The print speed and temperature are related i.e. a higher speed might require a higher temperature and for lower speeds a lower temperature may be sufficient.

☺ **TIP** ☺

Regarding ***barcode printing*** *on label printers: If possible it is a good idea to place the lines of the bars parallel with the travelling direction of the paper. In such a setup the print head will not need to cool off and heat up for each bar thus making it possible to print faster and use a lower temperature/Darkness setting.*

Extended Page Definition

Extended formatting is used to format intervals of lines from the spool entry. This method can be used as alternative to using the design command type **9. Remap Window**, and will work with **8. Tabulator** lines

If the global setting **Extended Page Definition** equals **Y**, the following screen will be displayed

```
          Update extended page definition                              APF305D

Overlay name: MYDEMO      Overlay text: Mydemo

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display   8=Start AFC-job   9=End AFC-job
        From         Top-          Left         Line-
Opt     linenbr.     margin        margin       spacing      Font

(No extended page definitions - Press F6 to create.)









                                                                        End
F3=Exit        F5=Refresh        F6=Add                          F12=Cancel
```

The Global settings **Line Spacing**, **Extra blank lines on top** and **Font** will be decisive until the first line of extended page definition is met.

From line number: A line number of the spool entry, from which the formatting should change. The formatting will be valid until a new line number is defined.

Top margin: Absolute margin from top edge of the page dissolved in whole inches and pels (see **Measuring formats** page 73).

Left margin: Absolute margin from the left edge of the page dissolved in whole inches and pels (see **Measuring formats** page 73). Note that this value will be added to the leftmargin value of the overlay command type **8. Tabulator**.

Line spacing: Measured in n/240". For instance 6 lines per inch (1/6") will give the value 40.

Font: The font ID of the formatted text.

F4: Prompting of the font list

F18: This function will display the spool entry with the job information used for merge in option **3. Merge spool entry with overlay** (page 131). Pressing **F18** will only work if this merge has been made **prior** to entering this menu.

Copy Management

Copy management is used to define the number of copies one single overlay should produce when triggered. The following screen will automatically appear when pressing **Enter** from the **global settings** menu where **Y** is filled in for **Copy Management** :

```
         Design InterForm 400 overlay                                APF300D

Overlay name: IF400DEMO    Overlay text: Demo overlay for InterForm 400

Number of copies of each page

  Primary set  . . . . . .  2_________     1-9, *VAR, *INPUT
  Secondary set  . . . . .  1_________     1-9, *VAR, *INPUT

F3=Exit                                                      F12=Cancel
```

Two sets of copies each consisting of up to 9 copies from a single spool entry can be defined. The overlay elements (boxes, lines, images etc.) used on the primary and the secondary sets can be different according to the definitions of a single overlay (See **Copy Management** page 78)

Primary set: A value of 1 to 9 copies can be defined.

By selecting ***VAR** you will be able to define a line and position number in the spool entry where the desired number of copies are specified. This of course requires the application to insert this in the spooled file.

***INPUT** will use the COPIES attribute of the original spooled file. Notice however, that values higher than 9 will be interpreted as 1.

When used with **Auto Forms Control** this set (*PRI) is the default set to be used in **1. Merge with overlay** (see page 158)

```
  Primary set . . . . . .  *VAR         Print line       Position
```

Secondary set: This is basically just an extra set of copies made from the same spool entry. The secondary set is mainly intended to be used to create an extra set with a fixed number of copies, independent of the variation of copies in the main set. Stating a number for “Secondary set” will not force a printout of this set. The secondary set will only be printed if the Auto Forms Control definition **1. Merge with overlay** states **Primary /Secondary set=*SEC**. (see page 158), or if you in **3. Merge spool entry with overlay** (page 131) have stated **2=secondary**.

Source Drawers for Copies

After having stated the number of copies, pressing **Enter** will extend the screen to include definitions of source drawers:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: IF400DEMO   Overlay text: Demo overlay for InterForm400

Number of copies of each page

  Primary set  . . . . . . . 2_______ 1-9, *VAR, *INPUT
  Secondary set  . . . . . . 1_______ 1-9, *VAR, *INPUT

Select paper from the following drawers:

                    Copy     Primary     Secondary
                      1      __________  __________          Valid drawers
                      2      __________                        1-255
                                                             Valid paper types:
                                                                F4=List

Do you want stapling . . Y/N     _

F3=Exit                                                          F12=Cancel
F13=Set view/print parameters   F14=PCL-view       F18=DSPSPLF   F19=DSPPFM
```

Here you can define from which drawer each copy should be taken from.

See **Cassette Selection** page **480** for more information of selecting by drawer number. Refer to page **481** and **417** for information of how to select drawer by paper type.

WARNING

Different printer manufacturers have diverting opinions of which value should correspond to which physical drawer. Therefore please consult your printers technical reference to verify the drawer mapping.

WARNING

Combining Duplex with spooled file data on both back and front (i.e. without a back page overlay) with copy management is not supported. If you try the result is not what you might expect..

Stapling

This option defines if the copies should be stapled. This option can only be used on the printers stated below. Remember to use printer type HP4_PJL or HP4D_PJL when merging.

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: TEST        Overlay text:

Number of copies of each page
  Primary printout . . . . .  2
  Secondary printout . . .  ...............................................
                           :  Stapling primary printout                    :
Select paper from the follo :                                              :
                           :  Select printer type for stapling             :
                    Copy   :                                               :
                      1    :     printer type    1=HP5Si Mopier            :
                      2    :                     2=Lexmark Optra N         :
                           :                     3=IBM NP24 / IP32/40      :
                           :                     4=Kyocera 7000/9000       :
                           :                     5=Xerox N24 / N32 / N40   :
                           :                     6=Xerox DC 240/255/265    :
                           :                     7=Océ  3165               :
                           :  Notice: Stapeling requieres use of           :
Do you want stapling . . Y/ :          printertype HP4_PJL or HP4D_PJL.    :
                           :                                               :
F3=Exit                    :  F3=Exit           F12=Cancel                 :
F13=Set print parameters   :.............................................:
```

Refer to page 422 for a description of how you can define your own PJL sequences to be used with printer type U=User defined.

Measuring Methods

All coordinates entered in InterForm400® must be dissolved into inches and pels - apart from the graphical designer, where you can also chose to work in 'normal' inches and cm.

Digits before the decimal point specify inches, and the digits after the decimal point specify pels and must not exceed 239. An inch is dissolved into 240 pels.

Examples of values:

1"	1,000	= **1,000**
1 ½"	1,(240/2)	= **1,120**
1 1/6"	1,(240/6)	= **1,040**
1 5/6"	1,(240/6 x 5)	= **1,200**
1,85"	1,(240 x 0,85)	= **1,204**

You will notice that it would be most convenient to use a ruler indicating lines per inch.

When multiplying and subtracting values it might seem a little more complicated, the following are examples and the formulas used to solve it:

3,100 + 1,200 = 4,+300	=> 4+1,(300-240)	= **5,060**
3,100 - 1,200 = 2,-100	=> 2 -1,(240-100)	= **1,140**

Orientation of design elements

The rotation and positioning of elements depends in the **New Behaviour option** on the overlays. The New behaviour option is described on page 595.

If New behaviour is activated you can rotate the complete overlay by changing the main rotation and all elements are positioned with the upper left corner as a reference - for all rotations.

If New behaviour is disabled, then rotation is handled differently (like in the pre 2017 versions):

All positions are measured absolute to the upper left corner of the page, but depending on the type of overlay element and rotation of the page:

Tabulators, images, PCL files.
Relative to the **upper left corner** depending on the rotation specified by **Rotation** under **global settings**.

Texts and remap window. Rotation is set on the element independently of the overlay rotation.

Frames and lines: Relative to the **upper left corner** of a **Portrait** page, **regardless** of the rotation specified in the **global settings**.

☺ **TIP** ☺

*You can print out a **ruler** from the Service menu option **4. Print ruler** (see page **?**). If you will use an ordinary ruler, it is an advantage to find one with indication of **6 lines per inch.** Using the **overlay "ruler"** in file set "sample", as an **sub-overlay** is also a method for easy positioning of overlay elements and spool data.*

The Design Screen

Note: Refer to **Appendix O** on page 584 for information of how to install and use the InterForm400® graphical designer.

When you press **Enter** from the previous screens you will finally reach the screen where the entry of overlay elements are made:

```
          Design InterForm 400 overlay                                  APF300D

Overlay name: IF400DEMO    Overlay text: Demo overlay for InterForm400

Seqnbr. Type  Overlay definition









Seqnbr. Type
_______









F3=Exit             F5=Service            F12=Cancel         F18=View Spool entry
```

An overlay consists of a number of sequence lines, each defining a part of the overlay like frames, lines, text constants etc.

When entering a screen with existing sequence lines the last entered lines will be displayed. The system simply believes that you intend to continue entering overlay elements

You can scroll through the lines using page-up and page-down.

Each line in the overlay definition is accessed via its **sequence number**. If you select an existing sequence number you will be able to update or delete this particular line. If you select a line number not already in the definition it means you wish to add a new line.

Sequence numbers can be entered with 1 decimal position. This opens up the possibility of inserting a new line anywhere in the definition, as the specification of a line with a decimal results in the addition of 1 to the sequence numbers of all succeeding lines in the definition. The new line is placed in the vacant space in the reference series. As example entering **12,1** will insert a sequence number between line 12 and 13. When saved the inserted sequence line is assigned number **13** and the following lines are incremented by one.

After entering a sequence number press the **Field Exit** key to add or edit this line. The key mapping of keyboards varies from one PC to another. The **Field Exit** key could be assigned to e.g. the right **Ctrl** key, the **Enter** key or the **'+'** key of your numeric keyboard.

Service Options

By pressing **F5** you will get a list of service options:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: IF400DEMO  Overlay text: Demo overlay for InterForm 400

Seqnbr. Type  Overlay definition









Select one of the following options:
 1. Move the placement on the page
 2. Move  definitions to another sequence number.
 3. Copy definition into this overlay
 4. Delete lines
 5. Resequencing
 6. Print overlay definition
 7. Rotate overlay
Option:  __
```

With these you can organize the overlay definitions:

1. **Move the placement on the page**
   Here you can enter an interval of sequence lines and adjust them horizontal and vertical in a single action instead of changing entering each line.

```
In this function you can move the overlay up/down or left/right on the page.

Line interval to be moved . . . . . :  0000_ - 0000_

Distance to move:
      - to the right +/- _______
      - downwards    +/- _______
```

2. **Move definitions to another sequence number**
   If you made a lot of lines, you might want to reorganize them in order to get a better overview. With this option you define an interval of sequence lines to be moved to another line number.

```
In this function you can move an interval of definition lines to another
sequence number.

Sequence number from/to to be moved . . . .  0000  - 0000

Inserted at sequence number . . . . . .  ___1
```

3. **Copy definitions into this overlay**
   This option allows you to copy definitions in the same overlay or from another overlay

```
In this function you can copy lines into this overlay definition.

 Overlay to be copied from . . . . . .   TEST_____      blank = this overlay
 Sequence numbers from/to to be copied . .   0000_ - 0000_
 Inserted at sequence number . . . . . .   ___1_

 F4 = overview overlays
 F24 = shift to look at FROM-overlay
```

4. Delete lines

This option you delete an interval of lines instead of entering each lines and press F11.

```
In this function you can delete an interval of definition lines:


                  Interval . . .  0000_ - 0000_
```

5. Resequencing

If you have deleted lines you will get in the situation that you have free line numbers to insert new overlay definitions on. This option will sort all remaining lines numerical.

```
In this function you can resequence the lines in this overlay definition.




Press ENTER for resequensing. Press F12 for unchanged.
```

6. Print overlay definitions

This option will print out a detailed list of the existing overlay definitions on your default printer.

7. Rotate overlay

Chose this option to rotate the current overlay:

```
In this function you can rotate the whole overlay definition.

  Rotation . . . . . + ___      (090, 180, 270)



Press ENTER for rotate, Press F12 for unchanged.
```

An alternative way to copy, delete, rename and rotate overlays is found via the **2. Work with file sets** option on the administration menu as seen on page 355.

Overlay Element Selection Filters

When entering a sequence number and you press **Field Exit** the following entry screen will appear:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: IF400DEMO    Overlay text: IF400DEMO

Seqnbr. Type  Overlay definition




Seqnbr. Type  *=Suspend                        Page control
   1,0    _    _                               _
         1 = Frame          2 = Horizontal          BLANK = all pages
         3 = Vertical       4 = Line                1 = first page only
         5 = Text           6 = Print-info          2 = page 2 and succ.
         7 = Ink            8 = Tabulator           9 = last page only
         9 = Remap window   I = Image
         ? = If .. then     F = PCL-file
         G = HP-GL/2 file   S = Suboverlay
         C = Concat         * = Comment
F3=Exit                        F12=Cancel              F18=View Spool entry
```

Suspend: Next to the type you can enter an asterix (*) if you want to suspend/disable this design element. This is an alternative to deleting the element if you temporarily want to remove this element. The asterix is also shown when displaying the design element list.

The right side of the screen will contain entries for **Copy management** or **Page control** depending on the value for **Copy management** in the global settings of the overlay

Page Control

The **Page Control** fields are used to assign this specific sequence line to all printed pages or to selected pages only.

```
Seqnbr. Type                                        Page control
  1,0     _  1 = Frame          2 = Horizontal      _   BLANK = all pages
             3 = Vertical       4 = Line                1 = first page only
             5 = Text           6 = Print-info          2 = page 2 and succ.
             7 = Ink            8 = Tabulator           9 = last page only
             9 = Remap window   I = Image
             ? = If .. then     F = PCL-file
             G = HP-GL/2 file   S = Suboverlay
             C = Concat         * = Comment
F3=Exit                         F12=Cancel              F18=View Spool entry
```

WARNING

Do not use page control in conditioned overlays. (Overlays called by an If..Then line).

If **S** or **L** is filled in for Duplex Print for the global settings of the overlay the Page Control will be extended with a possibility of entering if page numbering should be made on odd or even pages only:

```
Seqnbr. Type                                      Page control
   1,0       1 = Frame          2 = Horizontal     _   BLANK = all pages
             3 = Vertical       4 = Line               1 = first page only
             5 = Text           6 = Print-info         2 = page 2 and succ.
             7 = Ink            8 = Tabulator          9 = last page only
             9 = Remap window   I = Image          _   BLANK = all pages
             ? = If .. then     F = PCL-file           1 = odd pages
             G = HP-GL/2 file   S = Suboverlay         2 = even pages
             C = Concat         * = Comment
 F3=Exit                        F12=Cancel             F18=View Spool entry
```

Copy Management

The entry fields for **Copy Management** will appear if **Y** has been selected for **Copy Management** in the global settings of the overlay.(see **Copy Management** page 61)

```
Seqnbr. Type                                          Copy management
  1      1   1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     _     _
             5 = Text           6 = Print-info        Secondary   _     _
             7 = Ink            8 = Tabulator
             9 = Remap Window   I = Image
             ? = If .. then     F = PCL-file
             G = HP-GL/2 file   S = Suboverlay
             C = Concat         * = Comment


 F3=Exit                        F12=Cancel          F18=View Spool entry
```

The **Copy management** field is used to assign this specific sequence line to all printed copies or to selected copies only.

The following are examples of definitions for copy control:

Use this overlay element on **all** copies of Primary and Secondary sets (all fields left blank):

```
  1      1   1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     _     _
             5 = Text           6 = Print-info        Secondary   _     _
             7 = Ink            8 = Tabulator
```

Use this overlay element on the **first copy** (the original) of the Primary set **only**:

```
  1      1   1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     1     1
             5 = Text           6 = Print-info        Secondary   _     _
             7 = Ink            8 = Tabulator
```

Use this overlay element on the **first copy** of the Primary set and the **first copy** of the Secondary set:

```
  1     1    1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     1     1
             5 = Text           6 = Print-info        Secondary   1     1
             7 = Ink            8 = Tabulator
```

Use this overlay element on **all copies** of the Primary set:

```
  1      1   1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     1     6
             5 = Text           6 = Print-info        Secondary   _     _
             7 = Ink            8 = Tabulator
```

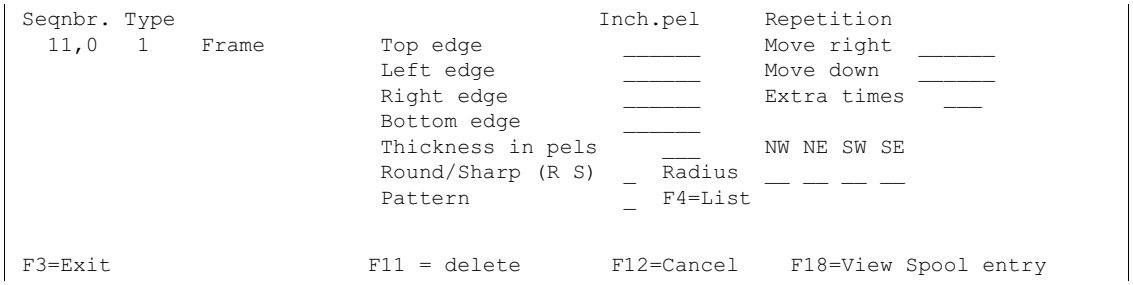
Use this overlay element **all** copies of both sets **except** the first one in the Primary set,

```
  1      1   1 = Frame          2 = Horizontal                    From  To
             3 = Vertical       4 = Line              Primary     2     6
             5 = Text           6 = Print-info        Secondary   1     6
             7 = Ink            8 = Tabulator
```

Overlay elements

Up to 9999 overlay elements can be made in one overlay.

1=FRAME



Top Edge: **Inches, pels** absolute to the upper edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Left Edge: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Right Edge: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Bottom Edge: **Inches, pels** absolute to the upper edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Thickness in pels: Thickness of a border in pels (1/240"). Zero means no border.

Round/Sharp: Determines whether the corners of the frame will be round or sharp. You can also specify the radius in pels of each of the 4 corners (NorthWest, NorthEast, SouthWest, SouthEast).

You can mix sharp and round corners by entering a radius in pels for the corners you want round, and state zeros for the corners you want sharp.

If you specify **R** for round corners without entering radius in any of the 4 fields, the system will use the default value of **24** as radius for all 4 corners.

Pattern: Defines a fill pattern for the frame. Left blank means no pattern. Refer to page 84 on how to use patterns.

Repetition

Move right: **Inch,pels** of the right movement of a duplicate of the frame relative to the value for **left edge**

Move Down: **Inch,pels** of the vertical movement of a duplicate of the frame relative to the value for **Top edge**

Extra times: Extra copies of the frame excluding the original. Extra copies will be displaced relative to each other according to the settings of **Move right** and **Move Down**.

NW: Radius in pels for the North West corner of the frame

NE: Radius in pels for the North East corner of the frame

SW: Radius in pels for the South West corner of the frame

SE: Radius in pels for the South East corner of the frame

Color Printing: When working in a file-set defined for color printing, the frame definitions will offer an additional pattern setting for color print. When having selected a color **INK** setting prior to the frame settings, this color **INK** selection will then be used for the printed frame and pattern. Frames defined with **Thickness in pels** (if any), will always be printed as a solid line.

```
Seqnbr. Type                                  Inch.pel     Repetition
   3.0   1    Frame          Top edge          ______      Move right   _______
                             Left edge         ______      Move down    _______
                             Right edge        ______      Extra times     ___
                             Bottom edge       ______
                             Thickness in pels     __3     NW NE SW SE
                             Round/Sharp (R S)   S  Radius  __ __ __ __
                             Pattern, B/W-prt    _  F4=List
                             Pattern, color-prt B   F4=List
F3=Exit      F4=Prompt                 F11=Delete          F12=Cancel
F13=Set view/print parameters   F14=PCL-view
```

2=HORIZONTAL LINE

```
 Seqnbr. Type                                Inch.pel     Repetition
   1      2    Horizontal line
                            From top edge  ______      Move right  ______
                            Left end       ______      Move down   ______
                            Right end      ______      Extra times   ___

                            Thickness in pels ___


 F3=Exit                    F12=Cancel             F18=View Spool entry
```

From Top Edge: **Inches, pels** absolute to the upper edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Left end: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Right end: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Thickness in pels: Thickness of a line in pels (1/240"). Zero means no border.

Move right: **Inch,pels** of the right movement of a duplicate of the line relative to the value for **left edge**

Move Down: **Inch,pels** of the vertical movement of a duplicate of the line relative to the value for **Top edge**

Extra times: Extra copies of the line excluding the original. Extra copies will be displaced relative to each other according to the settings of **Move right** and **Move Down**.

3=VERTICAL LINE

```
Seqnbr. Type                              Inch.pel     Repetition
  1      3    Vertical line
                           From top edge  ______      Move right   ______
                           From left      ______      Move down    ______
                           Lower end      ______      Extra times    ___

                           Thickness in pels ___


F3=Exit                      F12=Cancel            F18=View Spool entry
```

From Top Edge: **Inches, pels** absolute to the upper edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

From left: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Lower end: **Inches, pels** absolute to the upper edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Thickness in pels: Thickness of a the line in pels (1/240"). Zero means no border.

Move right: **Inch,pels** of the right movement of a duplicate of the line relative to the value for **left edge**

Move Down: **Inch,pels** of the vertical movement of a duplicate of the line relative to the value for **Top edge**

Extra times: Extra copies of the line excluding the original. Extra copies will be displaced relative to each other according to the settings of **Move right** and **Move Down**.

4=LINE

```
Seqnbr. Type                              Inch.pel     Repetition
   n,0   2    Line
                Endpoint 1 from top       ______      Move right   ______
                           from left      ______      Move down    ______
                Endpoint 2 from top       ______      Extra times    ___
                           from left      ______
                Thickness in pels            ___

F3=Exit                          F12=Cancel           F18=View Spool entry
```

This definition works similar to the two previous definitions. It distinguish itself by enabling lines to be diagonal. This also means you will have to define coordinates for each endpoint.

Endpoint 1

From Top: **Inches, pels** absolute to the top edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

From left: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Endpoint 2

From Top: **Inches, pels** absolute to the top edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

From left: **Inches, pels** absolute to the left edge of a portrait page regardless of the rotation specified by the **global settings** for the overlay.

Thickness in pels: Thickness of a the line in pels (1/240"). Zero means no border.

Move Right: **Inch,pels** of the right movement of a duplicate of the line relative to the value for **left edge**

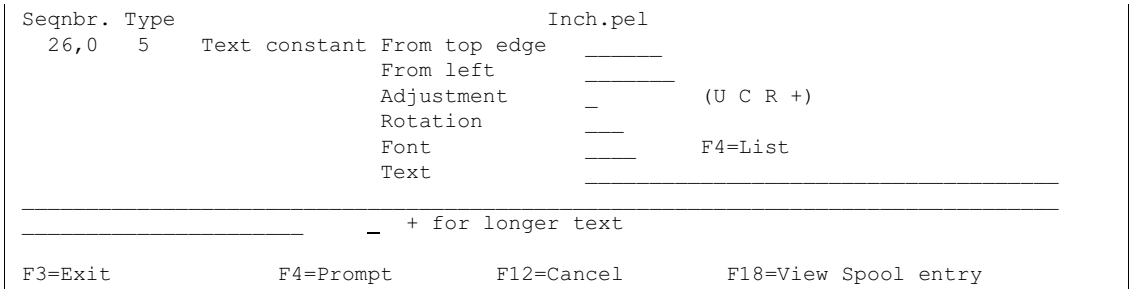
Move Down: **Inch,pels** of the vertical movement of a duplicate of the line relative to the value for **Top edge**

Extra times: Extra copies of the line excluding the original. Extra copies will be displaced relative to each other according to the settings of **Move right** and **Move Down**.

If you are making horizontal and vertical lines it is recommended that you use definition 2 and 3, and only use this definition for making diagonal lines.

5=TEXT

This can be used to insert text constants with varying fonts in the overlay.



From Top: **Inches, pels** absolute to the top edge of the rotation specified by the **global settings** for the overlay.

From left: **Inches, pels** absolute to the rotation specified by the **global settings** for the overlay.

Adjustment: Adjustment to use: **U**=Unadjusted, **C**=Centered, **R**=Right adjusted. If you select the special value, '**+**', a small window will pop up giving you the possibility to **underline** the text constant.

Rotation: The available values for rotation are: 000, 030, 090, 120, 180, 210, 270, 300 degrees.

Font: The font ID of the formatted text. Please note, that 2D barcode font numbers are not supported for text constants. You need to use either a concat or remap window element for 2D barcodes.

Text: Text field. If you type a '**+**' in the 'for longer text' field, you will be presented with a longer entry field, making it possible to enter a text field of up to 378 characters instead of the usual 128 characters.

6=Print-info (Print information)

```
Seqnbr. Type                              Inch.pel
   1.0   6    Print-info
                           From top edge ______
                           From left     ______
                           Rotation      ___
                           Font          ___0          F4=List
                           Info-type     __________    F4=List


F3=Exit      F4=Prompt                                      F12=Cancel
```

From Top: **Inches, pels** absolute to the top edge of the rotation specified by the **global settings** for the overlay.

From left: **Inches, pels** absolute to the rotation specified by the **global settings** for the overlay.

Rotation: The available values for rotation are: 000, 090, 180, 270 degrees.

Font: The font ID used for printing out the information required below.

Info-type: Type of information to be printed (can be prompted with F4). Here you can specify to either print out page numbers or information about the job, that created the spool file.

Value:	**Prints out:**
*PAGNBR	Page number of the actual page.
*ENDPAGE	Total number of pages.
*MUPPAGNBR	The actual page number when using Multi-Up.
*JOBNAME	The job name.
*USER	Userprofile used for the job.
*JOBNBR	Job number of the job.
*JOB	All information above, about the job.
*PGM	The program, that created the spool file.
*PGMLIB	Library of the program, that created the spool file.
*OVERLAY	The overlay, that has been merged with.
*FILESET	File set of the merged overlay.
*PRTTXT	The PRTTXT attribute of the merged spooled file.
*SPLSTAMP	The date and time of the spooled file in the format YYYY-MM-DD HH:MM:SS.

☺ **TIP** ☺

*You can print out the text: 'Page X out of Y', where X is *PAGENBR and *ENDPAGE is Y. Place the text 'Page out of ' using option 5=Text, and then place the two numbers using option 6=Print-info with *PAGENBR and another with *ENDPAGE.*

7=INK (fill pattern for succeeding sequence lines)

```
Seqnbr. Type
   1,0   7    Ink

                Select ink for the succeeding lines
                         Pattern             8    blank = unchanged,
                                                  0 = 100% white shading,
                                                  1-8 = 1-100% shading, ...

F3=Exit                                                        F12=Cancel
F13=Set view/print parameters   F14=PCL-view
```

Normally the system overwrites whatever might be the original contents, while leaving the background unaltered.

With this overlay element the **Ink** can be changed enabling printing white on black background, a pattern transparently on another pattern etc. The possibilities are numerous.

Pattern : For the pattern the following are valid:

0	100% white shading (erases background)
1	2% shading
2	10% shading
3	20% shading
4	35% shading
5	55% shading
6	80% shading
7	99% shading
8	100% shading
A	1% shading (600 DPI)
B	3% shading (600 DPI)
C	6% shading (600 DPI)
D	8% shading (600 DPI)
E	24% sharding (600 DPI)
-	Horizontal lines
!	Vertical lines
/	Diagonal lines (to the right)
\	Diagonal lines (to the left)
+	Horizontal and vertical lines
X	Crossing diagonal lines

Examples on use of Ink:

We have first made four large frames with fill pattern**"\"** (diagonal stripes \\\).

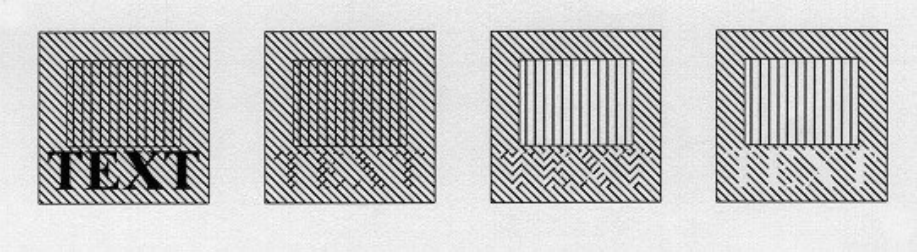
In the sequence lines after, we have defined 4 small frames with fill pattern **"!"** (vertical stripes **|||**) and 4 text constants printed with font **2103**, which fits in the large frames.

In frame **1** and **2** we state an Ink just before the text line. You will notice, that the pattern of the elements are placed on top of the previous placed elements.

If you want the small frame and text to be shown without the lines of the larger frame you could choose to first place the same frame and text with fill pattern 0 (erase background) before reprinting it with the wanted Ink as seen in frame **3**. Here **'!'** is used for the small frame and **'/'** is used for the text.

Frame **4** shows the result when choosing pattern = 0 (erase background) for the Ink and printing TEXT. See the results below:

Black Ink	Slash (/) Ink	(0) Ink followed by Ink(/) / Ink(!)	(0) Ink



You can also insert an image as a watermark, if you change the ink to be shading . Note however, that you cannot use Ink to change PCL files into watermarks.

Color Printing: When working in a file-set defined for color printing the INK settings will have additional options, as per below.

```
Seqnbr. Type
   2.0   7    Ink

                Select ink for the succeeding lines
                         Pattern, B/W-prt     _     blank = unchanged,
                                                    0 = 100% white shading,
                                                    1-8 = 1-100% shading, ...
                         Pattern, color-prt  8     (See above)
                         Color               __3   1=Black, 2=Grey, 3=Red, ..
F3=Exit      F4=Prompt                        F11=Delete    F12=Cancel
F13=Set view/print parameters   F14=PCL-view
```

This enables printing of spool data, text constants, lines and frames in color on PCL compatible color laser printers.

☹ TROUBLE SHOOTING ☹

Remember to select a color printer type when printing to a PCL compatible color laser printer (HP5C, HP4500, HP4500D)

☝ NOTE ☝

Ink commands in main overlays will have not effect in conditioned suboverlays called by If..Then.

8=TABULATOR (Paragraph tabulation)

A "tabulator" performs formatting and horizontal movement of an interval of lines in the spool date. Almost the same result can be obtained by using command type **9. Remap Window.**

The line and position numbers to be entered are those appearing in the input, regardless of a general margin or extra blank lines defined for the overlay.

```
Seqnbr. Type
  1      8    Tabulator
                Input:     Line            ___ - ___
                           Position        ___ - ___
                Print:     From left edge  ______ Adjustment _ (U L C R N B +)
                           Font            ____      F4=List
                Condition: Position        ___ - ___
                           Is > = < N      _ - __________
                           Blank after     _  B = Blank condition after
                More conditions            _        (Y N)
F3=Exit            F4=Prompt           F12=Cancel        F18=View Spool entry
```

Input Line: The line interval to read including both lines entered here.

Input Position: The Column interval to read including both positions entered here

From left: **Inches, pels** absolute to the rotation specified by the **global settings** for the overlay. If moved beyond the paper edge (e.g. 14") the data will be removed from the data stream. Note that the Left edge is measured from the physical paper edge unless the line interval of the Tabulator is included in an **Extended Page Definition** interval. In this case the Left Edge of the Tabulator is measured from the **Left Margin** defined in the Extended Page Definition.

Adjustment: Formatting of the text field. The Valid values are:

- **U** **Un-formatted**. The area is printed without any changes to formatting, and spaces.
- **L** **Left-adjustment**. Spaces proceeding the first character in text lines in the tabulator area are removed, causing the area to be left adjusted at the position indicated by **From Left**.
- **C** **Centred**. Spaces within the tabulator area before and after text lines are being removed, and the area is centred around the position indicated by **From Left**.
- **R** **Right-adjustment**. Spaces following the character in text lines in the tabulator area are removed, causing the area to be right adjusted at the position indicated by **From Left**.
- **N** **Numeric**. Indicates if the text lines in the tabulator area should be considered as numbers (amounts).
- **B** Print succeeding spaces in barcode data. Indicates if the spaces in the coloumn interval succeeding the barcode data should be converted to barcode. This only apply to the barcodes 128 and 3of9. The barcodes will always be left-adjusted. (Normally succeeding spaces will be ignored.)

+ Opens up for **Extended Adjustement** for definition of Underline of text in the tabulator and/or lines of periods (known as punctuation or dot leaders) made after each line of the tabulator. The following options appear when **+** is entered:

Adjustment: The adjustement of the underlined or punctuated lines. Values U, L, C, R or N acording to the above

Underline: Underlining of text in the tabulator (spaces are not underlined).

Punctuation Length: If the last position of a line in the tabulator, defined by the second **Input Position** field, is a **period sign**, a line of punctuation will be printed. The punctuation will start after the last printable character, and end at the position (inches,pels) stated in this field counting from the position stated in **From Left**. Only Adjustment values **U** and **L** can be used. No punctuation will be made if other values are used, if no period sign is found or if the text exceeds the punctuation length.

Font: The new font of the formatted text.

Condition: An optional set of values used if the tabulator should be executed on a certain condition.

Position: Only activate the tabulator If a character string in the interval of lines defined by the Tabulator matches this character string according to the following condition.

Is >=<N Only run tabulator if this following field contains a **text** string or a **number** which match one of the following valid operators:

> Greater than a number entered in the following field

= Equal to a number or a text string (case sensitive) or a number entered in the following field.

< Less than a number entered in the following field

N Not equal to a number or a text string (case sensitive) or a number entered in the following field.

A Acceptable characters. All the characters in marked interval must be one of the characters in the following field.

U Unacceptable characters. None of the characters in the marked interval must be one of the characters in the following field.

(See page 91 for a tip on use of '>' and '<')

Blank After: Stating **B** will remove the text string or the number which has been used for the condition from the resulting print out.

More conditions: With this option you can tell InterForm400 to only remap the line if multiple conditions are true for the current line. Refer to page 96 for such an example.

F18: With the Tabulator the function is relevant for displaying the spool entry in order to determine lines and columns for the tabulator. F18 prompts the command DSPSPLF with the job information used for merge in option **3. Merge spool entry with overlay** (page 131). Pressing **F18** will only work if this merge has been done **prior** to entering this menu.

💣 WARNING 💣

If two or more overlapping tabulators are defined the first defined will take the text it needs and leave blank positions in the relevant place for the next tabulator. ***A maximum of 200 tabulators per overlay can be defined. The limit of 200 includes any referenced suboverlays.*** *If you are using many conditioned tabulators you should consider to use the conditioned overlay instead.*

☺ ***TIP*** ☺

You can use a tabulator (left or unadjusted) to delete areas of text. Just tabulate the area over the edge of the paper (e.g. ***14"****). This will not produce unnecessary code in the data stream. InterForm400® detects if the code is defined to be printed outside the printable area, and will then just ignore it. In case you have made many re-mappings you can define a tabulator as the last sequence line which takes an area from line* ***1*** *to* ***72*** *and position* ***1*** *to* ***132****, and move it outside the page, thereby deleting any remaining data.*

Extended Adjustment *(**+**) does not support fixed width fonts e.g. Courier.*

☺ **TIP** ☺

*You can align numbers, where some are negative by use of numeric adjustment (**N**). See below.*

💣 WARNING 💣

Adjustment cannot place the adjusted text to the left of the left edge of the paper in ***PCL*** *output (negative positioning is not possible). So if you try to e.g. right adjust a long text, that cannot fit in between the left edge of the paper and the specified position the text is moved to the right to make room for all the text.*

Input data is formatted for fixed pitch font tabulation

```
  0         1         2
   123456789012345678901234 5
1 MICKEY MOUSE     1.100,00
2 refund EARS     -2.100,00
3 total            1.000,00-
```

If the above was uncritically printed with a proportional spaced font we would experience the result displayed below on the left, due to varying width of characters in the font.

If we made a tabulator that defined column 16 to 25 of line 1 to 3 to be printed with numeric adjustment, we would get the result displayed to the right. Notice that the **minus** is compensated for in the right alignment.

Proportional font without tabulator	Proportional font with a numerical adjusted tabulator
MICKEY MOUSE 1.100,00 **refund EARS -2.100,00** **total 1.000,00-**	**MICKEY MOUSE 1.100,00** **refund EARS -2.100,00** **total 1.000,00-**

9=REMAP WINDOW (re-mapping text areas)

Definition of a **Remap Window** gives you the possibility of taking a particular part of a given text line and print it elsewhere on the page, e.g. with rotation and another font.

A maximum of **300 Remap Window lines** are allowed in one overlay. The limit of 300 includes the remaps in any referenced suboverlay. Additional remap window lines are ignored. If this limitation is a problem you should use 'If..Then' lines instead to create overlays, that are

more efficient and easier to maintain. Contact your local InterForm400 dealer to get more information of how to do that if in doubt.

```
Seqnbr. Type
    1    9   Remap window  Input line       ___ - ___  Position ___ - ___
             Print:        From upper edge  ______  Line spacing . .  ___
                           From left edge   ______  Ignore blank lines  _  (Y N)
                           Adjustment       _       (U L R C N B E +)
                           Rotation         ___
                           Font             ____      F4=List
                           Blank original   _       B = blank original version
                 Condition: Position        ___ - ___
                           Is > = < N       _ ______________________________
                           Blank after      _       B = Blank condition after
                 More conditions            N       (Y N)
```

Input Line: The line interval to read including both lines entered here. If the end line is left blank or the same as the begin line, only one line will be remapped.

Position: The Column interval to read including both positions entered here. The maximum position interval is **198** characters.

Upper edge: **Inches, pels** absolute to the upper edge of the page according to the rotation specified by the **global settings** for the overlay.

From left edge: Inches, pels absolute to the left edge of the page according the rotation specified by the global settings for the overlay.

Line Spacing: Measured in n/240" which means 6 lines per inch will give the value 40. Failure to fill in this value, will default to a linespacing of zero resulting all text to be printed in one line.

Ignore Blank Lines: Enabling this option will cause all blank lines to be discarded.

Adjustment: formatting of the character string. Valid values are:

- **U** **Un-formatted**. The character string is printed without any changes to formatting, and spaces.
- **L** **Left-adjustment**. Spaces proceeding the first character in the character string are removed, causing the string to be left adjusted at the position indicated by **From left**.
- **C** **Centred**. Spaces within the character string before and after printable characters are being removed, and the string is centred around the position indicated by **From left**.
- **R** **Right-adjustment**. Spaces following the character in the character string are removed, causing the string to be right adjusted at the position indicated by **From left**.
- **N** **Numeric**. Indicates if the characters in the character string should be considered as numbers (amounts).
- **B** Print succeeding spaces in barcode data. Indicates if the spaces in the coloumn interval succeeding the barcode data should converted to barcode. This only apply to the barcodes 128 and 3 of 9. The barcodes will always be left-adjusted.
- **E** **Block formatting.** (aligning both left and right margins). This function enables changes to the number of letters per line, based on the font size and the **max. line width** of the justification. Distance between words is automatically adjusted.
  - **Maximum line width:**: Defines the maximum length of the justified text line.(Inch/pels)
  - **Right margin adjustment:** Defines when a text line should not be

justified. This is based on the percentage of text characters versus blank spaces left on the last line of a remapped paragraph.(0-100%)

Escape sequences: Used when working with spool files having escape sequences integrated.
(See Appendix H, page 495)

Note: For ZPL and IPL output the block function is limited to changing line breaks to fit a certain max width as well as setting a justification. Full justify is not supported for IPL output.

+ Opens up for **Extended Adjustment** for definition of Underline of text in the Remap Window and/or a line of periods (known as punctuation or dot leaders) made after the text. following options appear when **+** is entered:

Adjustement: The adjustment of the underlined or punctuation lines. Values U, L, C, R or N according to the above.

Underline: Underlining of text in the Remap Window (spaces are not underlined).

Punctuation Length: If the last position of the text line in the Remap Window, defined by the second **Input Position** field, is a **period sign**, a line of punctuation will be printed. The punctuation will start after the last printable character, and end at the position (inches,pels) stated in this field counting from the position stated in **From Left**. Only Adjustment values **U** and **L** can be used. No punctuation will be made if other values are used, if no period sign is found or if the text exceeds the punctuation length.

> **WARNING**
>
> *Adjustment cannot place the adjusted text to the left of the left edge of the paper in **PCL** output (negative positioning is not possible). So if you try to e.g. right adjust a long text, that cannot fit in between the left edge of the paper and the specified position the text is moved to the right to make room for all the text.*

Font: The new font of the formatted text.

Blank original **B** specifies, that the original text should be removed.

Condition: An optional set of values used if the remapping should be executed on a certain condition.

Position: Only activate the Remap Window If the character string read by the Remap Window matches this character string according to the following condition:

Is >=<N Only run tabulator if this following field contains a **text** string or a **number** which match one of the following valid operators:

> Greater than a number entered in the following field.

= Equal to a number or a text string (case sensitive) or a number entered in the

following field.

< Less than a number entered in the following field.

N Not equal to a number or a text string (case sensitive) or a number entered in the following field.

A Acceptable characters. All the characters in marked interval must be one of the characters in the following field.

U Unacceptable characters. None of the characters in the marked interval must be one of the characters in the following field.

(See page 91 for a tip on use of '>' and '<')

Blank After: Stating **B** will remove the text string or the number which has been used for the condition from the resulting print out.

More conditions: With this option you can tell InterForm400 to only remap the line if multiple conditions are true for the current line. Refer to page 96 for such an example.

☺ **TIP** ☺

*If you specify **B** for **Blank original** above, the text removed cannot be used for any conditions (**If..Then**). If you want to combine the two, then do not blank the original in the remap. Instead insert an additional line tabulating (**type=8**) the unwanted text outside the page e.g. 14 inches from the left..*

💣 WARNING 💣

***Extended Adjustment (+)** and **Full Adjustment (E)** does not support fixed width fonts e.g. Courier.*

💣 WARNING 💣

Even though you can remap text out of the visible paper, the text is still possible to find the resulting PDF file when you merge with a spooled file. If you want to eliminate that possibility use an unadjusted tabulator to remove the spooled file text.

☺ **TIP** ☺

*If you want to compare a column of numbers (Right justified) to a specific value using **'<'** or **'>'** and want to condition a '**Tabulator**', '**Remap**' or '**If..Then**' on the result, you should include a space in front of the number, that you compare with.*

This compare will work fine also for large numbers, that are much wider than the compared value.
(Reason: A space (' ') has a lower value than all digits '0'-'9'.)

Example for the remap window with block (E) adjustment:

If you select adjustment=E for a remap window, you will be prompted for the information below:

```
            Block formatting using escape sequences

Maximum line width . . . . .    3,000   Inches.pels, 0=No wrap
Right margin adjust  . . . .    90      0-100%
Escape sequences:
  Start underline  . . . . .    ___     ESC sequence
  End underline  . . . . . .    ___     ESC sequence
  Conditional hyphen . . . .    ___     ESC sequence
  New line . . . . . . . . .    ^NL     ESC sequence
  Half line up . . . . . . .    ___     ESC sequence
  Half line down . . . . . .    ___     ESC sequence
  End half line up/down  . .    ___     ESC sequence
  Reset font . . . . . . . .    ___     ESC sequence
  Font changes:
    ^F1 5006   ^F2 5008   ^F3 5010      ESC sequence
    ^F4 5011   ^F5 5012   ^F6 5013      followed by
    ^F7 5014   ^F8 5015   ^F9 5016      font number
  Color changes:
    ^C1 001    ^C2 002    ^C3 003       ESC sequence
    ^C4 004    ^C5 005    ^C6 006       followed by
F3=Exit   F4=List   F12=Cancel          color number
```

If you remap spooled file text like shown above, then the many special ‘escape’ sequences are searched for in the remapped text. If any of these ‘trigger texts’ are found, then the related command is executed instead and the ‘trigger text’ is removed from the output. **Up to 16** escape sequences can be defined.

With the setup above this remapped text:

^F3^C3Red^C4Green^NL^C5Blue

You will get this text in font 5010:

RedGreen
Blue

With the texts Red,Green, Blue printed in the color of the text.

I=IMAGE

```
Seqnbr. Type                              Inch.pel
  1       I     Image          From top edge  ______
                               From left      ______
                               Image name     __________ Name, *NONE, *COLORIMG
                                 Reverse Image  _         R = Reverse Image
                                 Resolution     ___       75,100,150,200,300,600
                               Color image      __________ Name, *NONE, *BWIMG
                                 Res-H          ___
                                 Res-H          ___

                F4 = overview images                  F18=View Spool file
```

From top edge: **Inches, pels** absolute to the upper edge of the page according to the rotation specified by the **global settings** for the overlay.

From left edge: **Inches, pels** absolute to the left edge of the page according the rotation specified by the **global settings** for the overlay.

Image name: The image imported under **5. Work with Images** in the administration menu. *COLORIMG refers to the color image below and *BWIMG refers to the black/white image above. Refer to page 407 for details.

Reverse Image: Entering **R** here will cause the image to be printed in negative. This option is meant to reverse images to normal in relation to some scanning utilities which saves TIFF reversed. Note, that performance wise it is better to reverse if necessary during install of the image in InterForm400 - refer to page **407** for more information.

Resolution: The resolution by which the image was scanned. This option can also be used to scale the image. For example an image scanned in 300 dpi can be scaled to double size in the print out by entering 150 here. Entering 600 here will cause the same image to be scaled to half size.

Color Printing: When working in a file-set defined for color printing the Image settings will have an additional definition for **color images**. The resolution of the color image can be adjusted from the original settings, by stating an specific resolution for Horisontal and Vertical values, respectively. (1-600 DPI).
If the resolution settings are left blank, the original resolution settings of the imported image will be used.
The Black/White image definition is available to facilitate printing of the same overlay both on black and white and color laser printers.

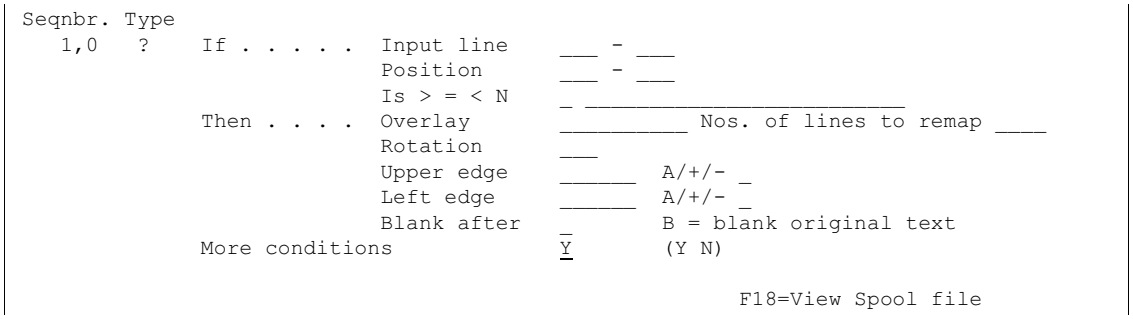
WARNING

Note that you can not specify rotation. An image always has the orientation specified in the global settings for the overlay.

?=IF...THEN (conditional nesting of overlays)

This feature is useful in the situation where the appearance of the overlay has to be dependent of the text that is merged with the overlay. This can be caused by a spool entry containing two or more different print outs, say invoices and credit notes, and where you want different overlays on the individual printout.

Another use of the "If..then" feature is the case where a detail in the printout shall result in adding an extra detail to the overlay (see example page **119**). Finally the **If..then** feature can be used for formatting print lines or groups of print lines appearing in random line positions (see example page **123**)



Input Line: The line interval to read including both lines entered here.

Input Position: The Column interval to read including both positions entered here

Is >=<N Only call the sub-overlay if this following field contains a **text** string or a **number** which match one of the following valid operators:

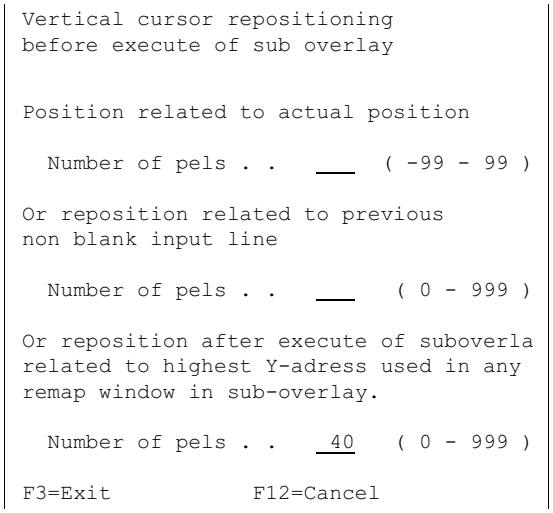
- **>** Greater than a number entered in the following field
- **=** Equal to a number or a text string (case sensitive) or a number entered in the following field.
- **<** Less than a number entered in the following field
- **N** Not equal to a number or a text string (case sensitive) or a number entered in the following field.
- **A** Acceptable characters. All the characters in marked interval must be one of the characters in the following field.
- **U** Unacceptable characters. None of the characters in the marked interval must be one of the characters in the following field.

(See page 91 for a tip on use of '>' and '<')

Overlay: The name of the overlay to be used as sub-overlay. If the name entered here is **MACROxxxxx** where xxxxx represents a numeric number (e.g. MACRO00001) InterForm400® will make a PCL macro call using this number. This will require the PCL macro to be loaded into the printer prior to using the main overlay. The PCL file can be loaded into the printer by the InterForm400® HPMACRO command (see page 536).

Number of lines to remap: This parameter is used to pass on a line interval to a sub-overlay which can process the lines with **Remap Windows** or **Tabulator** commands. The first line of the interval will be the line defined by **Input line** of the line interval and will be regarded as line 1 in the sub-overlay, i.e. the sub-overlay will consider the interval as a virtual spool entry to process.
Defining ***VAR** for this function, will cause this **If..then** command to continue checking all lines starting from the beginning of the input line interval, until another **If..then** command is met, provided that it is within the line interval of the original If..then command. If conditions for more **If..then** commands are true concurrently, the field **Lines to remap** is only used from the last **If..then** command.
This feature is designed specifically to format item lines printed in varying lines, and with varying number of lines between the item groups (see example page 123).

Vertical cursor repositioning
When you enter a number of lines to remap (other than 0) you are prompted for a vertical repositioning like below:



With this function you can vertically reposition the rest of the spooled file i.e. move the spooled file contents and all relatively positioned elements e.g. tabulators and remaps.

Position related to actual position:
This will move the rest of the spooled file up (negative value) or down (positive value). See page **123** for an example which uses this option.

Reposition related to previous non blank input line:
Use this repositioning e.g. in order to close the gap of blank lines on the original spooled file. (Use the If..Then scanning from the last non blank line.)

Reposition after execute of suboverlay:
The main benefit from this option is that if you are using an extended remap window in the suboverlay, then you can make the height of the suboverlay adaptive - to fit the text remapped lowest on the page, but this option can be used whenever the height of the suboverlay is uncertain.

Rotation: Rotation of the conditioned overlay - available for **New behaviour** only. If the rotation is 000, the conditioned overlay is using the same rotation as the main overlay. If the rotation is different than 000, then the conditioned suboverlay is rotated - compared to the main overlay (anti clockwise rotation).

Upper Edge: **Inches, pels** position according to the entry of the following field:

- **A** Vertical position of the sub-overlay is made absolute to the upper edge of the paper. Vertical positioning of elements in the sub-overlay is added to this value.
- **+** The sub-overlay is re-positioned downwards relative to the position of the string matching the criteria for the sub-overlay to be called. Vertical positioning of elements in the sub-overlay is added to this value.
- **-** The sub-overlay is re-positioned upwards relative to the position of the string matching the criteria for the sub-overlay to be called. Vertical positioning of elements in the sub-overlay is added to this value.

Left Edge: **Inches, pels** position according to the entry of the following field:

- **A** Horizontal position of the sub-overlay is made absolute to the left edge of the paper. Horizontal positioning of elements in the sub-overlay is added to this value.

+ The sub-overlay is re-positioned to the right relative to the position of the string matching the criteria for the sub-overlay to be called. Horizontal positioning of elements in the sub-overlay is added to this value.

- The sub-overlay is re-positioned to the left relative to the position of the string matching the criteria for the sub-overlay to be called. Horizontal positioning of elements in the sub-overlay is added to this value.

Blank After: Stating **B** will remove the text string or the number, which has been used for the condition, from the resulting print out. Remember, that if you use 'B' any subsequent conditioned overlays may be called if they are conditioned by blanks in these positions .

More conditions If you state a **Y** here, then you can use up to 4 conditions to check if the other overlay should be called. All conditions refer to the same spooled file line. With the condition below the conditioned overlay will only be called if the text found in line 13 position 57 is larger than 1000 and also smaller than 1004: (The window below will pop up if you set a Y for this field).

```
Conditions
Input line       13 -  13
AND/OR    Positions    Test    Compare value
           57 -  60     >      1000
 AND       57 -  60     <      1004
 ___       ___ - ___    _      ________________________________
 ___       ___ - ___    _      ________________________________
 ___       ___ - ___    _      ________________________________
Test:     > greater than, = equal, < less than, N not equal,
          A accepted characters, U unaccepted characters
F12=Cancel
```

WARNING

Global settings *of the sub-overlay, inserted by the if..then line, will be ignored as well as* ***6 = Print-info****.*

WARNING

Up to ***300 'If..Then'*** *lines can be defined for an overlay.*

WARNING

Only one level of conditioned sub-overlays is possible*.'If..Then' lines placed in overlays, which are called by 'If..Then' are never executed.*

WARNING

Totally blank lines are not considered *for the* ***If..Then*** *line i.e. a condition on one or more blank characters on a totally blank line will not trigger a call of the suboverlay. The OS/400 command DSPSPLF will show the lines which can be conditioned.*

F=PCL-FILE

Insertion of a PCL-file should be avoided if at all possible. The PCL file as a design resource is not displayed in the designer and can only be used for PCL output - not for PDF, ZPL nor IPL.

The only situation where a PCL file could be considered is, if you have an image with grey tones, that does not look good as a sharp black/white TIFF image. If in such a situation you could also consider to create a color output even if the printer is only black/white as many black/white printers are able to convert the color data stream into a nice black and white output. Help to generate and use a PCL file can be found in the cookbook here: http://download.interform400.com/shares/public/CookBook.zip

```
Seqnbr. Type                              Inch.pel
   1.0   F    PCL-file      From top edge _______      (+ -)
                             From left     _______      (+ -)
                             File name     __________
```

The overlay element that defines the PCL file to be inserted is quite simple. It is, however, possible to fine adjust the placement of the PCL form compared to the positions defined in the original PCL-file.

From top edge Inches, pels vertical position of the PCL file is made absolute to the upper edge of the paper. Vertical positioning of elements in the PCL file is added to this value. Adding a minus after the value, will cause an movement upwards. (e.g. **1,120-** for **1½"** negative movement)

From left edge Inches, pels horizontal position of the PCL file is made absolute to the left edge of the paper. Horizontal positioning of elements in the PCL file is added to this value. Adding a minus after the value, will cause a movement to the left. (e.g. **1,120-** for **1½"**movement to the left)

Color printing: When working in a file-set defined for color printing the PCL-file settings will have an additional definition for color PCL-files.
The Black/White PCL-file definition is available to facilitate printing of the same overlay both on black and white and color laser printers.

> **WARNING**
> *The system does not check the contents of the PCL file to be PCL5 or PCL5e code. It is recommended to use an HP4/HP5 or a generic PCL5e driver to create the PCL files on the PC*

G=HP/GL-2-FILE

A HP-GL/2 file can be file transferred to the system for storage as a member in the physical file **APF3812/GL2**. The PC file containing the HP-GL/2 code must be transferred to the system by a File Transfer function.

This feature has been superseded by the PCL imports option. Contact InterForm A/S for details, if import of HPGL files is needed.

```
       Design APF3812 overlay                                        APF300D

Overlay name: PROFIT      Overlay text: Final Result DM /YTD

Seqnbr. Type  Overlay definition




 Seqnbr. Type                                 Inch.pel
   2,0   G    HP-GL/2 file  From top edge      ______
                            From left          ______
                            Height             ______
                            Width              ______
                            Rotation           ___
                            Scale factor       ______
                            Line width         __
                            File name          _________
F3=Exit      F4=Prompt                                  F12=Cancel
```

If you are using HP4 compatible printers only, you should choose to use the F=PCL-file

sequence line solely, as this will treat a HP-GL/2 files and PCL-files equally. This means you can use the procedures for reading in PC-print into PCL-files explained on page 413 to retrieve the HP-GL/2 file from the PC environment instead of using the iSeries Access (PC-support) file-transfer function.

From top edge — **Inches, pels** vertical position of the HP-GL/2 file is made absolute to the upper edge of the paper. Vertical positioning of elements in the PCL file is added to this value. Adding a minus after the value, will cause an movement upwards. (e.g. **1,120-** for **1½"** negative movement)

From left edge — **Inches, pels** horizontal position of the PCL file is made absolute to the left edge of the paper. Horizontal positioning of elements in the PCL file is added to this value. Adding a minus after the value, will cause a movement to the left. (e.g. **1,120-** for **1½"** movement to the left)

S=SUBOVERLAY

If you are printing general company info in several overlays, i.e. the company letter head, it is convenient to place this info in a separate overlay. With this function you can place such information in an overlay that can be called as a sub-overlay from any other overlays. Ie. changing e.g. the phone number only have to do be done in this overlay.

```
          Design InterForm 400 overlay                                  APF300D

Overlay name: Invoice      Overlay text: Invoice overlay

Seqnbr. Type  Overlay definition




Seqnbr. Type
   1,0   S    Suboverlay

                            Overlay name COMPINF


F3=Exit                                                  F12=Cancel
```

The name of the overlay to be used as sub-overlay. If the name entered here is **MACROxxxxx** where xxxxx represents a numeric number (e.g. MACRO00001) InterForm400® will make a PCL macro call using this number. This will require the PCL macro to be loaded into the printer prior to using the main overlay. The PCL file can be loaded into the printer by the InterForm400® HPMACRO command (see page 536).

> **WARNING**
>
> ***Global settings** of the sub-overlay, inserted by the S=Suboverlay, will be ignored as well as **6 = Print-info**.*

C = Concat

This element works like a normal text element except that it is able to concat multiple texts from the spooled file with multiple fixed texts. This can e.g. be interesting if you want to concat multiple fields from the spooled file and combine them into a barcode. The element is defined like this:

```
Seqnbr. Type                              Inch.pel
   1,0   C    Concat field  From top edge   0,120
                            From left       1,000
                            Rotation        000
                            Font            4400      F4=List
                Condition: Line             ___ - ___
                           Position         ___ - ___
                           Is > = < N A U   _ ____________________________
                More conditions             N      (Y N)
```

When you press Enter you will see the list of the subsequence numbers defined for this concat element. If you enter a number you either create a new subsequence number or edit the existing:

```
         Update Concat Subfields                                    APF311D

Sequence number . . . :  0001

 1     Partnumber
 2     Customer Name
 3     Contact Person


Subseq.
 1,0              Suspend              _    *=Suspend
                  Description          Partnumber
                  Required field       *YES      *YES, *NO, *ALWBLK
                  Prefix               [)>^1E06^1DP          Length  __
                  Suffix                                     Length  __
                  Where found          *MAIN *MAIN, *SUB
                  Input line           13 - 13
                  Position             57 - 60
                  Trim                 *YES   *NO, *YES, *LEFT, *RIGHT, *LZERO
      Condition:  Position             ___ - ___
                  Is > = < N A U       _ ____________________________________
                  More conditions      N      (Y N)
F3=Exit                                 F11=Delete          F12=Cancel
                                                 F18=DSPSPLF   F19=DSPPFM
```

(If you are not editing a subsequence number you can press F5 to rearrange the subsequence list).

The screen shot above indicates how you can use the concat combined with a PDF417 barcode definition to insert the special, unprintable ASCII characters required for e.g. the GM 1724 transport label. (The '^' is here defined as the hex byte prefix in the PDF417 barcode.). Refer to the 2D barcode definition on page 383 for additional information.

The fields on the screen are these:

Suspend Suspend/deactivate the subsequence number.

Description For internal use/documentation. This is not included in the final output.

Required field

The field can be found by scanning the spooled file for a trigger text in the same line.
If you set this to ***YES** and a true condition is not found (or the input data from the spooled file is blank), then the complete concat element is ignored, and not inserted in the merged result.
If set to ***NO** the specific concat detail will not be inserted (in case of an invalid condition or blank input text), but the concat element itself will still be generated.
If set to ***ALWBLK** (short for Allow Blank), the concat detail line (and especially the prefix and suffix) will be inserted - even if the spooled file data is blank. This can be used for building up a longer text combined by (dummy)

detail lines to be used in e.g. a long link in a QR barcode.

Prefix A fixed text to precede the variable text from the spooled file. If you set a length, that is longer than the length of the fixed text, then the text will be padded with blanks prior to the spooled file data.

Suffix Like Prefix above - except this is a fixed text added after the variable spooled file data.

Where found The line numbers can either be the absolute spooled file number as seen by the main overlay (*MAIN) or the relative line number if the concat element is inserted in a conditioned overlay (*SUB). A conditioned overlay always counts the spooled file line number from the spooled file line, that triggered the conditioned overlay - so if e.g. triggered by a condition in line 43, then line 43 is known in the conditioned overlay as line 1.

Trim The trim option tell InterForm400 what to do with leading and trailing blanks of the positions, that are picked from the spooled files. The possible values are:

***NO**	All blanks selected are included in the result.
***YES**	All leading and trailing blanks are removed in the result.
***LEFT**	All leading blanks are removed.
***RIGHT**	All trailing blanks are removed.
***LZERO**	All leading and trailing blanks are substituted for leading zeroes.

Line The line or lines from where the spooled file data is be searched or just copied like above.

Position The spooled file positions to include in the concat subsequence number.

Condition Refer to the If..then on page 93 for information of how conditions works.

* = COMMENT

This function will insert a comment in your overlay definition. Introducing a comment line in the overlay definition is for easy overview purposes only and will not affect the resulting print.

```
Seqnbr. Type  Overlay definition
0001    *     Insert InterForm Logo in Upper Right Corner
0002    I     Image  DEMOIMAGE  Top 01.100  Left 04.180
0003    *     Recepient Frame
0004    1     Frame  top 01.100  left 00.200  right 04.120  bottom 02.160
0005    *     Remap Recepient Adress into Recepient frame
0006    9     Remap window 06-011 pos 08-040  top 1.160  left 1.000 L

Seqnbr. Type
   1.0   *     Comment

               Insert InterForm Logo in Upper Right Corner
```

How the sequence lines in overlay design are executed

The execution order is of the sequence lines is depending on the type of the line. They are executed in this order:

1st.	Frames, Lines, Text (option 5), Print-info, Ink, Images, PCL-files, HP/GL-files and Suboverlays.
2nd.	9=Remap Window
3rd.	?=If..Then
Last	8=Tabulator

Normally it is not necessary to remember this order, but when you mix them you could get a problem: If you specify to blank out remapped text by use of option **9=Remap Window**, then you cannot use the text for a condition in **If..Then**. This can be solved by not blanking out the text in the **Remap Window** and instead insert an **8=Tabulator** to tabulate the text out of the page after the If..Then has been executed.

If you have several **?=If..Then lines**, remapping the same line(s), then only the last condition met will have the lines remapped. The other conditional overlays are executed, but no lines are transferred.

💣 WARNING 💣

*A deviation from the rules above are seen if you transfer 2 or more lines to a sub-overlay by use of **If..Then**. The second and following lines are transferred first - even before any **Remap Windows** in the main overlay are executed.*

☝ **NOTE** ☝

Ink lines in the main overlay will have no effect in conditioned sub-overlays (called by **If..Then**).

☝ **NOTE** ☝

If you use absolute positioning for the sub-overlay called by **If..Then** you will notice this: **Tabulators** in the sub-overlay are unaffected by the positioning of the sub-overlay. **Remap Windows** in the sub-overlay add the vertical position specified in the **If..Then** command whereas the horizontal position is ignored.

☺ **TIP** ☺

Regarding design of Zebra overlays: *If you want to insert text, frames or images in reverse i.e. white on black background you can do it by first adding a frame with black filling (=pattern) and then place the text or image on top of the black frame (without specifying white in an Ink command). In this manner you reverse the part of the text or image, that overlaps the black frame.*

Margins in the output

Depending on the selected output, there are margins in the design, that limit how close to the edge you can place your elements. For label file sets (ZPLII and IPL output) the margin is zero i.e. you can insert elements right up to the edge of the labels.

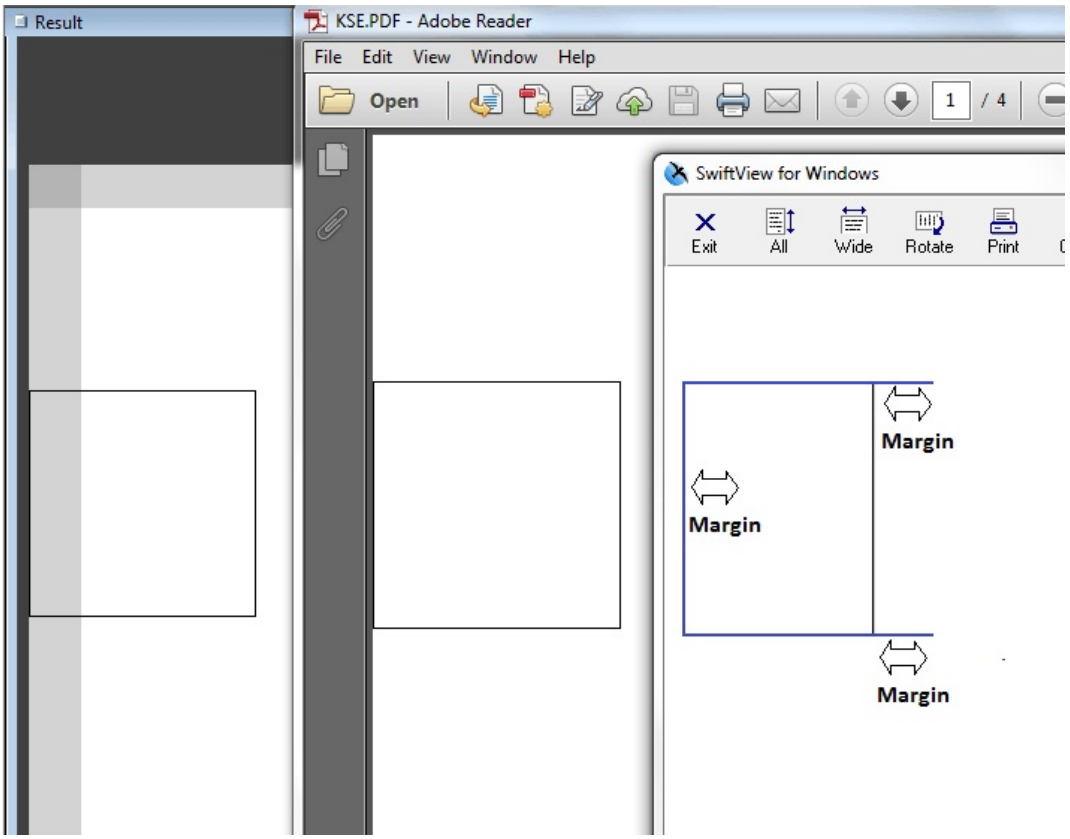
Margins for PCL and PDF output

The margin is however not zero for laser file sets (PCL and PDF output). For those kinds of output there is (normally) a margin of 57 pels (same as 6 millimeters or 0.238 inches). This margin is marked in the graphical designer as a grey area.
If you overstep this margin, then different things will happen depending on the element type

and the type of output, but in short: The elements outside the left margin will mostly be pushed into the printable area, and elements outside other margins will be cut off.

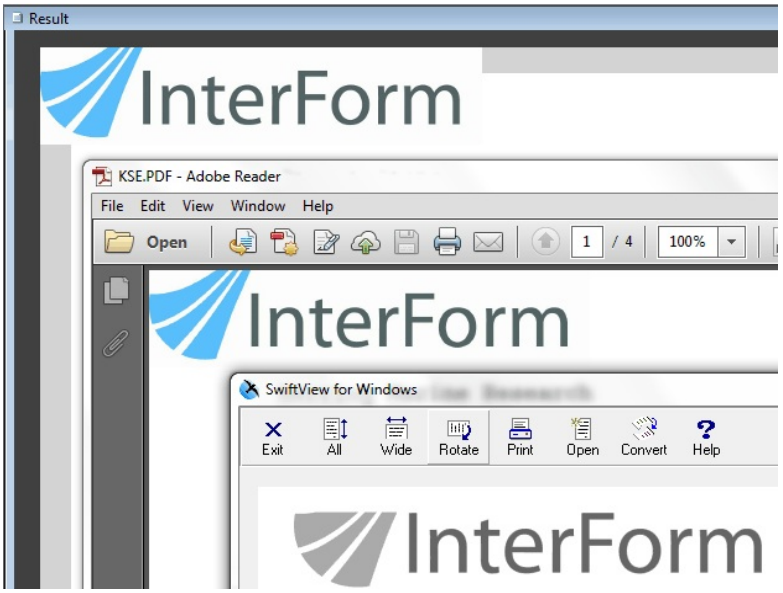
There are some specifics for some element types:
Texts, tabulators and remaps cannot be inserted closer than 6 mm. from the left. Any lower value is handled like as if you had used a position of 6 mm. If a right adjusted text cross the left margin, then it is also moved right into the printable area.

Frames and lines
Frames are made up of 4 lines, and the lines that are placed outside the left margin are pushed right into the printable area in PCL. In PDF the left margin is ignored. This means, that you e.g. place a frame zero from the left, then the frame will be distorted only in the PCL result like below:



The blue lines indicate the part of the frame, that is moved to the right making the distorted frame in PCL. You may notice, that the result view and PDF output looks fine.

Images placed too far to the left are moved into the printable area for PCL output. If other margins are overstepped, then the image is cut off. This illustrates the results:


Result
InterForm
KSE.PDF - Adobe Reader
File Edit View Window Help
Open
1 / 4
100%
InterForm
SwiftView for Windows
Exit All Wide Rotate Print Open Convert Help
InterForm

Getting Familiar With Overlays

The following sections are structured so you will be brought through a process of improving the visibility of the sample spool entry **IF400DEMO** introduced in the **Getting Started** section on page 47.

The chapter requires you have:

- Run the **Getting Started** section.
- A **PCL5e capable printer** attached to your default InterForm400® output queue (displayed in the upper right field on the **main menu**), or have configured the PCL Viewer (Swiftview).
- Not made changes to the sample overlay **IF400DEMO** delivered with the system.
- Installed the graphical designer on your PC
- Setup the measurement in the designer to inches and pels (under Setup and Measure)

It is recommend that you have:

- Quiet surroundings
- A cup of coffee

You can start by printing the overlay **IF400DEMO** if you like to know how the final result will appear.

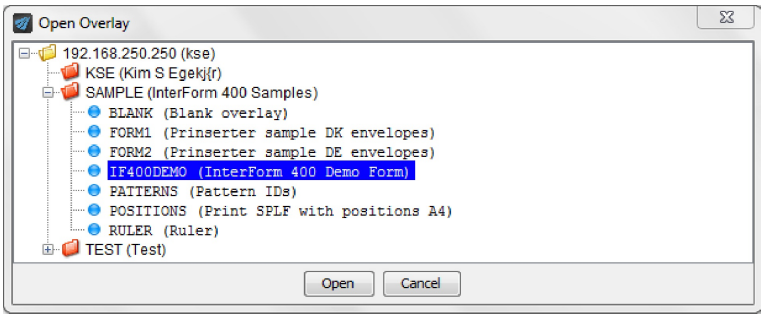
Please abstract from the fact that it is not a piece of design artwork. We have concentrated mainly on using as many features of the system as possible.

Step 1. Making a Work Copy of the Overlay IF400DEMO

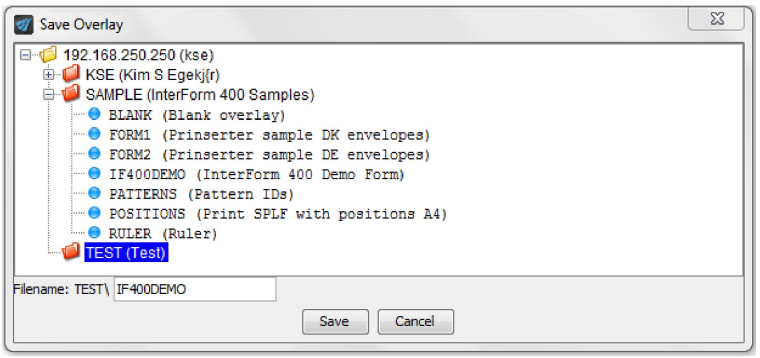
In order to keep the original sample we should first make a copy of the overlays to work with. To prevent the changes we make to be overwritten by future updates of the SAMPLE file-set, we will do the changes in our **TEST** file-set which was created on page 46 in the **Getting Started** section.

To do that you start up the graphical designer and select the open overlay icon on the upper left:

Select the IF400DEMO overlay and click open:



Now select 'File' and 'Save as' to save a copy of this overlay into the TEST file set. First click on 'TEST' and then the save icon.

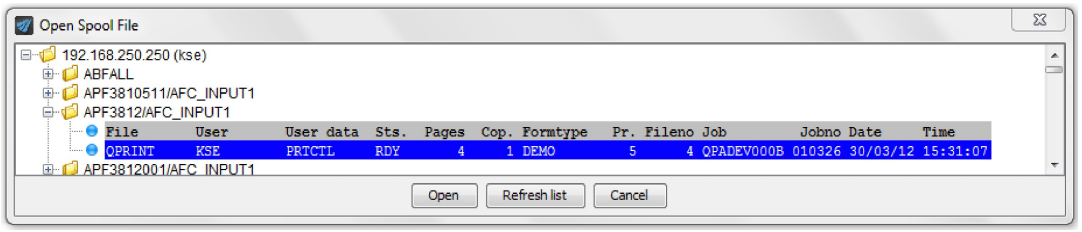


Step 2. Make a Test Print of the Overlay+Spool Data

Before we start changing things we will make a printout of the overlay so we know what we have to begin with. To do that we also need to find a copy of the corresponding spooled file.

Click this icon in the top right to view all output queues with one or more spooled files:

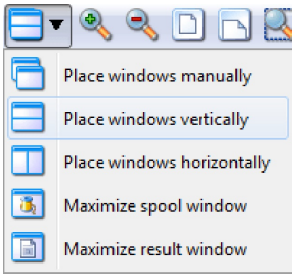
Select the output queue APF3812/AFC_INPUT1:



and open the QPRINT spooled file with form type DEMO. If you cannot find the output queue and/or the spooled file you can create in this manner from the green screen with selection: **12. Service functions** followed by **1. Create Demo Spool Entry**.

Compare the result window with page **50**.

You can decide how to divide the rightmost of the screen with this drop down. Select the 'Place windows vertically' to view both the original spooled file and the merged result:

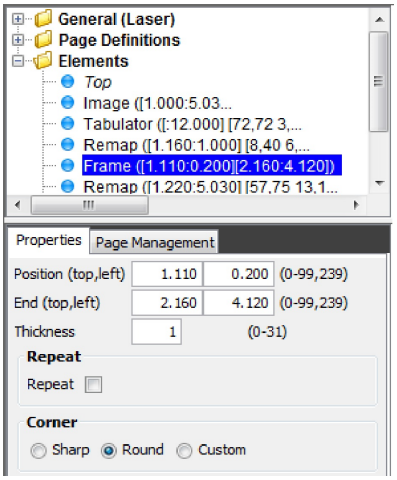


You can also preview the result by pressing the rightmost icons in the top:

In the next sections we will start to re-design the overlay.

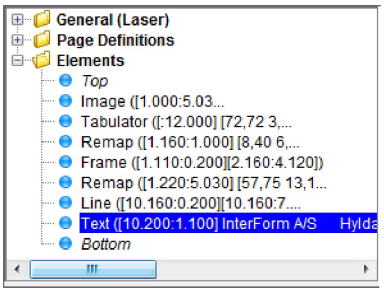
Step 3. Adding Round Corners to the Address Field

The first thing we want to do with our overlay is to make round corners on the address field frame. To do that we simply click the Frame element and change the Corner setting from 'Sharp' to 'Round' like below:



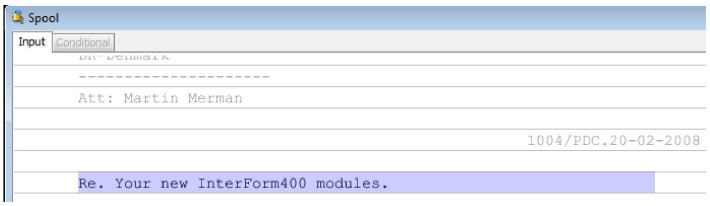
Step 4. Edit Subject Text

Now we will change the appearance of the subject header text (Re. Your new...). We therefore click on the element after which we want to insert the new element:

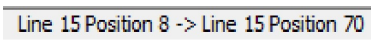


Now we click the tabulator element on the left () to add our first element.

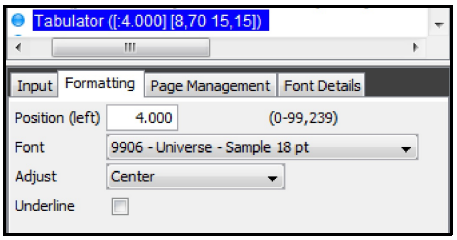
Then drag with the left mouse button pressed around the text to be changed like below:



In the lower right corner of the designer we can see which lines and positions we have marked:



Finally we click in the result view to place the distance from the left where this should be placed. In this case we want to center the text around 4 inches from the left. After this the tabulator is added. Now we can change the properties for the tabulator. Select the 'Formatting' tab:

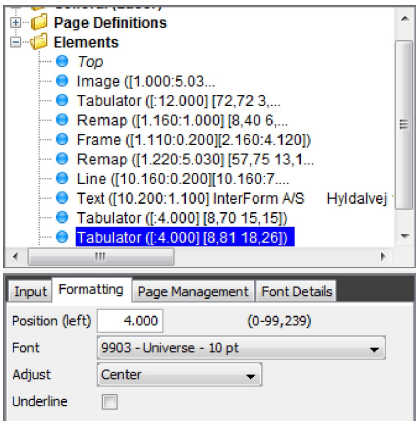


We can fine adjust the distance from the left to exactly 4 inches if needed. Also the font is set to 9906 and we chose to center the text around the 4 inch reference.

Step 5. Formatting the body text

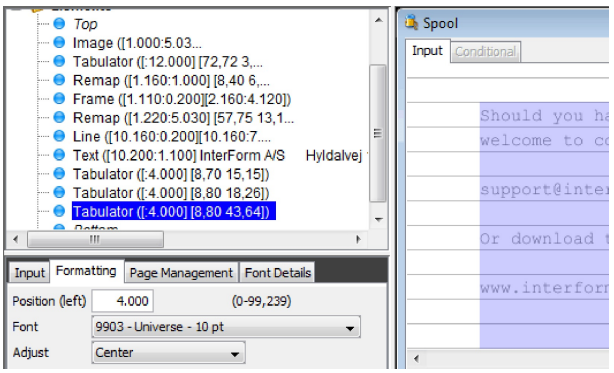
We now want to format the body text to print centered with a proportional spaced font. We use the same procedure as in the previous section, and we therefore click on the previous tabulator element we added and click the tabulator element on the left:

Then select the text in the spooled file (Line 18-26, position 8-80) with the left mouse button and click in the result view to place the tabulator. Finally we adjust the position and font:



Again we define a safety margin by stating **80** for maximum position. We select a 10 point Univers font for the text.

Another Tabulator is inserted for the lines 43-64 also covering positions 8-80:
(Which means from 'Should you have....' and onwards).

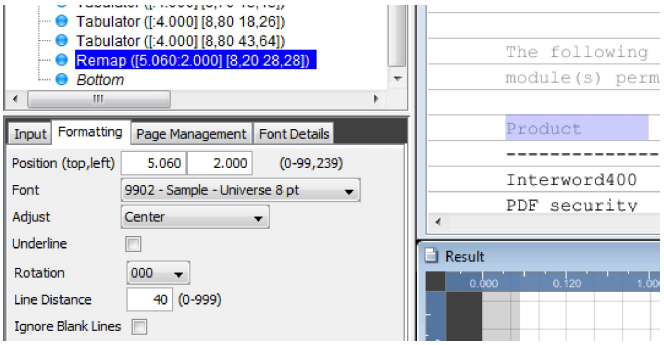


Step 6. Making Equal Distance Between Column Headers

We now want to Format the column headers in the middle of the page (Model, P-Group...) in intervals of 1 inch. As we want to adjust the vertical position as well we will use the **Remap Window** element, which look like this: 

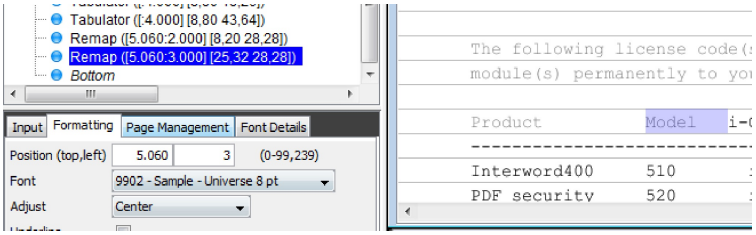
We add the remaps after the last tabulator. Like the tabulator you add a remap window by clicking the element type on the left, drag over the spooled file text in the Input view and finally clicking the destination in the Result view and finally changing the properties of the element.

First the 'Product' header text is remapped:

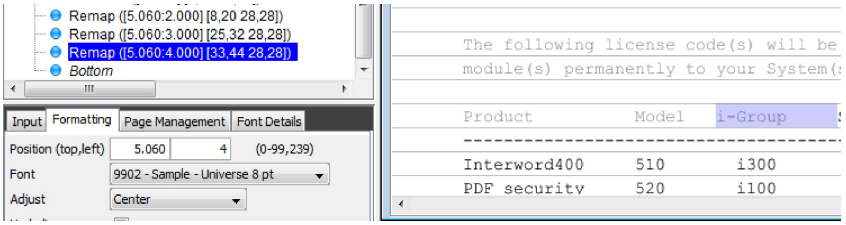


We remap a few extra characters to handle if the 'Product' text should change a bit in the future.

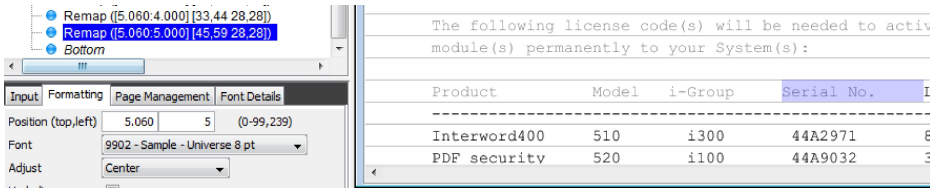
We also remap the 'Model' text in the spooled file:



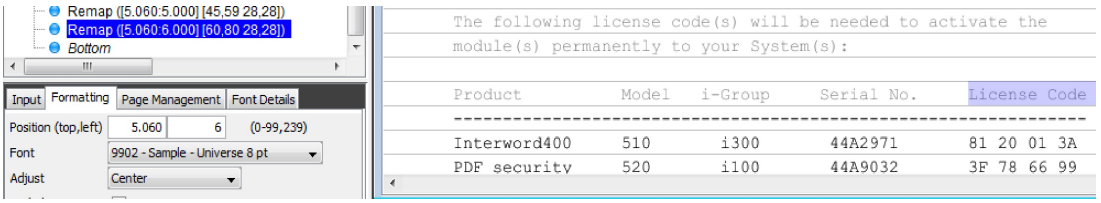
We proceed with column header "i-Group":



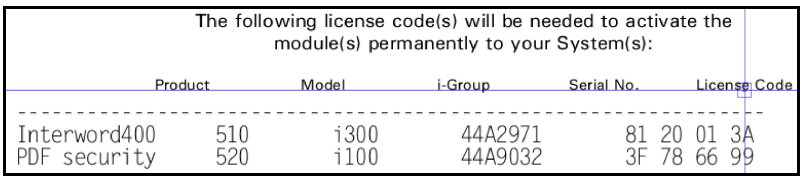
- and the "Serial No." header:



- and finally the “License Code” header:



Now the relevant area in the Result view should look like this:

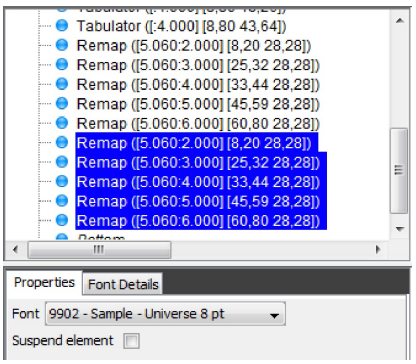


The blue mark is the reference for the last remap window.

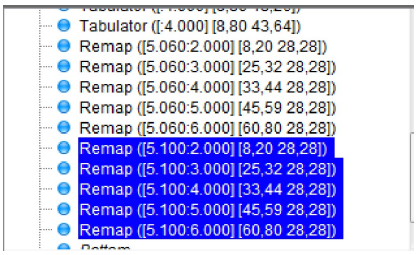
Step 7. Making Equal Distance between Item Line Columns

We now want to perform the same actions for the item-line columns below the dotted line. As the horizontal positions of the item line columns are identical to the column headers, we can copy the elements for the headers and just correct the vertical position (from upper edge) and the input line numbers.

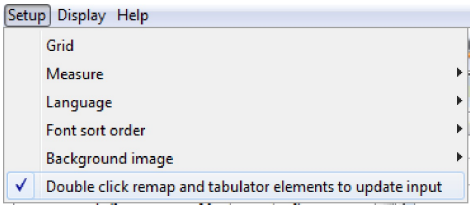
We copy the elements by clicking the first remap, holding down the <Shift> key and then clicking on the last remap inserted above and then use the clipboard options 'Copy', click the Bottom of the element list and then 'Paste':



While all the elements are all marked (grouped) we can move them all simply by dragging one of the grouped elements to the new position in the Result View. In this case we drag the elements down 40 pels (1/6 of an inch):



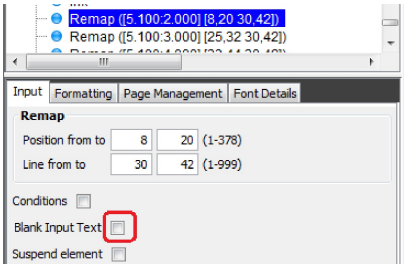
All the marked remaps are referring to line 28, but they should refer to all the detail lines (30-42) instead. So we need to edit each of the remaps. This might be a problem if this default setting is activated: (Double click remap and tabulator elements to update input)

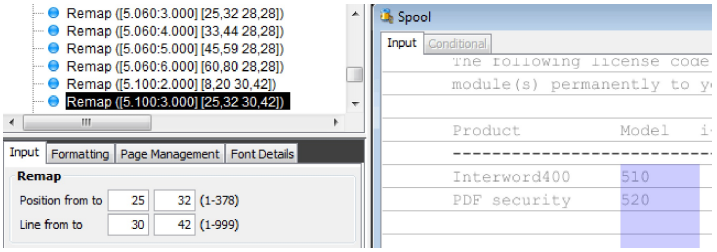


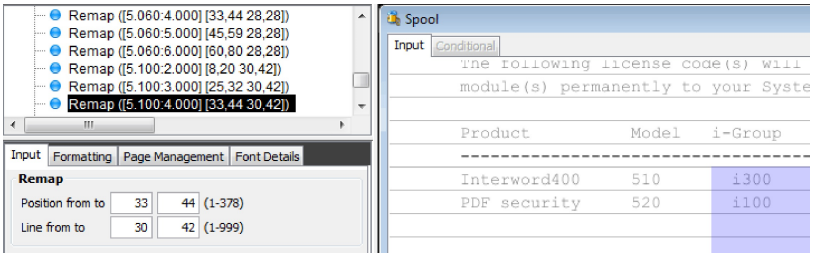
This option is default activated to prevent the user from inadvertently change any remap and or tabulator. So in order to change the remap window elements you can either disable this option or start the coming changes by double clicking the remap window element.

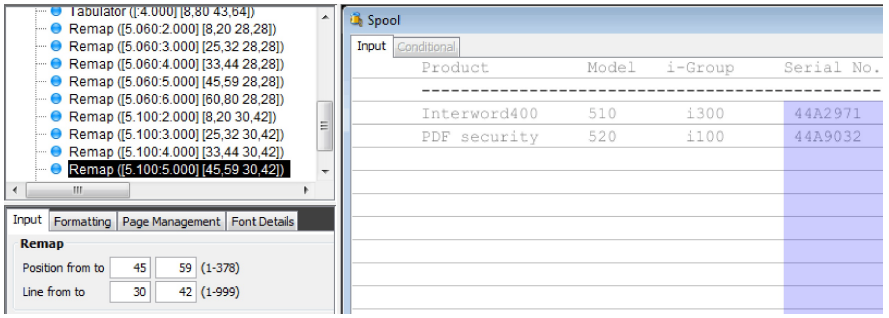
Each of the marked remap window elements is now changed to select lines 30-42 instead of line 28. (Notice a double clicked remap turns black when editing is allowed). You can change them by either dragging in the Input view or be typing the new line interval in the Input tab of each element.

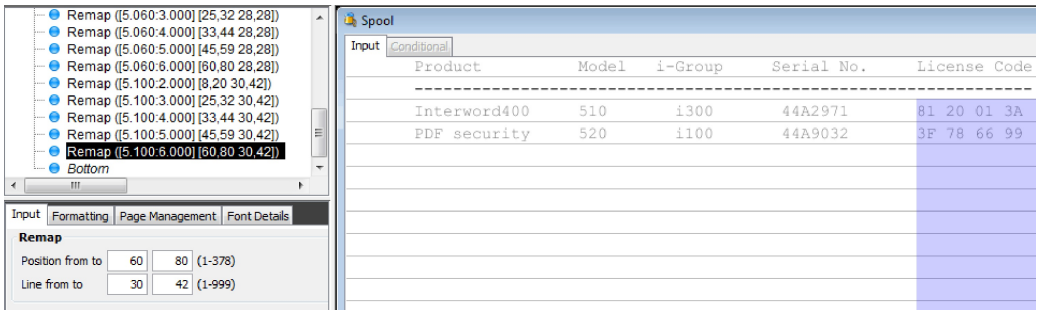
Notice, that we need to **disable** the '**Blank input text**' option on the first column as this information will need to remain in the spooled file, so a later call to a conditioned overlay can 'see' the original spooled file text:


Remap ([5.100:2.000] [8,20 30,42])
Remap ([5.100:3.000] [25,32 30,42])
Input
Formatting
Page Management
Font Details
Remap
Position from to 8 20 (1-378)
Line from to 30 42 (1-999)
Conditions
Blank Input Text
Suspend element


Remap ([5.060:3.000] [25,32 28,28])
Remap ([5.060:4.000] [33,44 28,28])
Remap ([5.060:5.000] [45,59 28,28])
Remap ([5.060:6.000] [60,80 28,28])
Remap ([5.100:2.000] [8,20 30,42])
Remap ([5.100:3.000] [25,32 30,42])
Input
Formatting
Page Management
Font Details
Remap
Position from to 25 32 (1-378)
Line from to 30 42 (1-999)
Spool
Input
Conditional
module(s) permanently to y
Product Model i
Interword400 510
PDF security 520


Remap ([5.060:4.000] [33,44 28,28])
Remap ([5.060:5.000] [45,59 28,28])
Remap ([5.060:6.000] [60,80 28,28])
Remap ([5.100:2.000] [8,20 30,42])
Remap ([5.100:3.000] [25,32 30,42])
Remap ([5.100:4.000] [33,44 30,42])
Input
Formatting
Page Management
Font Details
Remap
Position from to 33 44 (1-378)
Line from to 30 42 (1-999)
Spool
Input
Conditional
module(s) permanently to your Syste
Product Model i-Group
Interword400 510 i300
PDF security 520 i100


Remap ([5.060:2.000] [8,20 28,28])
Remap ([5.060:3.000] [25,32 28,28])
Remap ([5.060:4.000] [33,44 28,28])
Remap ([5.060:5.000] [45,59 28,28])
Remap ([5.060:6.000] [60,80 28,28])
Remap ([5.100:2.000] [8,20 30,42])
Remap ([5.100:3.000] [25,32 30,42])
Remap ([5.100:4.000] [33,44 30,42])
Remap ([5.100:5.000] [45,59 30,42])
Input
Formatting
Page Management
Font Details
Remap
Position from to 45 59 (1-378)
Line from to 30 42 (1-999)
Spool
Input
Conditional
Product Model i-Group Serial No.
Interword400 510 i300 44A2971
PDF security 520 i100 44A9032


Remap ([5.060:3.000] [25,32 28,28])
Remap ([5.060:4.000] [33,44 28,28])
Remap ([5.060:5.000] [45,59 28,28])
Remap ([5.060:6.000] [60,80 28,28])
Remap ([5.100:2.000] [8,20 30,42])
Remap ([5.100:3.000] [25,32 30,42])
Remap ([5.100:4.000] [33,44 30,42])
Remap ([5.100:5.000] [45,59 30,42])
Remap ([5.100:6.000] [60,80 30,42])
Bottom
Input
Formatting
Page Management
Font Details
Remap
Position from to 60 80 (1-378)
Line from to 30 42 (1-999)
Spool
Input
Conditional
Product Model i-Group Serial No. License Code
Interword400 510 i300 44A2971 81 20 01 3A
PDF security 520 i100 44A9032 3F 78 66 99

Step 8. Defining the Column Headers White on Black

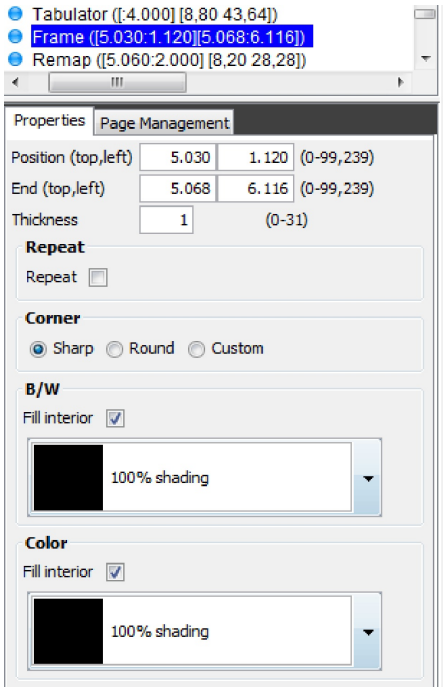
Now we would like to make the column headers appear with white text on a black background.

First we will need to define a black box, which is created as a frame with black filling. It is very important that the frame is defined in a sequence before the text in order to place it as a background for the text.

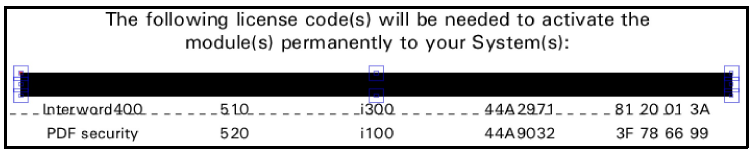
We therefore insert the frame before the remapping of the column header “Product”. We click the tabulator just above in the element list, click the frame element: 

Then drag around the headers in the result view to get a frame setting like below. We disable the grid to gain full control of where to position the frame by clicking this icon: 

We also mark the shading for both black/white and color output to be 100% black:

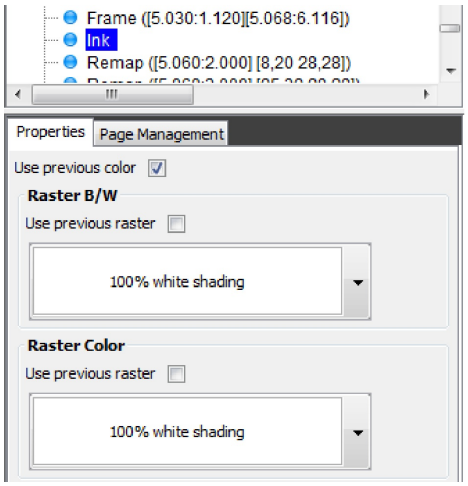


Now the frame covers the header line:

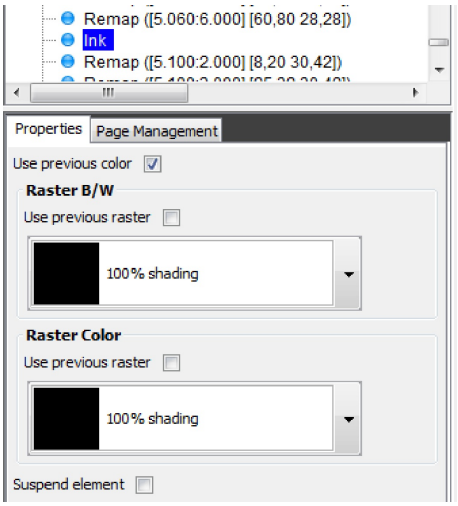


We now insert Ink elements to make the header lines print in white instead of the normal black. First we mark the frame element and click the Ink icon: 

Then we change the Ink setting to use white for both black/white and color:



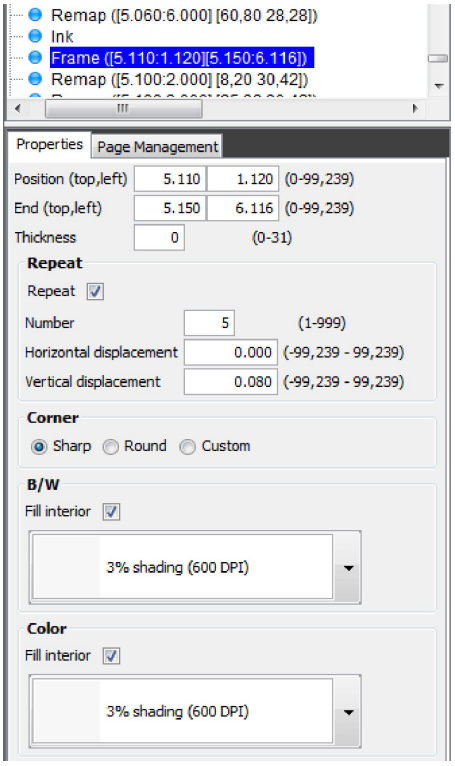
With this change we can see the header lines again, but now the subsequent lines are also printed in white. So we add another Ink line after the remaps of the header lines to print the rest in black: (Both in black/white and color output)



Step 9. Defining the Item Line Bars

We would now like to exploit the Repetition and Pattern options in the overlay element Frame to make shaded horizontal “bars” to provide a better appearance of the item lines.

We place this definition before the first remapping of an item column i.e. we click on the Ink element above in the element list, click the frame element and drag around the second detail line and setup the properties like below:

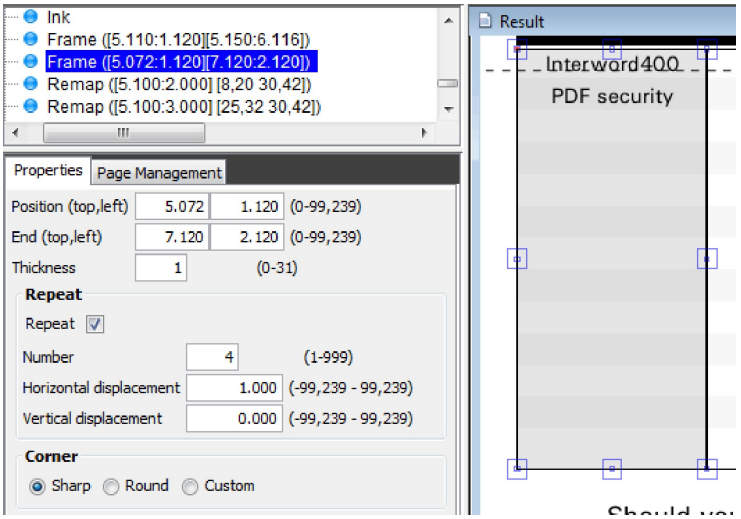


Notice that the height of the fame is 40 pels (5,150 - 5,110), the thickness is set to 0, and the 5 times repetition with a displacement, which is double of the line height and the shading.

Step 10. Defining the 5 Item Coloumn Frames

We now want to define some frames to divide the item lines columns in the spool entry:

We want to place the definition just after the previous definition of the raster frames. So we click that frame element and add a new one: (Dragging around the first coloumn)



Notice, that the thickness suggested will be that one last used (0), so you need to set it to '1'. Also notice the Repeat setting to add frames around all the columns.

Step 11. Defining the logo as a water mark

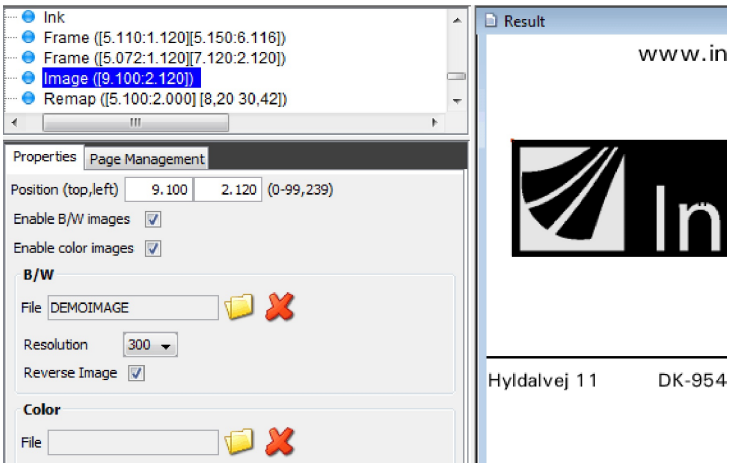
Instead of a signature we want to place the logo as a watermark in the bottom of the page.

For this we use the logo already used in the top of the overlay, but manipulate it to work as a watermark. We intend to do the following compared to the original logo (see page 50):

- Reverse it.
- Scale it to double size
- Grayscale it

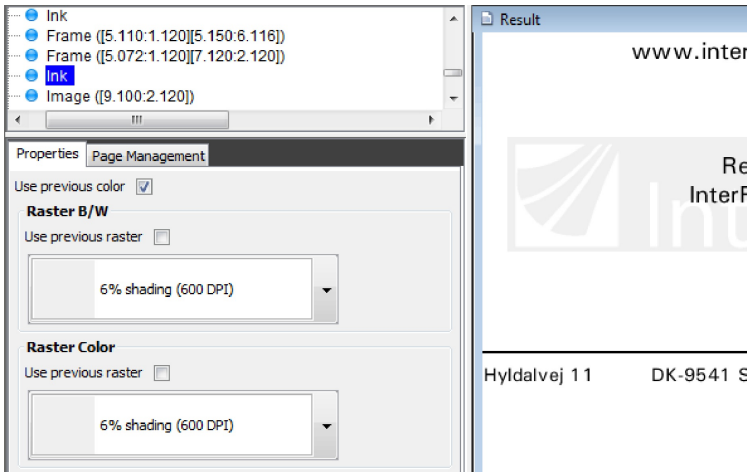
We define the sequence line for the logo just after the other logo by clicking the first logo element on the element list, clicking the image element on the left: 

- and then clicking in the Result Window (on the left above 'Regards') to insert it. After that we select the B/W image: DEMOIMAGE and change the settings to reverse and double size (300 DPI):

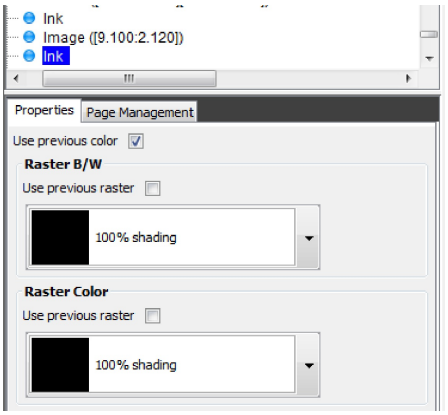


The logo now needs to be dimmed in order to appear as a watermark. For this we change the ink of the image. This is the same procedure we used for printing the column headers white on black.

We insert an Ink element just before the image:



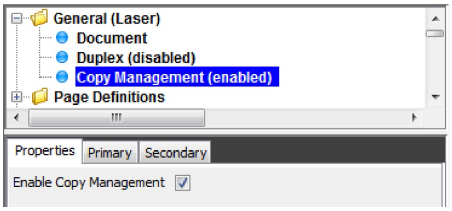
As usual we will need to set the Ink back to black just after the logo:



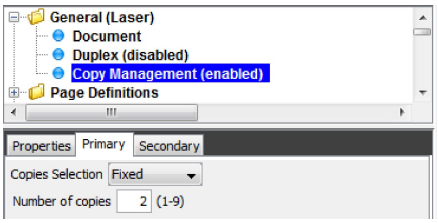
Step 12. Defining the Copy Management

We will now add the text COPY on “page two" copies only. To do this we will first have to enable and configure the **copy management**.

This is set in the General folder of the overlay:



We set the primary number of copies to 2under the ‘Primary tab’:

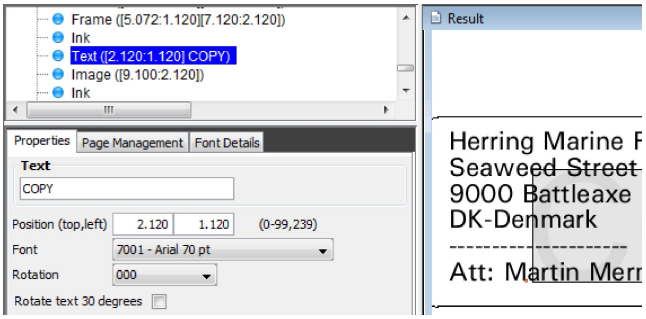


Step 13. Defining the COPY Symbol as Watermark

The intention of the copy sign is to place this information as a watermark in the address field. We can therefore place the text element between the two Ink changes we made for the logo watermark, and thereby exploit the same raster pattern definition.

We click the first Ink element, then the text element on the right: 

Then we click in the Result view in the bottom left of the address frame. This inserts the text element as below. We type the text ‘COPY’:

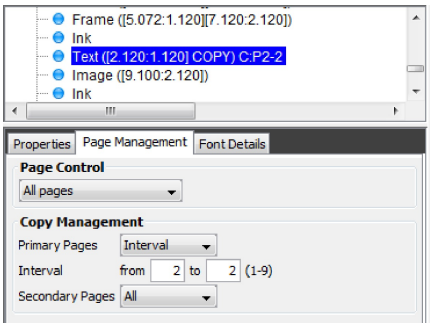


For the font out line we can select one from the existing list. The largest font currently assigned to the system is font ID 2103 with point size 24 (see font list on page 490).

We can now choose to use this font, or we can assign a new font ID a larger font.

If you feel comfortable enough with InterForm400® by now, you should try to assign the large font, Go to **80. Administration Menu** (either in this session by exiting with F3, or by using another session). Go to section **4. Work with fonts** and select **1.Description of additional fonts**. Now perform the steps described in the **Example of defining a resident Printer Font** on page 362). Then select ‘File’ and ‘Reload fonts and colors’ in the designer to update the font list.

The text element is to be shown only on copy 2. This is set under the ‘Page management’ tab:



You can see that the element is included on the primary copy 2 only by the indication 'C:P2-2' in the element list.

Step 14. Defining the Relatively Positioned Sub-form

We want to add a condition to the output so that a special text ´*Note: Special offer!' is added to the right of the detail lines containing the PDF Security module.

This will use one of the more advanced features of the system, generally known as "nested overlays". To add the call to the other conditioned overlay we first click 'Bottom' in the element list to add it as the very last element and the click the 'conditional element' on the left: 

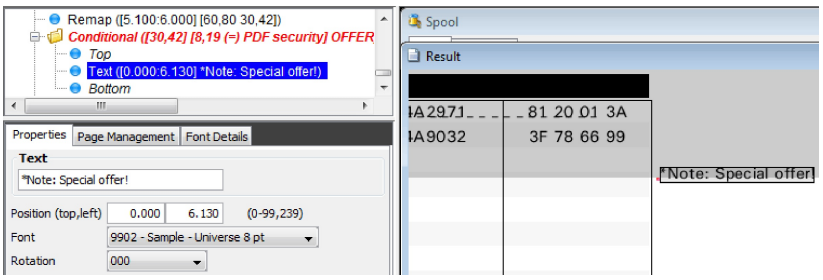
Now the call to a conditioned overlay is inserted and we can now mark the spooled file line to be considered in the Spool view. We drag over the **lines** 30-42 with the **left** mouse button pressed to mark the lines and drag over the **positions** 8-19 while holding down the **right** mouse mouse button to mark the positions for the condition. As the compare text we write 'PDF security' as written in some lines (case sensitive).

We want to create another overlay to call, so now we create it by pressing this icon on the conditioned element: 

Then we are prompted for the name of the new overlay and we type OFFER and press Save.

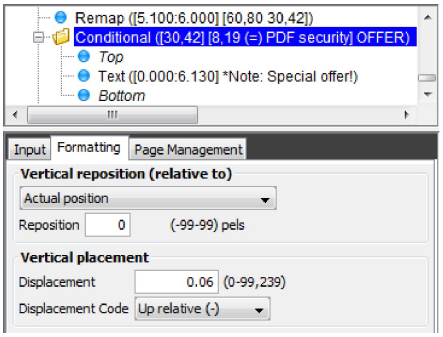
We can now edit the OFFER overlay by clicking this icon on the conditioned element: 

Now we insert a new Text element to the right of the frame as high as possible (as close to the PDF security line as possible - we will move it up later):



Now we go back to the main overlay (IF400DEMO) by pressing the 'Close overlay' icon: 

Back in the main overlay we can now edit the conditioned element to reposition it correctly in the vertical direction. We change the vertical placement to minus 0,060:



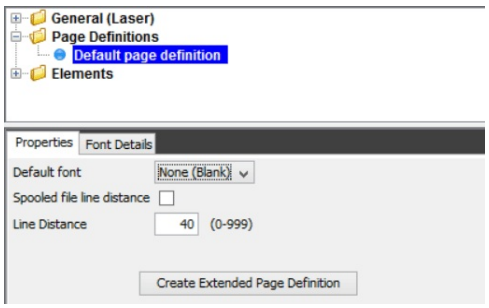
Step 17. Cleaning the Overlay for Remaining Text

If you printed the overlay at this stage, you will discover that some of the original text used for re-mapping are still visible.

On purpose we have not used “B=Blank after” in all the Remap Window commands, as we have not been sure that we would have needed the text for other purposes.

Instead we have waited to this moment, where we will clean all remaining text by a single command.

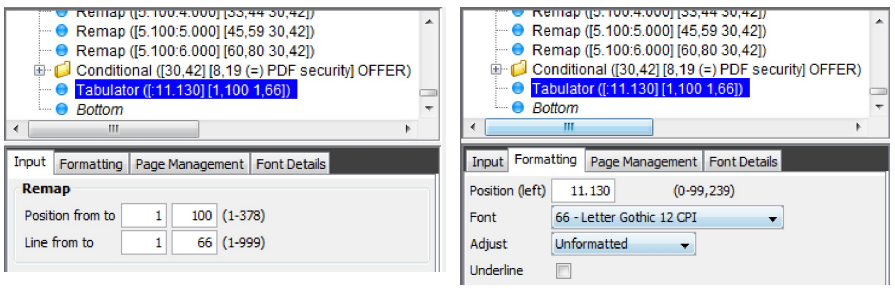
The best and most efficient way is to select **NONE** as the global font on the header of the overlay:



- alternatively we can do like below:

We insert the last element (a tabulator) at the very bottom of the element list: 

We then mark all the whole spooled file in the Input View and then click as far right as possible in the Result View:



This will remove the horizontal lines and the original spooled file data in column 1.

Step 18. The Result

Now we can preview the result with the icons on the upper right and print the overlay merged with the spool entry using **3. Merge Spool entry with overlay** in the green screen.

If your printout looks like the illustration on the next page, and you understood what went on, you can consider yourself quite familiar with InterForm400®.

We have brought you through the heaviest kind of design you will experience with InterForm400®.

With this section our intention was to show you the potential of InterForm400® as a Forms Management System and we haven't even talked about the Auto Forms Control features yet. A similar example on Auto Forms Control features are made on page 182)

☹ TROUBLE SHOOTING ☹

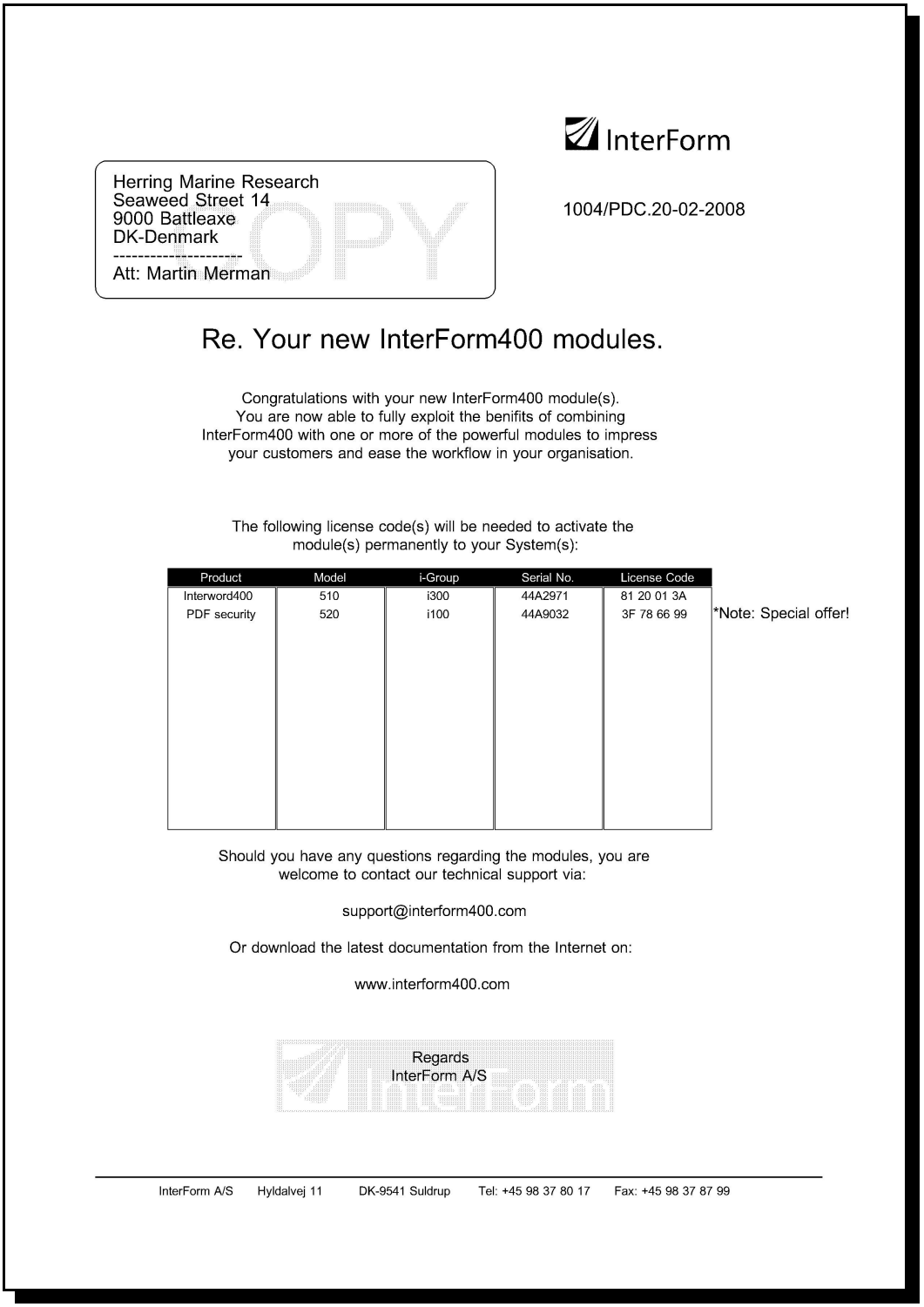
Not the result as the following example?

Q Did you use a PCL5 compatible printer?

Q Are you sure all your entries was correct?.

A Try locating the overlay elements which went wrong and check the corresponding overlay definition.

Final print of MYDEMO merged with the sample spool entry.(The illustration is a screenshot of the InterForm400® PCL viewer function:)



InterForm

Herring Marine Research
Seaweed Street 14
9000 Battleaxe
DK-Denmark

Att: Martin Merman

COPY

1004/PDC.20-02-2008

Re. Your new InterForm400 modules.

Congratulations with your new InterForm400 module(s).
You are now able to fully exploit the benifits of combining
InterForm400 with one or more of the powerful modules to impress
your customers and ease the workflow in your organisation.

The following license code(s) will be needed to activate the
module(s) permanently to your System(s):

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971	81 20 01 3A
PDF security	520	i100	44A9032	3F 78 66 99

*Note: Special offer!

Should you have any questions regarding the modules, you are
welcome to contact our technical support via:

support@interform400.com

Or download the latest documentation from the Internet on:

www.interform400.com

Regards
InterForm A/S

InterForm A/S Hyldalvej 11 DK-9541 Suldrup Tel: +45 98 37 80 17 Fax: +45 98 37 87 99

Example of Advanced use of Sub-overlays (Random text lines)

A very strong feature of InterForm400®, is the ability to handle spool entries with randomly positioned text lines so each line gets an individual formatting. The general description on using sub-overlays are described on page 93, **?=If..then**.

The following is an example of a print job consisting of a random number of Item groups, each containing a random number of Item lines. The Item groups will furthermore appear in random line positions, and there will be a footer appearing in a random line position. You can use the APF3812/APFEDTPRT command to change a spooled file to contain the same.

Page 1:

```
*...+....1....+....2....+....3....+....4....+....5....+....6....+
1
2         Testing remap of item lines with random line positions
3
4
5         ITEM Fish:
6          Shark
7          Flounder
8          Herring
9          Salmon
10
11
12        ITEM Pets:
13         Cat
14         Dog
15         Chinchilla
16         Parrot
17         Hamster
18        ITEM Riding animals:
19         Horse
20         Camel
21         Elephant
22
23        This should be a fixed footer
```

Page 2:

```
*....+....1....+....2....+....3....+....4....+....5....+....6....+
1
2          Testing remap of item lines with random line positions
3
4
5
6          ITEM Cars:
7           Rover
8           Porsche
9           Volvo
10          Mercedes
11          Opel
12          Audi
13
14         ITEM Aeroplanes:
15          Ellehammer
16          Boing
17          MIG
18
19         This should be a fixed footer
```

(Line numbers are not part of the spool entry)

We want to format this print job as follows:

1. The text ITEM should be placed as a header of each item group with a 16 point font.
2. The Item group names (Fish, Pets etc), should be moved down and placed as sub-headers below the header (ITEM), and should be printed with a 12 point font.
3. The items should be printed just below the item group name, with a 10 point font.
4. The footer should be placed in a fixed position with Courier 10.

Creating the Main overlay:

This overlay will be used to call the different sub-overlays, which will perform the actual formatting of the spooled file:

We start the graphical designer and press this icon to create a new overlay: 

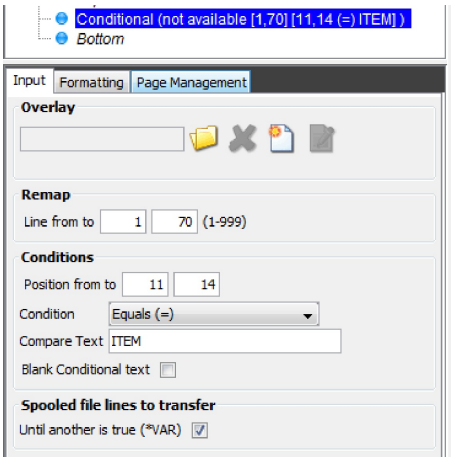
Now we select 'File' and 'Save as' and save it in our own file set as '**MAIN**'.
We select the spooled file as shown above with this icon: 

(You can create such a spooled file by editing another spooled file with the command APF3812/APFEDTPRT).

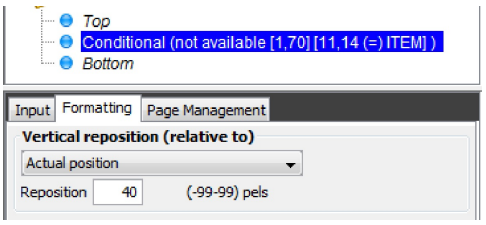
Calling the first conditioned overlay

We can now start the design. We press this icon to add a call to a conditioned overlay: 

This overlay is to be called for each ITEM group, so we scan the lines 1-70 and positions 11-14 for the text 'ITEM'. We mark the lines in the Input View while holding down the left mouse key and mark the positions while holding down the right mouse key. We want to transfer all the spooled file lines (i.e. the complete group) until the next condition (whenever that is), so we activate 'Until another is true':

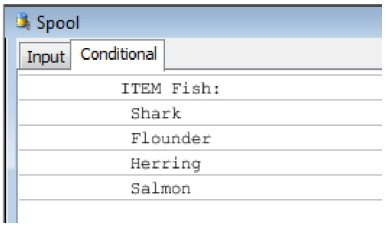


We want to add extra space for the large Group header, so the rest of the spooled file should be pushed 1/6 of an inch down. That is set under the 'Formatting' tab:

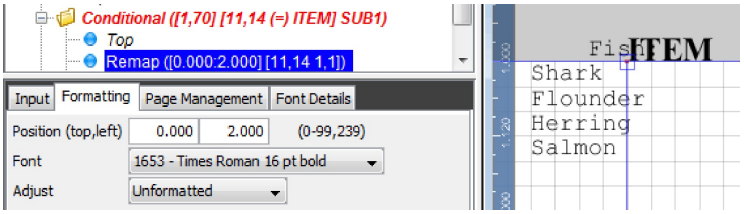


Next we click the new icon (in the Input tab) on this element to create the SUB1 overlay and then the pencil icon to edit the SUB1 overlay:

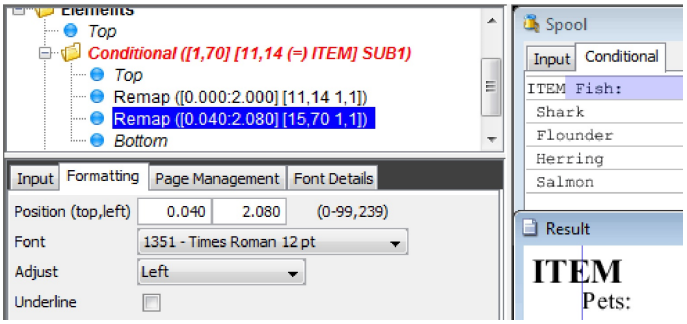
In the Spool View we click the 'Conditional' tab to view the lines 'seen' by the conditioned overlay:



We insert a frame element, select the 'ITEM' text in the Spool/Conditional tab and click high up on the **Result view** 2 inches from the left:

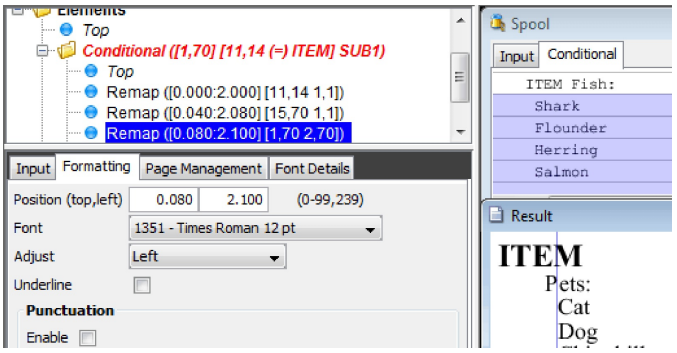


Next we remap the Item group (e.g. Fish:) to be printed below the ITEM text:



(We extended the suboverlay with 40 pels earlier and now we have used them for this extra line.)

The final thing missing in this conditioned overlay is the remapping of the (many?) Item lines. This is an unknown number, so we need to remap as many lines as it possibly can be. The width of the item is also unknown. We handle up to position 70 and line 70 here:

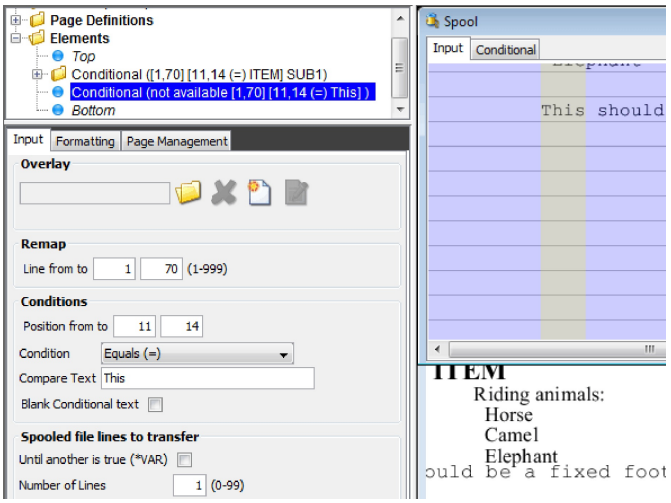


Now we are done with this conditioned overlay and click close to return to the main overlay:

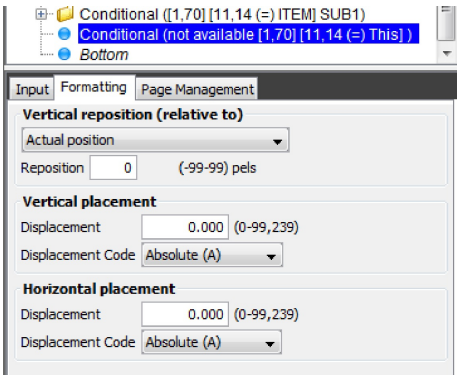
Calling the conditioned, fixed overlay

We now insert another conditional element in the main overlay to handle the fixed footer text. The footer text is found in a variable line, but should be printed in a fixed position in the final output.

We want to scan line 1-70 for the text 'This' in position 11-14. We do that as before by adding the conditioned element and drag around in the Input View with the mouse: Left mouse key pressed to select the lines and right mouse key to select the positions for the condition. We also chose to transfer 1 line of spooled file data as you can see in the bottom:



Usually we want the conditioned overlay to be placed relatively to the found condition, but not in this case, so we need to specify a fixed (absolute) vertical position under the 'Formatting' tab:

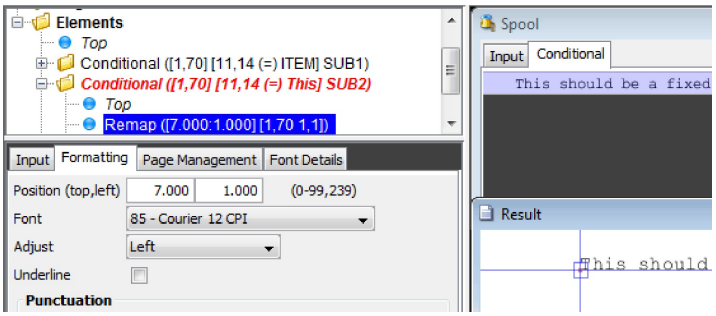


We now click the 'Input' teb to create the new conditioned overlay with this icon: 

We save the new overlay as: **SUB2**

We now click the pencil icon to edit the new, conditioned overlay: 

We click the 'Conditional' tab in the Spool View and insert a remap window element to handle the single line of input. We drag (with left mouse key pressed) over the 'This should.....' and then click in the Result view to place the remapped text:



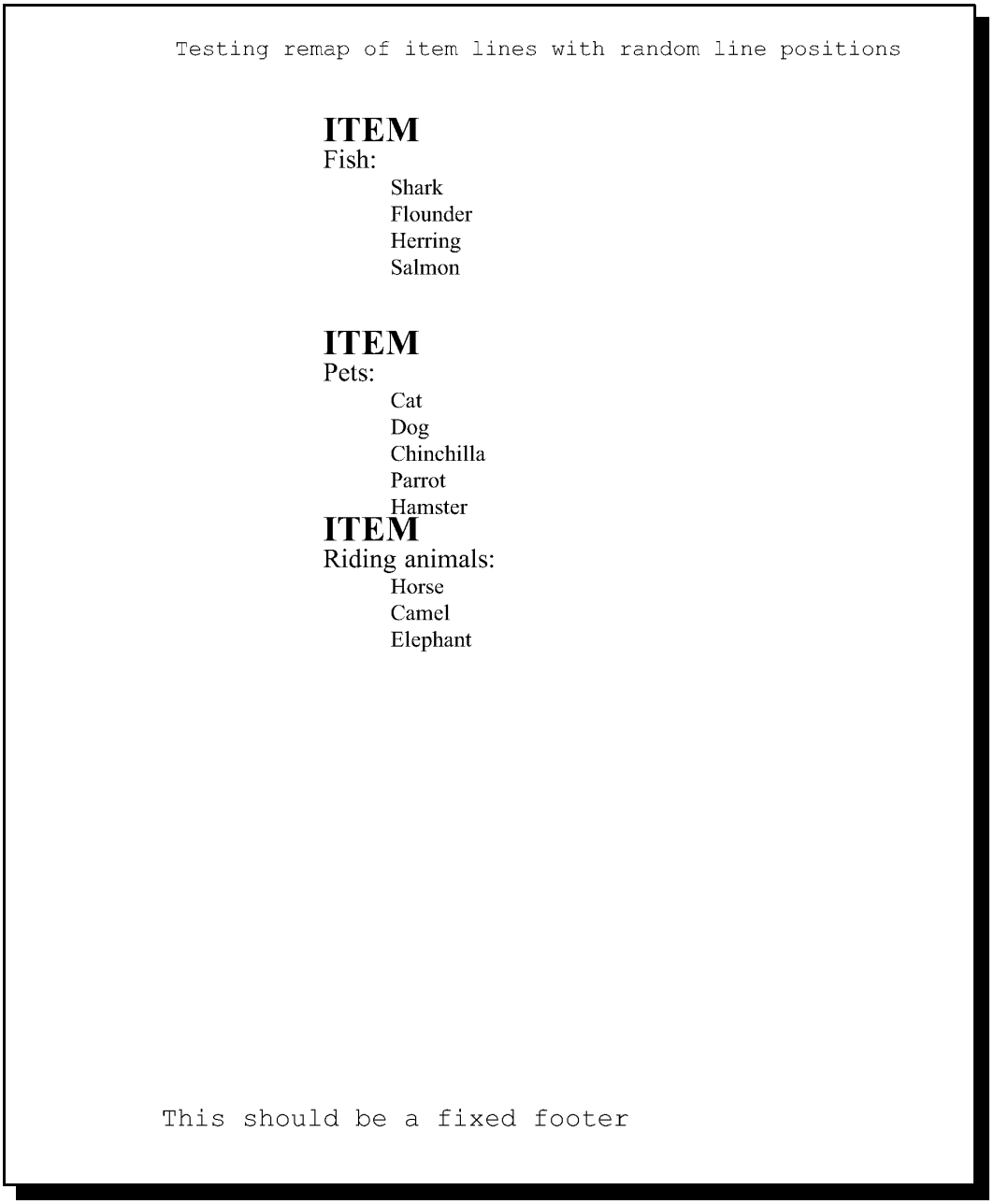
We remap line 1, positions 1-70 and place the result left adjusted 7 inches from the top and 1 inch from the left.

Now we close the conditioned overlay to get back to the main overlay.

The result

Below is the result when the spool entry is merged with the overlay **MAIN**. The result is not intended to be a graphical wonder in any way, but is merely intended to demonstrate the flexibility of this feature.

Page 1:



Testing remap og item lines with random line positions

ITEM
Cars:

- Rover
- Porsche
- Volvo
- Mercedes
- Opel
- Audi

ITEM
Aeroplanes:

- Ellehammer
- Boing
- MIG

This should be a fixed footer

Main Menu Local Environment Setup

2. Test Print Overlay

With option 2 on the main menu you are able to make a test print of an overlay.

The choice of overlay is made in this display:

```
         Test Print Overlay                                          APF720D

This program prints a test version of a given overlay. No data is merged with
it.


Overlay name         __________

Page control         _            Blank = all definitions of the overlay
                                  1 = overlay printed as page 1
                                  2 = overlay printed as page 2 and following
                                  9 = overlay printed as last page

Code page            *SYSVAL      *SYSVAL, Number
Form type            *STD_______
Copies               __1          (1-255)
Drawer / papertype   *PRINTER     (*PRINTER, *OVERLAY, 1-9, 20-39, 251-255)




F3=Exit
F4=List overlays
```

Overlay Name Name of an overlay in the file-set you have open. **F4** will prompt for overlay names.

Page Control: Inserting 1, 2 or 9 is used if Page Control is used, and you want to test the definitions which are used on specific pages only.

Code page: If the system is used by multiple countries, the national characters in the overlays will get printed differently in each country. This option will allow the default code page of the central computer to be overruled.

Form type: The Form type of the resulting printout. Default *STD

Copies: 1-255

Drawer: Overwrite the global drawer settings of the overlay.

3. Merge Spool Entry with Overlay

With option 3 on the main menu you are able to create a printout in which a spool-entry is merged with an overlay and placed in the default output queue for your session.

```
         Merge Spooled File with Overlay                              APF730D

Overlay name              __________
or Overlay Selector       ________
Primary/Secondary set     _           1=Primary 2=Secondary
Spooled file:
   Job name               __________
   User                   __________
   Job number             ______
   File name              __________
   Spool file no.         ______      Number, *ONLY, *LAST
Code page                 ______      Number, *INPUT
Unicode output            *INPUT      *INPUT, *YES
Merge overprint lines     *NO_        *NO, *YES
Form type                 A4______
Copies                    _1          (1-255)
Drawer / Papertype        *PRINTER    (*PRINTER, *INPUT, *OVERLAY, 1-256, Name)

Labels / Continuous       1           1 = Seperate labels  2 = Continuous
Media type                1           1=Termo transfer 2=Termo media
Print mode                1           1=Tear off 2=Rewind 3=Peel off 4=Cutter

Name of output queue to search if spooled file is unknown:
   Output queue           __________
      Library                 __________

F3=Exit                       F4=Prompt                       F12=Cancel
```

Overlay Name : Name of an overlay in the file-set you have open. **F4** will prompt for overlay names.

Primary/ Secondary Set: If you have defined **Copy Management** for the overlay (see page 78 and 70) you can test if you have made the correct selection of overlay elements, by printing the overlay elements for one of the two sets only. If this field is left **blank** (default) the system will as default pick the **Primary** set.

Overlay Selector: If you have defined an **Overlay Selector** you can test if it is able to pick the correct overlay. In this case **Overlay Name** above must be blank. (refer to section **Working with Overlay selectors** page 136)

Spooled File: Spooled file attributes can be entered here.

There is an alternative to typing all the information manually. If you type the name of an **output queue** in the bottom of the screen and press **Enter**, you can retrieve the information about the spool entry from a view of the selected output queue by selecting with option **1**:

```
                          Work with Output Queue

Queue:   PRTHP3         Library:   QUSRSYS

Type options, press Enter
  1=Select 2=Change 3=Hold 4=Delete 5=Display 6=Release 8=attributes

Opt  File        User        User Data   Sts   Pages  Copies  Form Type   Pty

 1   QPRINT      INTERFORM   INVOICE     RDY       1       1   *STD         5
 _   QPRINT      INTERFORM   PROFIT      RDY       5       1   *STD         5









Parameters for option 2
===> ____________________________________________________
F3=Exit   F11=View 2   F12=Previous   F21=Description   F24=More keys
```

Code page: If the system is used by multiple countries, national characters may get printed differently in each country if the code page is not specified in the spool entry. This option will allow the code page of spool entry, to be overruled. I this field is left blank and the spool file does not specify a explicit code page, the system value will be used.

Merge overprint lines: Some spooled files will not react as expected when merging with an overlay. This is the case when spooled files use overprinting i.e. printing two lines on one e.g. for printing in bold - or if the output fields are defined in the wrong order in the printer file.

Enable this feature and the overprinted spooled file lines are printed as one meaning e.g. that bold created in this manner will be ignored.If you press F19-DSPPFM in the green screen designer and you see '0's in the left side of the screen, then this option should most probably be activated.

Form type: The Form type of the resulting printout. Default ***STD**

Copies: 1-255

Drawer: Overwrite the drawer settings of the overlay **global settings**.

NOTE: Labels/Continuous, media type and print mode are all active for ZPL (Zebra) output only.

Labels / Continuous: This is the feed control on the printer. Select **1=Labels** if the media contains of separate labels. select **2=Continuous** if the media is not separated into labels. Use 3=Weblabel and 4=Marklabel for other ways to mark the labels on the media. In case of 2=Continuous you would probably select **4=Cut** for the **print mode** parameter.

Media type: Select **1=Termo transfer** if you use a non heat sensitive media otherwise use option **2=Transfer media**.

Print mode: **1=Tear off** mean that you will manually tear of the labels. **2=Rewind** can be used for rewinding all printed labels onto another roll. This requires special hardware installed.
3= Peel off will print only one label at a time waiting for the current

label to be peeled off. (This also requires additional hardware). **4=Cut** (requires hardware cutter) normally cuts the media for each print job unless you use 2=Continuous - then **4=Cut** will cut out each label.

Output Queue: The name of the output queue where the spool entry to be merged is placed

Library: The library of the above output queue. If left blank the library list will be used.

☺ **TIP** ☺

*After a merge with an overlay the spool attributes are saved in this screen for future test prints until the InterForm400® menus are left. As long as these information are kept, you will be able to view the contents of the spool entry directly by pressing **F14, F18 or F19** from within the design menu*

8. Select File set

A file set consists of related files defining overlays and report compositions.

If the system administrator has granted you rights to access more than one file set your main menu will include the option **8. Select file-set.**

When you choose option 8 on the main menu you get the following screen:

```
        Overview overlay and report file sets                    APF235D

Position to . . . . . _________    File set

Type options, press Enter.
  1=Select

Opt   File-ID     Description
 _    TEST        Testing InterForm 400 possibilities
 _    SAMPLE      Sample overlay









F3=Exit
```

You select the file set you wish to use by typing **1** in one of the lines.

Once you press **Enter**, the system returns to the main menu. The selected file set now appears in the upper right corner of the **main menu**.

If you have access to more than one file set, then the above screen will be presented to you already when you enter the InterForm400® main menu, if you enter with the command, **APF3812/APFMENU KARTSET(*SELECT)**.

9. Select Output Queue and Printer Type

When you enter the InterForm400® main menu, the system is connected with the output queue which has been specified as the user output queue in your user profile for the InterForm400® system (refer to the page **341** and **354**).

If you choose **option 9** on the main menu you will be allowed to change the name of the output queue to be used for test printouts from the InterForm400® system.

```
          Select output queue


Enter the name of an output queue to be used for InterForm400-output.


             Output queue PRTXXX______
                Library      QUSRSYS_____




Also select the type of printer to be used.

   Printer type . . .   HP4D_______   HP4, HP4D, HP4_PJL, HP4D_PJL
                                      HP5C, HP4500, HP4500D,
                                      ZEBRA203, ZEBRA300, QLZPL203,
                                      IPL203, IPL300
```

When the display appears, it already contains the name of the output queue which is currently active.

Output queue: Specify the name of the output queue you wish to use temporarily.

Library: Specify the library of the queue, or leave blank to search library list.

Printer type: If users are allowed to override standard printer type (refer to **2. Set default output queue and printer type** page **341**), you can select printer type. Refer to page 478 For more information.

Once you press **Enter** the system returns to the main menu, and the new output queue, Printer type will appear in the upper right corner of the screen.

(For more information on selection of printers refer to page **341** and page **478**)

10. Work with actual Output Queue

If you choose option 10 on the main menu you will work with the output queue which is currently active for output from the InterForm400® system. This is convenient when operating with different forms types which causes the spool queue to generate messages requesting your reply.

This function activates the command APFWRKOUTQ and adds your default InterForm400® output queue to the command. This screen, however, has extended features compared to the usual WRKOUTQ screen. If you have installed the PCL Viewer, **Swiftview**, you can e.g. use option **5=display** to view spool entries containing PCL data (datatype *ASCII). Refer to **Appendix L** for more information on the PCL Viewer.

The following command can be entered from outside InterForm400®.

```
APF3812/APFWRKOUTQ
```

You can also see the number of pages that a merged spooled file consists of. If you have used a PJL printer type for the merge in InterForm400, you can even change the page range of the merged spooled file with option 2 - change spooled file.

Option '1' on the APFWRKOUTQ command has been extended compared to the OS400 WRKOUTQ. In APFWRKOUTQ you can also chose to merge a selected spooled file into a PDF file and send it as an e-mail.

☺ **TIP** ☺

If you need an System i command line, and you do not have a second session, and you do not want to exit the InterForm400® menu, you can use this option to obtain a command line.

Working with Overlay Selectors

An **Overlay Selector** will allow you to make conditioned overlay selections on certain character combinations in the print data of the spool entry. The overlay selector decides what overlay to merge with for each page of the merged spool file.

> ☺ **TIP** ☺
>
> *It is not necessary to define an AFC definition to let the **Overlay Selector** take effect. An overlay selector can be used when making an interactive merge using option **3. Merge Spool Entry with Overlay** on the **main menu**.*

When selecting option **4. Working with Overlay Selectors** on the main menu the following screen appears:

```
         Work with Overlay selectors                                AFC300D

Start with . . . __________ __________

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt    Selector    File-set      Description

(No overlay selectors)

                                                                       End
F3=Exit        F5=Refresh        F6=Add                      F12=Cancel
```

Press **F6** to create a new Overlay Selector:

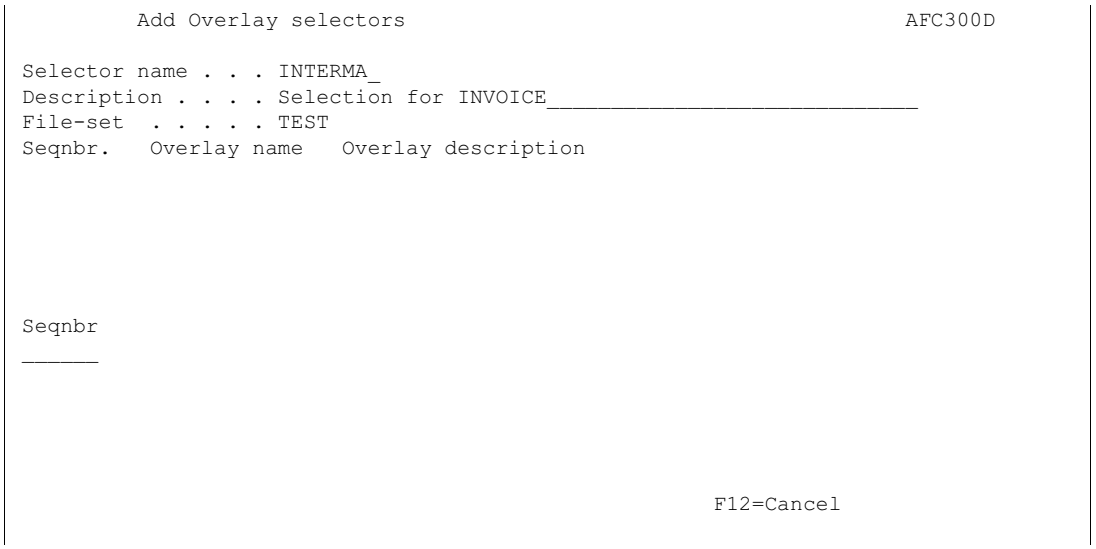
```
         Add Overlay selectors                                      AFC300D

Selector name . . . ________
Description . . . . ____________________________________________________
File set  . . . . . __________

                                                                       End
F3=Exit        F5=Refresh                                  F12=Cancel
```

Selector Name: The name you will be referring to in the AFC function **1. Merge with overlay** in **Functions attached to output queues** (see page 158), and when making interactive merge using option **3. Merge spool entry with overlay** (page 131)

Description: For your information.

File set: The file set which the overlay selector should be restricted to select overlays from.

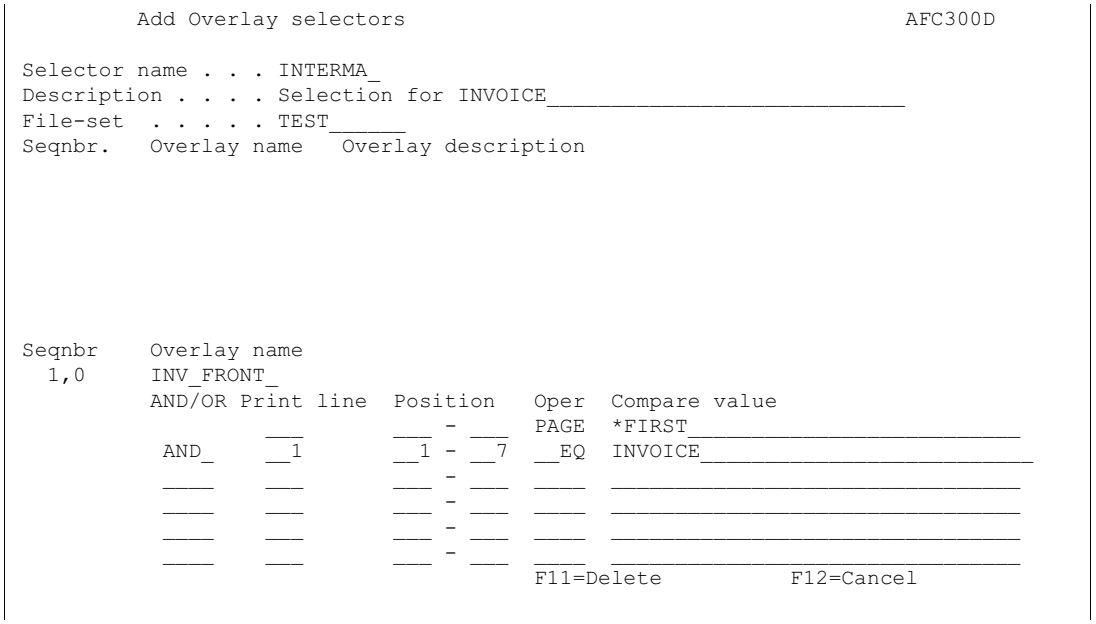
Selection Criteria Entries



You can now enter the specific requirements your spool entry data should meet for selecting a certain overlay. You can have several sequence lines checking on many different types of spool entries under the same selector definition, or you can make selectors for each print job type.

If the conditions for a sequence line are true for a given page of the spool entry being checked, the rest of the sequence lines will be ignored.

When entering a sequence line you will get the following screen:



Overlay name: The name of the overlay to call in the file-set defined in the entry screen for the Overlay Selector (page 136)

AND/OR: Relate this statement to the previous statement

Print Line: The print line in the spool entry to search

Position: The column interval to search

Oper. The operator relating to the compare value

The operators used are standard operators known from e.g. Query/400:

EQ Equal to compare value
NE Not equal to compare value
LT Less than compare value
LE Less than or equal to compare value
GT Greater than compare value
GE Greater than or equal to compare value
PAGE Select only for certain pages. This can be used for spooled files with unknown contents.

Compare Value: The character string or numeric value which the operator should be compared to. If the operator is **PAGE** you can use these values:

***FIRST** Only for the first page of the spooled file.
***LAST** Only for the last page of the spooled file.
***ODD** Only for odd page numbers
***EVEN** Only for even page numbers

Getting Familiar with Overlay Selectors

The following makes use of the demo spool entry delivered with InterForm400®. You can print this from the menu **12. Service Functions**.

Our intention is to make a selector which prints all letters of the spool entry regarding the InterForm400 **modules** with the overlay **IF400DEMO** delivered with this system. For pages regarding InterForm we want to use the modified version **MYDEMO** which was created in section **Getting Familiar with Overlays.**

Step 1. Placing overlays in One File set

As one selector is limited to operate with overlays from the same file set, we will first make a copy of the overlay **IF400DEMO** from fileset **SAMPL**E into file set **TEST**. First make sure you are standing in file set **TEST** (check upper right corner). If not, you should change file set with option 8 on the main menu.

Enter option **1. Design Overlays** on the main menu

```
         Design InterForm 400 overlay                                  APF300D

Overlay name      IF400DEMO_____



F3=Exit             F4=List overlays                          F12=Cancel
```

Here we can type in the same name as the overlay in file set SAMPLE. There will be no conflict of names, as they are located in separate file sets.

```
         Design InterForm 400 overlay                                  APF300D

Overlay name         IF400DEMO

Overlay text         _____________________________
Line spacing         040___     in 1/240 of an inch (*INPUT, 1-720)
Rotation             000___     (*INPUT, 0, 90, 180, 270)
Extra left margin
       positions     _0         (0-99)
Maximum number of
  print positions    378        (1-378)
Extra blank lines
          on top     _0         (0-99)
Font                 0066_      *INPUT, fontnumber     F4=List
Extended page def.   N          (Y N)
Drawer / Papertype   *PRINTER   (*INPUT, *PRINTER, 1-255, Name)   F4=List
Paper Size           0          F4=List
Pages per side       __
Copy management      N          (Y N)
Duplex print         N          (N=no  S=short edge margin  L=long edge margin)
Duplex margin        __0        in 1/240 of an inch (1-720)
Back page overlay    __________  Code for placement _ (B=back page F=front)

F3=Exit      F4=Prompt           F9=Copy from another overlay      F12=Cancel
F13=Set view/print parameters    F14=PCL-view
```

Since we are actually creating a new overlay we can use **F9** to copy from another overlay/file set:

```
         Design InterForm 400 overlay                                APF300D


 Name of overlay to copy from      __________

F3=Exit       F4=Prompt          F9 = copy from another file-set F12=Cancel
```

We know that the **IF400DEMO** overlay is in another file set so we have to press **F9** to get a list of file sets to choose from.

```
                              .............................................
                              :      Overview InterForm 400 file-sets       :
                              : 1=Select                                    :
                              : 1 SAMPLE     InterForm 400 Samples          :
                              : _ TEST       Test file-set                  :
                              :                                             :
                              :                                             :
                              :                                             :
                              :                                             :
                              : F12=Cancel                                  :
                              :.............................................:
F3=Exit       F4=Prompt           F9 = copy from another file-set F12=Cancel
```

We select file-set **SAMPLE** and press **Enter**:

```
                              .............................................
                              :          Overview overlays                  :
                              : Start with:                                 :
                              : 1=Select                                    :
                              : 1 IF400DEMO    InterForm400 demo            :
                              :                                             :
                              :                                             :
                              :                                             :
                              :                                             :
                              : F12=Cancel                                  :
                              :.............................................:
```

Now we select overlay **IF400DEMO** and press **Enter**:

```
         Design InterForm 400 overlay                                APF300D

 Overlay name          IF400DEMO

 Overlay text          InterForm 400 Demo Overlay____
 Line spacing          _40___     in 1/240 of an inch (*INPUT, 1-720)
 Rotation              000___     (000 090 180 270)
 Extra left margin
        positions      _8         (0-99)
 Maximum number of
   print positions     378        (1-378)
 Extra blank lines
           on top      _4         (0-99)
 Font                  _111_      *INPUT, fontnumber     F4=List
 Extended page def.    N          (Y N)
 Drawer / Papertype    *PRINTER   (*INPUT, *PRINTER, 1-255, Name)   F4=List
 Paper Size            0          F4=List
 Pages per side        __
 Copy management       N          (Y N)

 F3=Exit        F4=Prompt           F11=Delete this overlay       F12=Cancel
     F13= Set view/print parameters      F14=PCL-view
```

We have now made a copy of the IF400DEMO overlay from file-set SAMPLE and stored it by the same name in file-set TEST. We can now exit to the design menu with **F3**.

Step 2. Examining Spool Entry Selection Criteria

Before we create the overlay selector we need to examine the spool entry in order to find something that distinct the pages.

Press **F13= Set view/print parameter**. Enter the overlay name and go to the bottom of the screen to enter the Output Queue where the spool file resides. Find the DEMO spool entry in the output queue and select it with option 1. Press Enter.

```
         Select Parameters for view / print                          APF730D

 Overlay name            IF400DEMO_

 or Overlay Selector     ________
 Primary/Secondary set   _            1=Primary  2=Secondary
 Spooled file:
    Job name             __________
    User                 __________
    Job number           ______
    File name            __________
    Spool file no.       _______      Number, *ONLY, *LAST
 Code page               _______      Number, *INPUT
 Unicode output          *INPUT       *INPUT, *YES
 Merge overprint lines   *NO_         *NO, *YES
 Form type               *STD_____
 Copies                  __1          (1-255)
 Drawer / Papertype      *PRINTER     (*PRINTER, *INPUT, *OVERLAY, 1-256, Name)


 Name of output queue to search if spooled file is unknown:

    Output queue . . . . AFC_INPUT1_
      Library  . . . . .   APF3812___

F3=Exit                      F4=Prompt                    F12=Cancel
```

In the design screen **F18=DSPSPLF** will appear and the contents of the spool file can now be viewed directly from the design screen.

By typing **+1** and pressing **Enter** a few times we find the word “modules.” in line **15** position **34** to **41** on all letters regarding the modules.

```
                           DISPLAY OUTPUT FILE
File . . . . . : QPRINT                                  Page/Line 1/15
Function . . . . +1                                        Columns   1 - 78
Search for . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Re. Your new InterForm400 modules.
       ----------------------------------
       Congratulations with your new InterForm400 module(s).
       You are now able to fully exploit the benifits of combining
       InterForm400 with one or more of the powerful modules to impress
       your customers and ease the workflow in your organisation.
       The following license code(s) will be needed to activate the
       module(s) permanently to your System(s):
       Product          Model   i-Group     Serial No.     License Code
       ------------------------------------------------------------------
       Interword400     510       i300       44A2971       81 20 01 3A
       PDF security     520       i100       44A9032       3F 78 66 99
       Should you have any questions regarding the modules, you are
       welcome to contact our technical support via:
       support@interform400.com
       Or download the latest documentation from the Internet on:
F3=Exit     F12=Cancel      F19=Left       F20=Right       F24=More keys
```

By typing **P+1** (page forward) and pressing **Enter** a few times we find that the text ”**modules.**” is found in line **15** position **34** to **41** on all pages regarding InterForm400®.

```
                              DISPLAY SPOOL FILE
File  . . . . . :   QPRINT                          Page/Line  3/15
Function  . . . .   P+1                              Columns    1 - 78
Search for  . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Re. Your new InterForm400 modules.
       ---------------------------------
       Congratulations with your new InterForm400 module(s).
       You are now able to fully exploit the benifits of combining
       InterForm400 with one or more of the powerful modules to impress
       your customers and ease the workflow in your organisation.
       The following license code(s) will be needed to activate the
       module(s) permanently to your System(s):
       Product          Model   i-Group     Serial No.     License Code
       ------------------------------------------------------------------
       InterWord400     170       i050       4431043       A1 23 11 95
       InterFax         270       i100       4420911       FA C0 03 99
       Should you have any questions regarding the modules, you are
       welcome to contact our technical support via:
       support@interform400.com
       Or download the latest documentation from the Internet on:
F3=Exit     F12=Cancel     F19=Left     F20=Right     F24=More keys
```

We are now ready to make a selector which picks the correct overlay according to the above conclusion.

Step 3. Entering the Selection Criterias in the Selector

We select option **4** on the main menu and press **F6** to add a new selector:

```
         Add Overlay selectors                                    AFC300D

Selector name . . . MYSELECT
Description . . . . Selection for Document and modules letters______
File-set  . . . . . TEST_____









                                                                      End
F3=Exit        F5=Refresh                                  F12=Cancel
```

We define the name **MYSELECT** which should be placed in file-set **TEST** and we press **Enter**

```
         Add Overlay selectors                                      AFC300D

Selector name . . . MYSELECT
Description . . . . Selection for Document and modules letters______
File-set  . . . . . TEST______
Seqnbr.   Overlay name   Overlay description




Seqnbr    Overlay name
  1,0     IF400DEMO_
          AND/OR Print line  Position   Oper  Compare value
                    _15      _34 - _41  EQ__  modules._____________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
                                        F11=Delete          F12=Cancel
```

We enter a new sequence line by typing **1** followed by **Field Exit**, and we type in the overlay name **IF400DEMO** which we want to use if the conditions stated in this sequence line are **true**.

We now define that if we in Print line **15** position **21** to **28** has a text string which equals **"modules."** (case sensitive). the condition is true.

We press **Enter** to save this sequence line and enter sequence line **2.**

```
         Add Overlay selectors                                      AFC300D

Selector name . . . MYSELECT
Description . . . . Selection for Document and modules letters______
File-set  . . . . . TEST______
Seqnbr.   Overlay name   Overlay description
 0001     IF400DEMO      Demo overlay for InterForm 400




Seqnbr    Overlay name
  2,0      MYDEMO____
          AND/OR Print line  Position   Oper  Compare value
                    _15      _34 - _41  EQ__  Document____________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
           ____     ___      ___ - ___  ____  ____________________________
                                        F11=Delete          F12=Cancel
```

In this we just define that if we have **Document** in line **15** position **34** to **41** we will choose the overlay **MYDEMO**.

We press Enter and press F3 to leave the Overlay Selector menus.

Step 4. Testing the Selector

We now enter menu point **3. Merge Spool Data with Overlay** on the main menu.

```
         Merge Spooled File with Overlay                              APF730D

Overlay name              __________
or Overlay Selector       MYSELECT
Primary/Secondary set     _   1=Primary, 2=Secondary
Spooled file:
   Job name               DSP010700_
   User                   PETER_____
   Job number             073534
   File name              QPRINT____
   Spool file no.         0005_       (no. / *ONLY / *LAST)
Code page                 _______     Number, *INPUT
Unicode output            *INPUT      *INPUT, *YES
Merge overprint lines     *NO_        *NO, *YES
Form type                 *STD______
Copies                    __1         (1-255)
Drawer / Papertype        *PRINTER    (*PRINTER, *INPUT, *OVERLAY, 1-256, Name)


Name of output queue to search if spooled file is unknown:

   Output queue . . . .  __________
     Library  . . . . .    __________

F3=Exit                       F4=Prompt                     F12=Cancel
```

We use the same procedure as in **Getting Familiar With Overlays**, but instead of stating an overlay, we enter our selector **MYSELECT**.

We notice that page **1, 2** and **4** uses overlay **IF400DEMO** (see page 50), and page 3 uses overlay **MYDEMO** (see page 122).

The selector can also be used in an Auto Forms Control definition. You can try the selector in the section **Getting Familiar with Auto Forms Control** later.

General Description of Auto Forms Control Sub-system

Auto Forms Control (AFC) is a unique facility of the InterForm400® system, which enables you to define automatic control of merging spool entries with overlays without the need of any programming.

Auto Forms Control is monitoring data queues of defined output queues, looking for spool files to become ready. When a spool file becomes ready, a dataqueue entry will be created which wakes up the AFC job associated with the specific output queue.. A copy of the spool file will be created and processed according to the AFC entries made for the monitored output queue.

Apart from the output queue monitored a special job, TOOLSHED is also started. This job is a java service job, which can be used by various InterForm400 functions. It is e.g. used for installing color images, that are not BMP or JPG. Java 1.6 (or higher) is required for this.

Auto Forms Control takes *SCS spool files from the spool system, adds an electronic form and manipulates the spool data accordingly and sends the resulting spool file (containing PCL code) back to the spool system.

During the installation of Auto Forms Control the following objects will be created on the system:

- Sub-system description: `APF3812/AUTO_FORM`
- User profile: `AFCOPER PASSWORD(*NONE) SPCAUT(*SPLCTL)`
- Job description: `APF3812/AUTO_FORM`

Note that if you want to make use of the feature of InterForm400® to transform AFPDS spool entries into *USERASCII, and these AFP jobs are using resource libraries not listed in the system library list, then the above job description must be changed in order to include these libraries in the library list.

☺ TIP ☺

If you alternatively use the AFPDS spooled files directly in InterForm400 only the text visible via DSPSPLF will be used, but all functions in InterForm400 are supported.

The Auto_form subsystem is not started automatically, so you will e.g. need to add a monitored STRSBS APF3812/AUTO_FORM command in the IPL startup program.

The setup of the primary functions of Auto Forms Control is managed by selecting menu option 5 on the main menu. The same menu can be entered directly by the command:

```
APF3812/AFCADM
```

The menu appears like this:

```
InterForm400  -  Auto Forms Control                System.......: INTER01
                                                   Workstn ID...: QPADEV0003
Subsystem....: AUTO_FORM                              CCSID ....: 00037
   Library...:   APF3812                           User ID......: PETER

Select one of the following options:

 1. Functions attached to Output Queues
 2. Forms Type Table
 3. Split Definitions
 4. Finishing Definitions
 5. Sort Definitions
 6. PDF bookmark definitions
 7. User output queue
 8. Work with E-mail senders

10. Start AUTO_FORM subsystem
11. End AUTO_FORM subsystem
12. Work with active subsystem AUTO_FORM

Option:  __

F3=Exit                    F6=Display messages             F12=Cancel
```

Beside the above definitions the function Overlay Selector can be used within the AFC definitions. The overlay selector is used when the spool data should be the “trigger” for the merge in AFC. This function is found as option 4 in the main menu.

10. Start AUTO_FORM subsystem

Auto Forms Control is running as an ordinary System i subsystem, and therefore has to be started as such. It is a good idea to let the subsystem start automatically at IPL. This is done by inserting the following commands in your startup program:

```
STRSBS SBSD(APF3812/AUTO_FORM)
MONMSG CPF0000
```

Of course, you can always start the sub-system manually, by the command:

```
STRSBS APF3812/AUTO_FORM
```

NOTE

If you have decided to name the Auto_form subsystem you need of course to change the commands above accordingly. (Refer to page 40 for details of how to define the change in InterForm400.)

11. End AUTO_FORM subsystem

Before applying a new license code or making upgrades to the AUTO_FORM sub-system, this should be ended.

This can be done in the menu or by the command (check first if jobs are currently being processed):

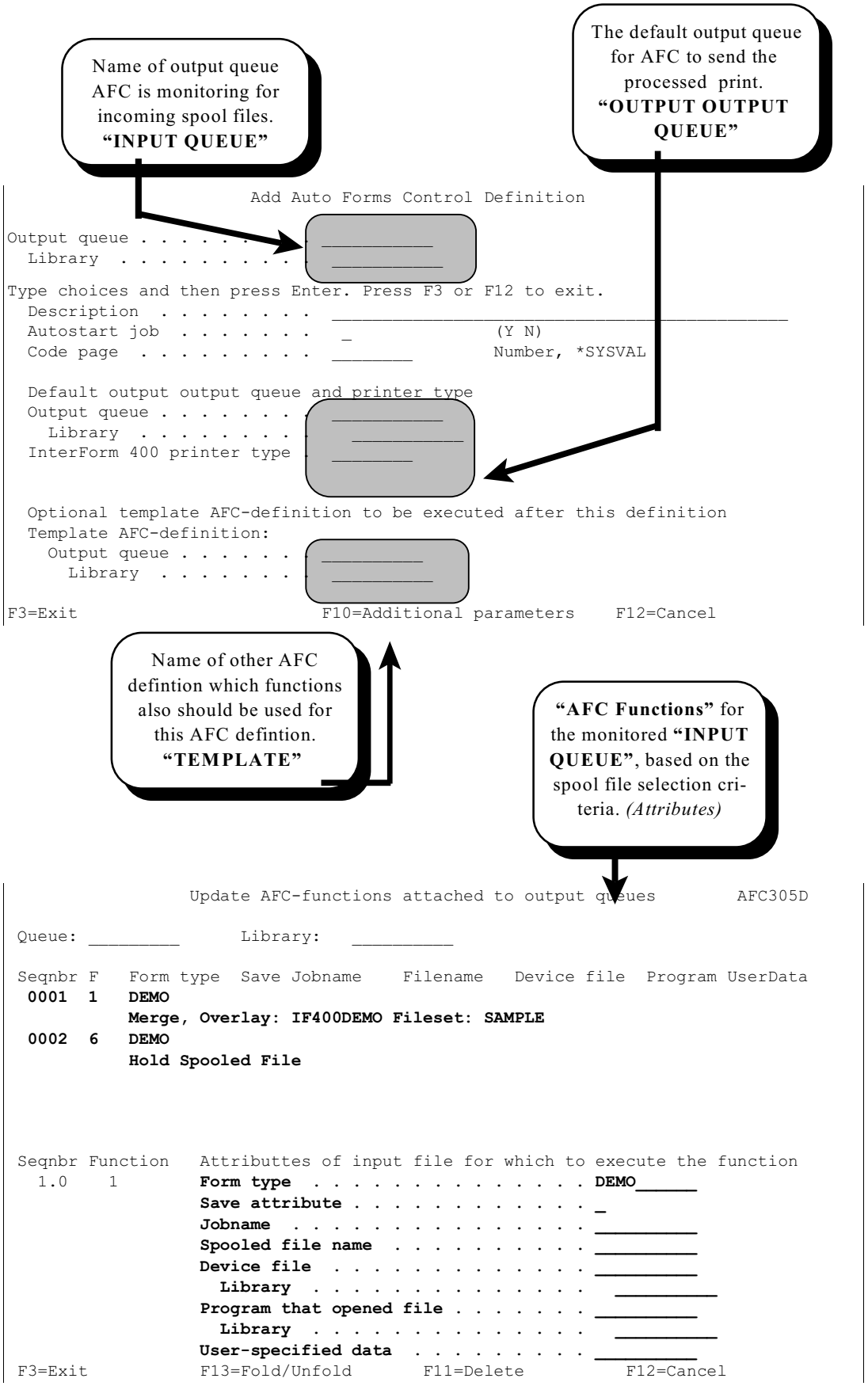
```
ENDSBS SBS(AUTO_FORM) OPTION(*IMMED)
```

12. Work with Active Subsystem AUTO_FORM

This menu item is a shortcut to the command:

```
WRKACTJOB SBS(AUTO_FORM)
```

Overview of AFC Main Definitions



The “INPUT QUEUE” mentioned above is a created output queue without a device attached. This enables InterForm400® to pick up the spool files, without the printer writer is processing the spool file.

AFC usually operates with both an “INPUT QUEUE” and the standard defined “OUTPUT QUEUE” with a printer attached, but AFC can operate on one output queue shared with a printer. For more about this feature refer to page 38 and page 187.

Spooled file selection criteria

The spooled file attributes listed above can be used for conditioning the specific function. On the screen above the function 1=Merge with overlay is conditioned so that it is only executed for spooled files which has formtype=’DEMO’. Any blank fields for this criteria are ignored.

The conditioned attributes are:

Form type
This is the FORMTYPE attribute of the incoming spooled file. Remember, that the comparison is case sensitive!

Save attribute
This is compared to the SAVE attribute. If you set ‘Save attribute’ to ‘Y’, then the function will only execute if the SAVE attribute is ‘*YES’. You can e.g. use this to do a conditional delete of the spooled file after processing: Add a 6=Delete spooled file which is conditioned on this field to be ‘N’.

Job name
The job name that created the spooled file.

Spooled file name
The name of the spooled file.

Device file and Library
The device file (or rather printer file) used when the spooled file was created. You can use the library if you e.g. want Auto Forms Control to react differently for spooled files created from a test library.

Program that opened the file
The program that created the spooled file. Here you can also use the library as an additional condition.

User-specified data
The user data (USRDTA) spooled file attribute. This is also case sensitive as the form type.

Auto Forms Control Definitions

When selecting option **1. Functions Attached to Output Queues** in the menu **5. Work with Auto Forms Control** on the main menu we get this screen:

```
          Work with Auto Forms Control output queues                  AFC300D

Start with . . . . . .

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display   8=Start AFC-job   9=End AFC-job
  12=Work with output queue   13=Enter step by step mode

Opt    Outq        Library      Description                          Status
__     AFC_INPUT1  APF3812      Job for sample printout              *ACTIVE

                                                                          End

F3=Exit    F5=Refresh    F6=Add    F11=View 2      F12=Cancel    F15=Subset
```

The first time this screen is entered only the **Sample** queue **AFC_INPUT1** will exist (see the **Getting Started** section page 26). Press **F6** to create a new AFC definition. When created press **F5** to update the screen above.

With **F15=Subset** you can include only output queues in a specific library or only output queues where the description contains a certain text.

Under **status** you can see if the relevant server job is running (*ACTIVE) or not.

Some of the options are:

8=Start AFC-job Starts the server job if not already started. In this manner you can start individual jobs without having to restart the whole AUTO_FORM subsystem. You can also use the command APF3812/STRAFCJOB to do the same.

9=End AFC-job Ends the server job monitoring the selected output queue. You can also use the command APF3812/ENDAFCJOB to do the same.

12=Work with output queue
Use this option to do a WRKOUTQ on this queue. Note however that the command behind this option is APF3812/APFWRKOUTQ offering you more functionality than the OS400 WRKOUTQ. Refer to page 532 for more information of this command.

13=Enter step by step mode
If you want to test the functionality of the AFC definitions for an output queue you can use this option. After running this option you will get a break message in the current job and the AFC job will stop and wait for an answer for each sequence line when a spooled file arrives. The message will look like this:

```
                              Display Messages
                                                          System:   INTER03
Queue . . . . . :   QPADEV0009              Program . . . . :   *DSPMSG
  Library . . . :     QSYS                    Library . . . :
Severity  . . . :   00                      Delivery  . . . :   *BREAK

Type reply (if required), press Enter.
  AFC-job AFC_INPUT1/AFCOPER/203661 is ready to continue with seqnbr 1 from
    AFC-queue AFC_INPUT1.  (G *ENDDBG)
    Reply . . .   ____________________________________________________________









                                                                          Bottom
F3=Exit              F11=Remove a message                 F12=Cancel
F13=Remove all       F16=Remove all except unanswered     F24=More keys
```

You can now check the output queue and the spooled files generated so far before you answer the message with '**G**' (for Go) and let the AFC job execute this single sequence line. When you tested enough and what the job to return to normal execution you answer the message with ***ENDDBG** (end debug) or end and restart the AFC job.

> ☺ **TIP** ☺
>
> *If you want to check up on what the AFC job have done you can change the AFC job to log the CL commands:* `CHGJOB JOB(job number/AFCOPER/job name) LOGCLPGM(*YES)`
>
> *This will tell InterForm400 not to remove any messages from the joblog thus giving you much more information of what it have done - not just logging CL commands..*

Entering queue and job names to an AFC definition

When changing or adding an AFC definition, the entry screen below will be shown.

```
         Update Auto Forms Control Definition                      AFC302D

Output queue . . . . . :  AFC_INPUT1
  Library  . . . . . :    APF3812___

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  Job for sample printout_____________________
  Autostart job  . . . . .  Y                (Y N)
  Code page  . . . . . .    *SYSVAL          Number, *SYSVAL      F4=List
    When to use code page  . .  *SPLFATR     *SPLFATR, *ALWAYS

  Default output output queue and printer type
  Output queue . . . . . .  AFC_OUT1__
    Library  . . . . . .      APF3812___
  Printer type . . . . . .  HP4_______

  Optional template AFC-definition to be executed after this definition
  Template AFC-definition:
  Output queue . . . . . .  __________
    Library  . . . . . .      __________


F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

Output Queue: Name of output queue, AFC should be monitoring for incoming spool files (INPUT QUEUE). The output queue you intend to use for AFC functions **should not** have a printer device attached. The reason for this is that the AFC sub system only works on spool entries that gets the status ***RDY** in the queue. If the queue also had a printer device attached, you could risk that the jobs would be printed before the AFC system managed to complete its automatic functions. (See Getting Familiar with AFC, Example 2 for an alternative way of setting up AFC)

Library: Insert library or leave blank to search library list.

Description: For your own information.

Auto Start: If **Y** is entered the AFC functions for this queue will be started automatically after IPL or when the subsystem AUTO_FORM is started.

If **N** is entered the subsystem job has to be started manually.

Code page: This defines if a specific code page should be forced for the spool entries processed by this AFC definition. *SYSVAL means that the default code page specified for the system will be used, unless a specific code page is defined as attribute for the spool file.

When to use code page

With ***SPLATR** the code page specified above is usually used - unless the incoming spooled file has a specific code page. If so then the spooled file code page is used instead.

With ***ALWAYS** the code page above is ALWAYS used for e.g. merges independently of the code page setting of the original spooled file.

Default Output Output Queue and Printer Type

Output Queue/ Library: A default output queue for the result of e.g. AFC merges can be entered here. This queue will be used for the AFC definition lines having *DEFAULT as keyword. For AFC definitions having a specific queue defined this default queue setting will be ignored.

If these fields are left blank, the keyword *DEFAULT will not be accessible in the AFC definition lines, i.e. a specific queue must be entered for each AFC definition line.

Printer Type: Same functionality as above, but for Printer Type.

Template AFC-definition to be executed after this

Output Queue/ Library:

If these options are filled in, the same spool entry will be processed by the AFC definitions defined for the output queue stated here. This is done immediately after the processing of this set of AFC definitions, as if the other queues AFC definitions were placed in direct extension to these queues definitions.
Note that if the AFC definition 9=Exit is executed in the original queue, the spool file will not be processed by the AFC definitions for the queue stated here.

This option is especially relevant when several printers should have the same AFC definition. A Template AFC definition can be made, which then can be referred to from other AFC defintions.

Additional parameters

After entering the output queue you can press **F10** to insert or change additional parameters:

```
          Additional parameters

Type additional info and press Enter. Press F12 to exit.
  Job name AUTO_FORM job . . .  AFC_INPUT1     *OUTQ, Name

  Job description  . . . . . .  *DEFAULT__     *DEFAULT, Name
    Library  . . . . . . . . .    __________
  Library list option  . . . .  *JOBD_____     *CURRENT, *JOBD,
                                                *SYSVAL, *NONE
  Use spooled file code page
    as job CCSID . . . . . . .  *NO_           *NO, *YES

  Separator drawer . . . . . .  *NONE          *NONE, 1-9, 20-39

  DBCS code page . . . . . . .  ____0          Number     F4=List
    When to use DBCS code page  _______        *SPLFATR, *ALWAYS
 F12=Cancel
```

The additional parameters (for which normally the default values will work fine) are:

Job name:

The contents of the field **job name AUTO_FORM job** is used as name for the job in the subsystem, which performs the automatic functions. It is recommended to use the same name as used for the output queue.

Job Description

With *DEFAULT it refers to the job description APF3812/AUTO_FORM. **DO NOT** change this job description or any other object in the APF3812 as the change will not be copied over to the new version. If you need to use a job description with other specifications then use another one placed in another library than APF3812.

Requirements:
The **user** that change this parameter must have:
*OBJMGT authority for the Job description.
*EXECUTE authority to the library of the job description
*READ authority to the user profile: AFCOPER.
The **AFCOPER** user profile must have:
*USE authority for the job description
*EXECUTE authority to the library of the job description

Library

Library where the job description is placed.

Library list option

How to build up the library list.
***JOBD** will refer to the initial library list parameter, INLLIBL of the job description used.
***CURRENT** will use the same library list as the current job starting the AFC job. The current job is AFCSTART when starting with the subsystem, but if you start the job manually the library list may be different so use this value with care...

Use spooled file code page as job CCSID

Normally the CCSID of the AFC jobs is the same as the system value (with the value ***NO**) , but if you change the value from ***NO** (which is default) into ***YES** the spooled file code page is used as the jobs CCSID. This means that if you are running several codepages on the same machine you can now let the user programs called by Auto Forms Control run under the CCSID indicated by the spooled file that triggered the call.

If you state ***YES** and the spooled file has no specific code page (e.g. *DEVD) then the CCSID of the job is set to the code page specified for the AFC output queue - refer to page 151 to see where it is set.

Separator drawer

Sets the default separator drawer i.e. from what paper drawer in the printer the separator page will be printed. This is activated via the **1=Merge with overlay** command in AFC - if it has the value ***DEFAULT** as the separator drawer - refer to page 162 for more information. The separator page contains the following information:

```
Output from InterForm400 merge

     Overlay name  . . . . : IF400DEMO
       File set  . . . . . :   SAMPLE
     Primary / secondary . : *PRI
     Copies  . . . . . . . : 001

Input spooled file:

     *.Jobname . . . . . . : QPADEV0002
     *.Userprofile . . . . : KSE
     *.Jobnumber . . . . . : 092247
     *.Date  . . . . . . . : 2015-04-25
     *.Time  . . . . . . . : 02:40:15
     *.Filename  . . . . . : QPRINT
     *.Filenumber  . . . . : 0004
     *.Number of pages . . : 0000007
    Kim Egekjaer
```

DBCS code page

(Prompt with F4 to list valid DBCS codepages.) If any DBCS characters is found in the spooled file then the code page specified here will be used - unless the spooled file has a explicit DBCS code page then the next value determines the code page to use:

When to use DBCS code page

Possible values are:
***SPLFATR**: The DBCS code page above is always used for any DBCS characters in the spooled files - **unless** the spooled file has a specific DBCS code page specified in CHRID - then this is used instead.
***ALWAYS**: The code page of the spooled file is ignored for DBCS characters and the DBCS code page above is always used when a DBCS spooled file is detected.

The AFC function screen gives the possibility of entering sequence lines which will all be executed for each spool entry getting RDY in the input queue for the AFC definition.

```
         Update AFC-functions attached to output queues           AFC305D

Output queue . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812

Seqnbr F. Form type  Save Jobname    Filename   Device file  Program   UserData




Seqnbr Function     Suspend
  1,0   _              _ *=Suspend
         1 = Merge with overlay              9 = Exit
         2 = Send Network Spooled File       A = Change Attributes
         3 = Transform *AFPDS to *USERASCII  B = Split spooled file
         4 = Copy Spooled File               C = Prepare for Finishing
         5 = Move Spooled File               D = Sort Spooled File
         6 = Hold Spooled File               F = Change writer
         7 = Delete Spooled File             P = Send PDF E-mail
         8 = Call Program                    * = Comment
F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
F15=Subset        F17=Subset by Spooled File      F23=More options
```

Notice the **suspend** possibility: If you mark a sequence line with a '*****' in the suspend field then the sequence line is temporarily ignored. This can be used e.g. for testing a new setup without having to totally delete the old setup or to 'remove' lines that temporarily are not needed. When you want to activate the lines again you can either manually remove the suspension '*****' from each line or remove all suspensions via **F5=Service** and option **1. Remove all suspensions**.

F15=Subset If you have many sequence lines you can subset the list so that you will only be able to see sequence lines conditioned on one or more specific spooled file attributes. Press F15 on the screen above to do that:

```
                Subset list


 Form type  . . . . . . . . . . . . DEMO______
 Save attribute . . . . . . . . . . ____       *NO *YES
 Jobname  . . . . . . . . . . . . . __________
 Spooled file name  . . . . . . . . __________
 Device file  . . . . . . . . . . . __________
   Library  . . . . . . . . . . .   __________
 Program that opened file . . . . . __________
   Library  . . . . . . . . . . .   __________
 User-specified data  . . . . . . . __________
F3=Exit            F12=Cancel
```

If you fill out one or more of these spooled file attributes, then only sequence lines conditioned on these values are listed. This means e.g. that with the values above only line 1 and 2 will be listed of the lines shown below:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT1     Library:   APF3812

Seqnbr F. Form type  Save Jobname    Filename   Device file  Program   UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0002  1  DEMO                      QPRINT
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0003  1                           QPRINT
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0004  6
          Hold Spooled File
Seqnbr Function     Suspend
  2.1




F3=Exit             F5=Service        F13=Fold/Unfold
F15=Subset        F17=Subset by Spooled File
```

Notice that even though line 4 is unconditionally run, then it is still not listed - as it is not conditioned on the form type.

F17=Subset by Spooled File

If you want to check which sequence lines in the overlay that is triggered by a specific spooled file, then you can use this function key. When you press F17 you will be prompted for either the spooled file identification or an output queue on which such a spooled file can be found:

```
                  Subset Spooled File

    Job name              __________
    User                  __________
    Job number            ______
    File name             __________
    Spooled file no.      ______        Number, *ONLY, *LAST


 Name of output queue to search if spooled file is unknown:

    Output queue . . . . AFC_INPUT1
      Library  . . . . .   APF3812___

 F3=Exit             F12=Cancel
```

If you e.g. type the output queue like above, then you will be shown the specific output queue and you can select the spooled file with option '1' to copy the identification into the screen above. Hit Enter when done.

Please notice that this feature will list **both** the sequence lines of the current output queue and any lines that will be executed in the linked template output queue - if used. The list is shown like below:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT2     Library:   APF3812

Seqnbr F. Form type  Save Jobname    Filename   Device file  Program  UserData
 0001  C  DEMO
          Finish def: DEMOMAIL outq: *INPUT form type: MAIL
 0002  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE

               From template queue AFC_INPUT1  Library APF3812.
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE                    +
Seqnbr Function     Suspend
  3.0









F3=Exit             F5=Service        F13=Fold/Unfold
F15=Subset        F17=Subset by Spooled File
```

When selecting a function the first screen will allow you to enter the spool file attribute(s) used as criteria for executing this sequence line:

```
         Update AFC-functions attached to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812
Seqnbr F. Form type  Save Jobname    Filename   Device file  Program  UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0002  6
          Hold Spooled File




Seqnbr Function   Attributtes of input file for which to execute the function
  1,0    1        Form type  . . . . . . . . . . . . . . . DEMO______
                  Save attribute . . . . . . . . . . . . . ____       *NO, *YES
                  Jobname  . . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .    __________
                  Program that opened file . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .    __________
                  User-specified data  . . . . . . . . . . __________
F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

When entering more than 1 spool file attribute, the selected attributes have to be valid before AFC will execute the sequence line (Logical AND function). If an entry is left blank, the spool file attribute is ignored.

☝ **NOTE** ☝

Many misunderstand the save attribute above. So please read this if in doubt: The save attribute is the CONDITION (just as the other attributes) for executing the line in question! So if you state *YES only spooled files with the SAVE attribute set to *YES will be able to trigger the sequence line. This does NOT affect the attribute of the merged spooled file.

☺ **TIP** ☺

You can use the save attribute to make InterForm400 delete the original spooled files (after merge) if the save attribute is *NO - refer to page 165 for additional information of how to do that.

1=Merge with Overlay

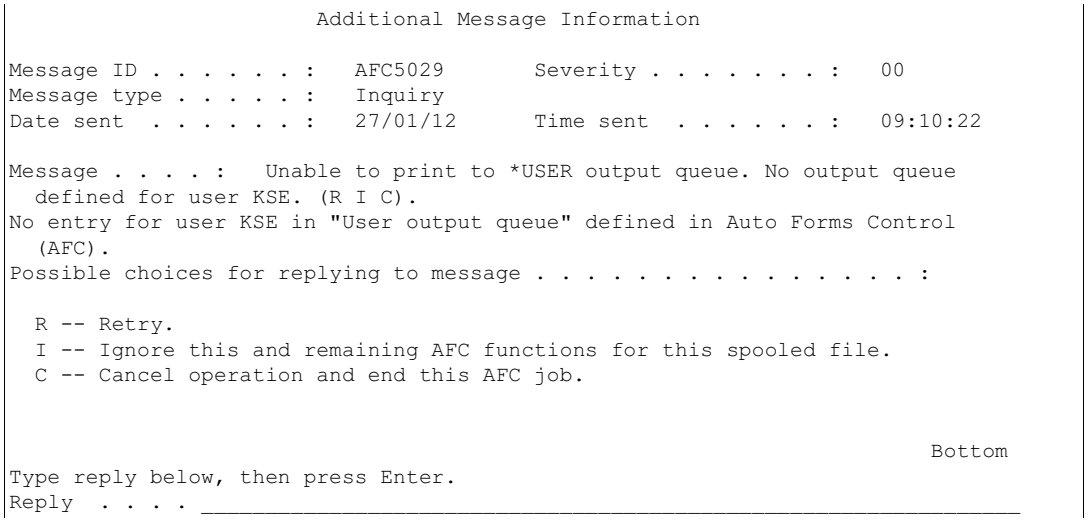
```
         Update AFC-functions attached to output queues            AFC305D

Output queue . . . . :   PRTHP3_AFC
  Library  . . . . . :     QUSRSYS

Seqnbr F. Form type  Save Jobname    Filename   Device file  Program  UserData




Seqnbr Function
  1,0    1                  Merge with overlay

                            Output queue for merged print  . __________
                              Library  . . . . . . . . . .   __________
                            InterForm 400 printer type . . . __________
                            Unicode output . . . . . . . . . *INPUT   *INPUT,*YES
                            Merge overprint lines  . . . . . *NO_     *NO,*YES
                            Find overlay in forms type table  N     (Y N)

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

In this screen the specifications for the output device is entered:

Output queue/ library:

The queue to receive the resulting print out. If a specific queue, Printer type has been defined in the previous screen, the keyword ***DEFAULT** is preset for this field. This is overwritten when entering a queue and a library here. Note that the keyword *DEFAULT apply to both Output queue, library, InterForm400® and printer type.

You can also type ***USER** for this field. With this value the merged spooled file will be created on the output queue specified for this user (the spooled file owner) in option '*7. User output queue*' (Refer to page 326 for details) and in this way the merged spooled files are distributed to the individual users. If the user profile is not found, the default output queue (as specified on page 151) will be used. If both the user is not found and there is not default output queue, then a message is issued in the Auto Form Control job:



To proceed you can then either add the specific user in the table or add a default output queue for the AFC job and answer 'R' or ignore the input spooled file with 'I'.

NOTE

***USER** for the output queue is not allowed for the Light version

Printer type: The printer type (refer to page 478) used for the above printer. Note that the keywords ***DEFAULT** and ***USER** entered for output queue will apply for this setting as well, i.e. the setting for Printer type from the previous screen will be used for ***DEFAULT** and the printer type specified on the user list will be used for ***USER** (refer to page 326 for details).

Unicode output: State ***YES** if you want the merged spooled file always to be a unicode spooled file (that is useful if you e.g. have unicode text constants to be used with a normal non unicode spooled file as input).

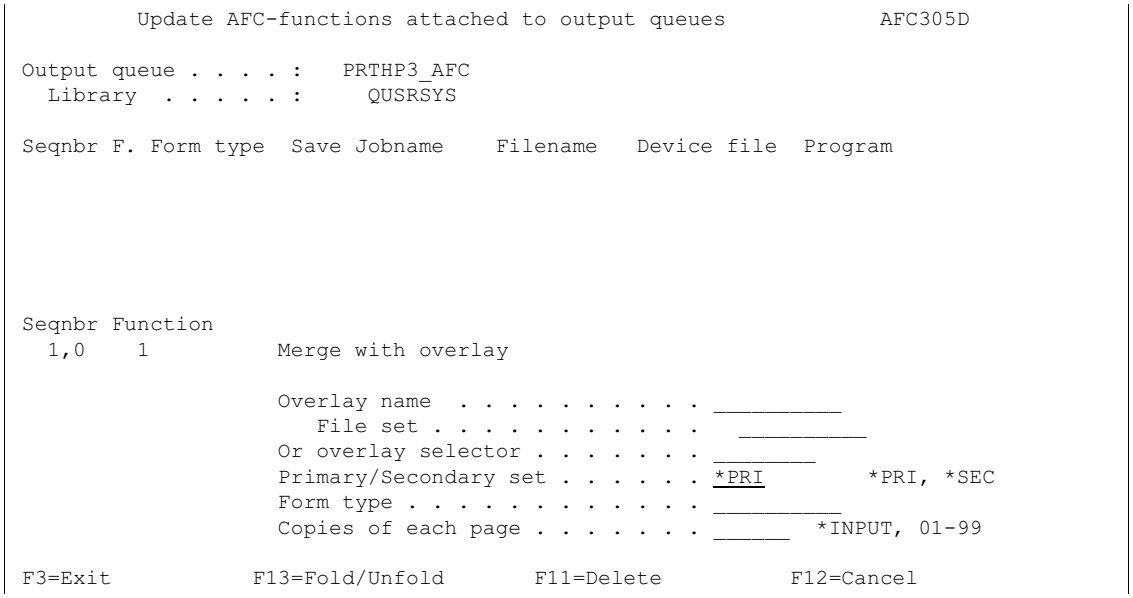
If you use ***INPUT** the merged spooled file will be unicode only if the input spooled file is a unicode spooled file i.e. has USRDFNOPT('IF-UCS2').

Refer to page 52 for more details about unicode.

Merge overprint lines: Specifies, that overprinted lines will be printed as one line. Refer to page 132 for more information.

Find overlay in forms type table: Stating Y will cause the **Forms type table** to be used for the **form type** stated for this entry. See page 197 for information on how to use the **Forms type table**. If stating **N** you will get the below screen.

In the following screen the definitions for the overlay is entered:



Overlay name: The Overlay you want to merge with. Use **F4** to get a list

File set: The file set containing the above overlay.Use **F4** to get a list.

Overlay selector: If the above is not filled in, it means you intend to use an Overlay Selector in order to search the spool data for special conditions, that will select the overlay. See page 136 On how to use the **Overlay Selector**.

Primary/ Secondary Set: This option will decide if the Primary or the Secondary set of copies of an overlay are to be processed. The two sets of copies are defined in **Copy Management** (page 70) if the **Global Setting, Copy Management** is set to **Y**. If this setting is **N** for the overlay, the overlay is regarded as **Primary**. ***PRI** is default for this option.

Form Type: The Form type of the resulting print out. It is recommended to use ***STD** for all output in order to avoid prompting for change of forms from the queue.

Copies: You can decide how many exact duplicates you want of each page in the spool entry. Note that if you want different contents for the duplicates you must define this in **Copy Management** for the overlay, or you can define another sequence line in this AFC definition which processes the same spool entry once more but with a different overlay.

This screen is only shown if you are merging with an overlay or overlay selector for a label printer (i.e. Zebra):

```
Seqnbr Function
  1.0    1        Merge with overlay

                  Labels/Continuous  .  _  1=Labels 2=Continuous
                  Media type . . . . .  _  1=Termo transfer 2=Termo media
                  Print mode . . . . .  _  1=Tear off 2=Rewind 3=Peel off 4=Cut
```

Labels / Continuous: Select **1=Labels** if the media contains of separate labels. select **2=Continuous** if the media is not separated into labels (in this case you would probably select **4=Cut** for the **print mode** parameter).

Media type: Select **1=Termo transfer** if you use a non heat sensitive media otherwise use option **2=Transfer media**.

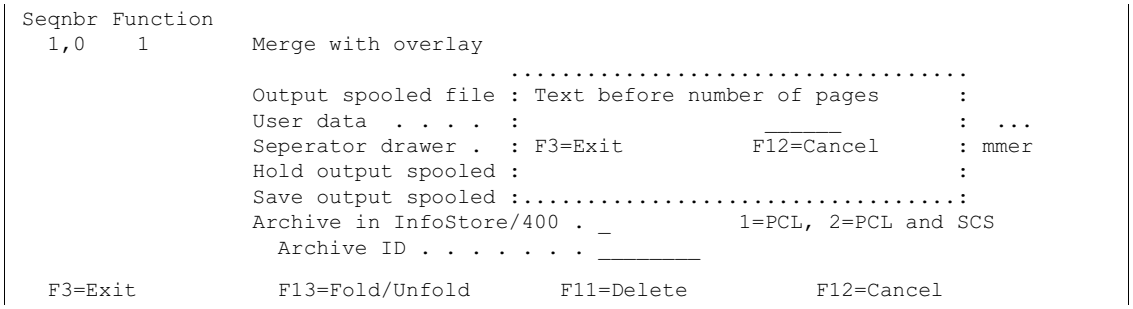
Print mode: **1=Tear off** mean that you will manually tear of the labels. **2=Rewind** can be used for rewinding all printed labels onto another roll. This requires special hardware installed.
3= Peel off will print only one label at a time waiting for the current label to be peeled off. (This also requires additional hardware).
4=Cut (requires hardware cutter) normally cuts the media for each print job unless you use 2=Continuous - then **4=Cut** will cut out each label.

In the following screen the spool attributes for the final output is entered:

```
         Update AFC-functions attached to output queues           AFC305D

Output queue . . . . :   PRTHP3_AFC
  Library  . . . . . :     QUSRSYS

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData




 Seqnbr Function
  1,0    1        Merge with overlay

                  Output spooled file name . __________ *INPUT, Navn
                  User data  . . . . . . . . __________ *INPUT, *JOB, *USER ...
                  Seperator drawer . . . . . _________  *NONE, *DEFAULT, Number
                  Hold output spooled file . ____       *NO, *YES
                  Save output spooled file . ____       *NO, *YES
                  Archive in InfoStore/400 . _          1=PCL, 2=PCL and SCS
                    Archive ID . . . . . . . ________

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

Output spooled file name: This entry controls the spool file name.

User data: You can change the spool file description of the resulting print data, so the spool file can be located on the output queue. By entering ***PAGES**, InterForm400® will display the number of pages included in the output from the merge process in the User data field. When inserting the keyword *PAGES the following field will be displayed:



Here you can type in a help text which will be added before the number of pages as the first 4 characters in the user data field. ***JOB** or ***USER** can also be specified making the user data field contain either the job name or the user profile of the original spool file.

Separator Drawer: See page 154 for explanation. Type ***NONE** to avoid a separator page.

Hold output spooled file: This affects the status of the output spooled file on the queue.

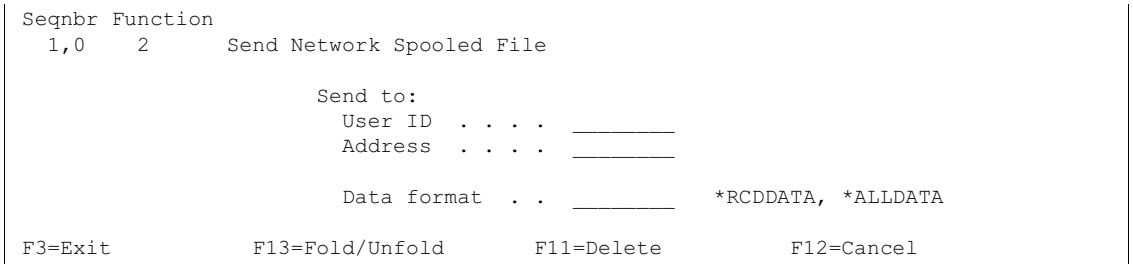
Save output spooled file: This will affect the spool file attribute SAVE of the output spooled file.

Archive in InfoStore/400: InterForm400® automatically detects if InfoStore/400 is installed. If that is the case, then this (and the next) option emerges enabling direct archiving from InterForm400® in InfoStore/400. Here you can decide to archive the merged PCL spool file or both the PCL file and the original SCS spool file.

Archive ID: Archive ID in InfoStore/400, where the spool files are to be stored.

InfoStore/400 is an archiving system developed by Solitas AG.

2=Send Network Spooled File



A spool entry can be sent to another system for processing or a processed job can be sent to another system for printing.

For instance could an AFC output queue have the function **1.Merge with APF3812 overlay** defined, and the receiving output queue for the result is an AFC input queue could have **2.Send Network Spooled File** defined.

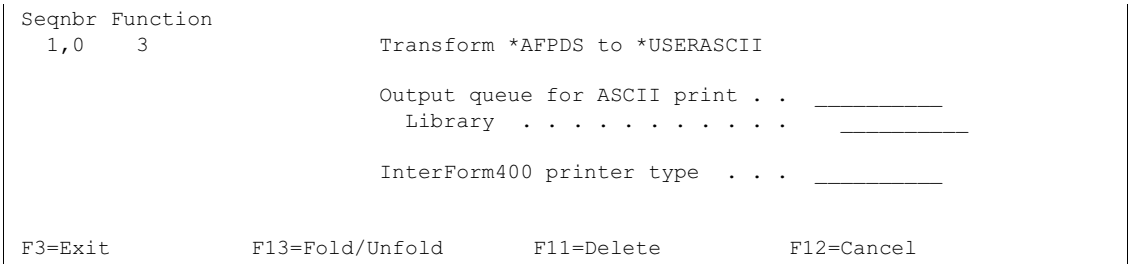
User ID: Use a divided user address from a directory list (see contents using the WRKDIRE command), or a distribution list (see possible distribution lists using the command WRKDSTL).

Address: Refer to the above

Data format: You can either use *RCDDATA or *ALLDATA. *RCDDATA can be used

for *SCS files, While *ALLDATA is required, when sending merged PCL files. For more information refer to the description of the DTAFMT parameter of the OS/400 SNDNETSPLF command.

3=Transform AFPDS to *USERASCII



AFPDS (Advanced Function Printing Data Stream) spool files are made for printer devices with AFP(*YES), which can only be printed out by IPDS printers.. This feature gives the possibility of printing advanced print consisting of lines, frames, different font types etc. directly from an application program. By using this transformation feature it is possible to print out these advanced definitions on an ordinary PCL printer.

Output queue/ library: Output from the transformation will become a spool entry by the type *USERASCII. This output queue must therefore have a **PCL** printer attached which is defined as a ***3812** device. If a specific queue and Printer type have been defined in the previous screen, the keyword ***DEFAULT** will be preset for this field. This is overwritten when entering a queue and a library here. Note that the keyword *DEFAULT apply to both **Output queue**, **library** and **InterForm400® printer type**.

Printer type: A PCL printer type according to the choices listed on page (see page 478).

Note, if you want to make use of this feature to transform AFPDS spool entries into *USERASCII, and these AFPDS spool files are using resource libraries not listed in the system library list, then the APF3812/AUTO_FORM job description must be changed in order to include these libraries in the library list.

💣 WARNING 💣

As the AFPTOASCII command, this option does NOT support selection between identical spooled files. (Where the job ID, spooled file name and spooled file number are all identical for more than one spooled file).

💣 WARNING 💣

*The transformation can not convert **bar codes** and **AFP images** into PCL. These definitions will just be ignored in the process.*

☺ TIP ☺

AFPDS spooled files can also be used as input directly in InterForm400. Then however only the text visible via DSPSPLF will be used while any graphical elements are ignored and are to be added in InterForm400.

4=Copy Spooled File

```
         Update AFC-functions attached to output queues           AFC305D

Output queue . . . . :   PRTHP3_AFC
  Library  . . . . . :     QUSRSYS

Seqnbr Function
  1,0    4        Copy Spooled File

                  New output queue . . . . . .  __________
                     Library . . . . . . . . .  __________
                  Hold output spooled file . . . .  *NO          *NO, *YES
                  Save output spooled file . . . .  *NO          *NO, *YES
                  Owner of new spooled file  . . .  *INPUT       *INPUT, User

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

New Output queue: Output from this process will become a spool entry in the new output queue with the same attributes as the original spool entry. If a default queue has been defined, the keyword ***DEFAULT** will be preset for this field.

Hold output spooled file
This affects the status of the copied spooled file on the receiving queue.

Save output spooled file
This will affect the spool file attribute SAVE of the copied spooled file.

Owner of new spooled file
Use ***INPUT** if you want the new spooled file to be owned by the same user profile as the original spooled file.
It might be handy to specify another user to own the new spooled file if you e.g. want to prevent the new spooled file to be deleted before it is archived.

5=Move Spooled File

```
 Seqnbr Function
  1,0    5     Move Spooled File

               New output queue . . . . . .  *DEFAULT     Name,*DEFAULT,*USER
                 Library  . . . . . . . . .  __________
               Hold output spooled file . . . .  *NO          *NO, *YES
               Save output spooled file . . . .  *NO          *NO, *YES



F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

New Output queue: Output from this process will move the spool entry to a new output queue. Following sequence lines will therefore not process the spool entry. If a default queue has been defined for this output queue (see page 152), the keyword ***DEFAULT** will be preset for this field.
The value ***USER** indicates, that the spooled file should be moved to the preferred queue of the spooled file owner. Refer to page 326 for details of the **user output queues** and an example.

> ☝ **NOTE** ☝
> If ***USER** is used and the specific user is not on the list (see page 326) the **5=Move** command is ignored, an exit is performed and the spooled file remains in the output queue.

NOTE

***USER** is not allowed for the InterForm400 Light version.

Hold output spooled file: This affects the status of the moved spooled file on the receiving queue.

Save output spooled file: This will affect the spool file attribute SAVE of the moved spooled file.

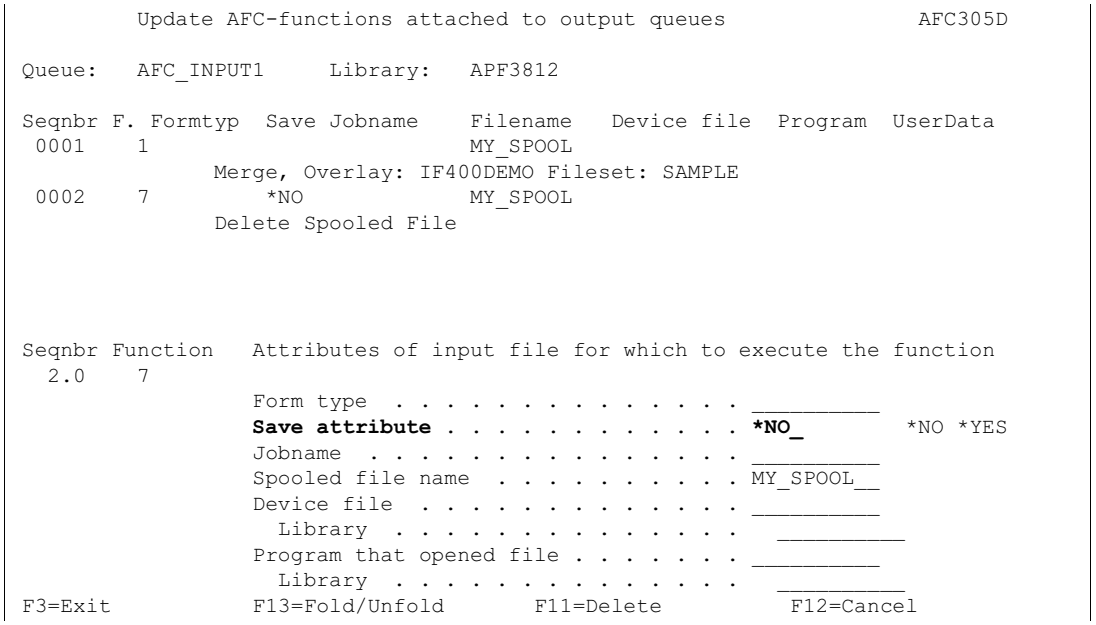
6=Hold Spooled File

This function holds the **original input spool entry** for the AFC definition.

7=Delete Spooled File

This function deletes the **original input spool entry** for the AFC definition.

Hint: If you use the Save attribute of the spooled file as a condition for the delete you can make InterForm400 behave a bit like a normal writer job: Delete the spooled file if the save attribute is *NO after it has been merged:



8=Call Program

```
Seqnbr Function
  1,0    8     Program call

               Program name . . . . . .  FUNKT 8
                 Library  . . . . . . .    MYLIB
               User profile . . . . . .  AFCOPER      *OWNER,
                                                     user profile
               Parameter format . . . . . 1          1, 2

F3=Exit          F13=Fold/Unfold       F11=Delete          F12=Cancel
```

This function gives you the possibility of letting Auto Forms Control perform operations that are not contained in this system. It could for instance be to store spooled print in a spool archive. Other useful features is to make a merge using the APF3812 CL command in order to create a PCL file in the folder system as seen on page 512, or even E-mail the merged file as a PDF file using the MRGSPLFPDF command (see page 449).

Program name: A program to be called at this point

The program can be called with two different parameter formats:

Parameter format 1:
The program can be called with the following 7 parameters regarding the relevant spool entry:

Job name	*CHAR 10
User	*CHAR 10
Job number	*CHAR 6
File name	*CHAR 10
File number	*CHAR 6
Output queue	*CHAR 10
Library	*CHAR 10

An example of an exit program can be seen in the source member, FUNKT_8 in source file APF3812/APISRC.

Parameter format 2:

SPLA0100	*CHAR 1537

SPLA0100 is a data structure use e.g. by the QUSRSPLA API. The data structure and a complete example of such a program can be found in source member, FUNKT_8_2 in source file APF3812/APISRC. The data structure includes as good as any information of the spooled file.

Format 2 is recommended and needed, if you want to handle identical spooled files, that only differ in the identification when you look at the system that created the spooled file or the creation date and time.

If you have multiple identical spooled files, and you use format 1, then you will get this error message in the Auto Forms Control job:

```
Message ID . . . . . :   APF5050       Severity . . . . . :   00
 Message type . . . . . :   Inquiry

 Message . . . . :   Another spooled file with identical job and spooled file
   number exists. (C R I)
 Cause . . . . . : Unable to use parameter format 1 for the PRSCOPY program
   when another spooled file with identical job and spooled file number exists.
 Possible choices for replying to message . . . . . . . . . . . . . . . :
   C -- End AFC job for this output queue in error.
   R -- Retry (after the duplicate spooled file has been deleted manually).
   I -- Skip this step to create the duplicate spooled file.
```

User profile: The user profile under which the user exit program will run.

If e.g. a merge is done by use of the APF3812/APF3812 command the same user profile will be the owner of the merged spooled file.

InterForm400 will not call the program unless it is owned by QSECOFR. If the program is not owned by QSECOFR when you add it you will be offered an possibility to change the owner (if you are authorized) with this window:

```
    Security change required                          OWN600D

In order to prevent unauthorized programs from being used as
exit programs, the exit program must be owned by QSECOFR.

Press F10 to change the ownership of the program to QSECOFR.
Press F3 or F12 to cancel.


Program name . . . . . :  TEST
  Library  . . . . . :    KSE

Creation date/time . . :  24/01/11  18:00:45
Current owner  . . . . :  KSE



F3=Exit   F10=Change owner   F12=Cancel
```

Here you can simply press F10=Change owner to confirm that the program owner should be changed. The same screen is shown in InterForm400, whenever you try to add a call to a user program not owned by QSECOFR. (Also for e.g. split exit programs)

💣 WARNING 💣

*All exit programs called by InterForm400® **must** be owned by QSECOFR. If it is not the AFC job will halt with an error message. Change the owner with the command:*
*CHGOBJOWN OBJ(library/program) OBJTYPE(*PGM) NEWOWN(QSECOFR)*

☺ TIP ☺

*In order to be able to change the owner of a program into QSECOFR, it is enough to have *ADD authority for the QSECOFR user profile. You can give a user profile this via this command:*
*GRTOBJAUT OBJ(QSECOFR) OBJTYPE(*USRPRF) USER(user profile) AUT(*ADD).*
*Notice however that if the program is adopting the authority from the owner, then *ALLOBJ and *SECADM is required in order to change the object owner.*

9=Exit

This function will cause all remaining AFC functions (sequence lines) to be skipped.

If you want to insert AFC functions, that are to be executed for all spooled files not specifically

handled in previous lines you could use this function. Just after handling a specific spooled file insert this function to exit from AFC.

Example:
Below we have defined, that spooled files with form type '**DEMO**' should be merged with overlay '**IF400DEMO**', spooled files with form type '**DEMO2**' should be merged with overlay '**RULER**' and all other spooled files should be moved to output queue, PRT01 where they will be printed.

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT1     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0002  9  DEMO
          Exit
 0003  *

 0004  1  DEMO2
          Merge, Overlay: RULER Fileset: SAMPLE
 0005  9  DEMO2
          Exit
 0499  *

 0500  5  Move spooled file, new outq: PRT01 library: QUSRSYS



F3=Exit             F5=Service        F13=Fold/Unfold
```

A=Change attributes

```
Seqnbr Function
  1,0    A                Change attributes

                         Form Type  . . . . . __________ Form type, *SAME
                         User data  . . . . . __________ User data, *SAME

                         Restart with sequence no. 1   _   (Y N)


F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

With this you can change FORMTYPE or USRDATA attributes of the input spooled file.

The idea of changing the form type is the requirement for a spool entry, which has been processed under e.g. the overlay name INVOICE to be run through the statements defined for the overlay SHIPPING. If the original spool entry had form type **Invoice** a sequence line **1.Merge with InterForm400® overlay** would have made one printout. After this sequence line you change the forms type of the original spool entry to **Shipping** which will cause another **1. Merge with InterForm400® overlay** to add the SHIPPING overlay and produce a new print-out.

Form Type	The new form type assigned to the original input spool entry.
User data	The text description attached to a spool entry when viewing an output queue. Changing of USRDTA will normally only be done to indicate that a spool entry has been processed.

Remember to state 'Restart with sequence no. 1 = Y' if you want Auto Forms Control to react on the new form type.

B=Split spooled file

```
Seqnbr Function
  1,0    B                 Split spooled file

                           Split definition name __________




 F3=Exit          F4=prompt                    F11=Delete          F12=Cancel
```

This function is used to split a spooled file into several separate spool files which can be processed independently.

A **Split definition** must exist before this function can be selected. See **Split definitions** on page 199 for more information.

> **WARNING**
>
> *Make sure, that you are not creating a loop in Auto Forms Control when you insert a split definition. If you e.g. create new spooled files with a split definition and these new spooled files are placed back on the same outq, then the new spooled file should **NOT** be able to trigger the split definition again...*

C= Prepare for Finishing

```
Seqnbr Function
  1,0    C                  Prepare for Finishing

                            Finish definition name . . . . .  __________
                            Output queue for prepared print   *DEFAULT__
                              Library  . . . . . . . . . . .    __________
                            Form type  . . . . . . . . . . .  __________


 F3=Exit          F4=prompt                     F11=Delete          F12=Cancel
```

This function is used to pre-process an SCS spool entry in order to insert information for the Finishing Equipment. Refer to section **Finishing Definitions** page 214 for more information.

Finishing Definition Name: The Finishing definition name. Use F4 to select from a list.

Output queue/ library: Output from the pre-process will be a new SCS spool entry. If a default queue has been defined, the keyword ***DEFAULT** will be preset for this field. This is overwritten when entering a queue and a library here. ***INPUT** in this field Indicates that the new spool entry must be written to the same output queue where the input spool entry exists.

As the new spooled file afterwards will be input to a merge operation, *INPUT will often be appropriate. Note that the keyword *DEFAULT and *INPUT apply to both **Output queue** and **library**.

> **WARNING**
>
> *Even though ***DEFAULT** is the default value it is most likely WRONG. *DEFAULT will place the temporary spooled files on the outq where the printer is attached and making it impossible to make them run through the P=Send E-mail function.*

Form type: The form type entered here should be used as condition for a **1. Merge with overlay** following this AFC definition. The formtype could typically be **FNSHREADY** (Finish ready).

If you use an E-mail finishing definition this screen will appear:

```
Seqnbr Function
 10.0    C        Prepare for Finishing

                            Prepare for E-mail requires settings for
                            print that will not be send.
                            Output queue non E-mail print  .  __________
                              Library  . . . . . . . . . . .    __________
                            Form type  . . . . . . . . . . .  __________


F3=Exit                                                 F12=Cancel
```

On this screen you specify on which output queue you want to place the pages, that cannot be e-mailed (no receiver was found). This should normally be an AFC monitored output queue so that a InterForm400® merge and print can be done.

> **WARNING**
>
> *Make sure, that you are not creating a loop in Auto Forms Control when you insert a finishing definition. If you e.g. create new spooled files with a finishing definition and these new spooled files are placed back on the same outq, then the new spooled file(s) should **NOT** be able to trigger the finishing definition again...*

D=Sort Spooled File

```
Seqnbr Function
  2,0    D                 Sort Spooled File

                           Sort definition name . . . . . _________
                           Outque for sorted print  . . . . *DEFAULT__
                             Library  . . . . . . . . . . .   _________
                           Form type  . . . . . . . . . . . _________


 F3=Exit                                       F11=Delete      F12=Cancel
```

This function is used to sort the spool entry accoding to criteria defined in a Sort Definition. Refer to section **Sort Definitions** page 313 for more information.

Sort Definition Name: The Sort definition name.

Output queue/ library: Output from the Sort process will be a new SCS spool entry. If a default queue has been defined, the keyword ***DEFAULT** will be preset for this field. This is overwritten when entering a queue and a library here. ***INPUT** in this field Indicates that the new spool entry must be written to the same output queue where the input spool entry exists.

As the new spooled file afterwards will be input to a merge operation, *INPUT will often be appropriate. Note that the keyword *DEFAULT and *INPUT apply to both **Output queue** and **library**.

Formtype: The formtype entered here should be used as condition for a **1. Merge with overlay** following this AFC definition. The formtype could typically be **SORTED**.

> **WARNING**
>
> *Make sure, that you are not creating a loop in Auto Forms Control when you insert a sort definition. If you e.g. create a new spooled files with a sort definition and these new spooled files are placed back on the same outq, then the new spooled files should **NOT** be able to trigger the sort definition again...*

F=Change Writer

```
 Seqnbr Function
   2,0    F                  Change writer

                             Writer name  . . . .  __________  Name,*OUTQ
                             Form type  . . . . .  __________


F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

Writer name: The name of the writer to change. When stating ***OUTQ** the writer attached to the output queue specified in the default settings for the AFC definition will be used.

Formtype: The formtype which the writer program will be restricted to process. All other formtypes will be left for InterForm400® to process.

This function makes it possible to use the same OUTQ for both input to and output from **InterForm400®**, and in cases where you have to use more than one type of paper and need to receive a message for changing paper.

In cases where you only use one type of paper in the printer you place an AFC function **F=CHGWTR** and change the formtype to e.g. ***STD**. This will restrict the writer to process spool entries of this type only. The next AFC function must be **9=EXIT** conditioned by formtype ***STD**. This will cause InterForm400® to stop processing print jobs of this type, and leave them for the System i to print normally.

If you actually use more than one type of paper in your printer, and want to get the message to change forms in the printer, then you can define a **F = CHGWTR** for each formtype you want to receive a message for changing paper.

For instance, if you want the formtypes ***STD** and **IF400** to be used for output to your printer, while other formtypes should be used for input conditions to other AFC functions, the following 4 AFC defintions should be made in the beginning:

1. For formtype=*STD, use F=CHGWTR to change formtype to *STD
2. For formtype=*STD, use 9=EXIT
3. For formtype= IF400, use F=CHGWTR to change formtype to IF400
4. For formtype=IF400, use 9=EXIT

Note that this function can be substituted by a more efficient method as described on page 38.

☺ **TIP** ☺

*Using option **F** can sometimes fail to change the writer job, if the printer is very fast. Fast printers might print out before Auto Forms Control can get to the print. Therefore it is recommended to use the more efficient way as described on page 38.*

G=Archive to MultiArchive/400

This option is only visible when the application, InterArchive library MLTARC400 is detected on the system. The option archives the actual spooled file with the InterArchive command FILRPT.

```
Seqnbr Function
  3,0    G                 Archive to MultiArchive/400

                           Archive name . . . . _____
                           Item type  . . . . . _____________________




F3=Exit                                                  F12=Cancel
```

Note: The option G is not supported for duplicate spooled files. If there are multiple spooled files with the same combination of job name, job number, user profile, spooled file and spooled file number.

H=Archive in InfoStore/400

This option opens up, when InfoStore/400 is installed on the same System i as InterForm400®. You can use this to archive *SCS spooled files in InfoStore/400.

```
Seqnbr Function
  1.0    H        Archive in InfoStore/400

                           Archive ID . . . . .  _______________
```

For archiving both PCL and *SCS spooled files see page 162.

InfoStore/400 is an archiving system developed by Solitas AG, Read more about InfoStore/400 on http://www.solitas.com.

P = Send PDF E-mail / Fax

```
Seqnbr Function
  1.0    P        Send spooled file as PDF email / Fax

                  Overlay name . . . . . .  __________
                    File set . . . . . . .    __________
                  or overlay selector  . . .  ________
                  Primary/Secondary set  . . .  *PRI         *PRI, *SEC
                  Unicode output . . . . . .  *INPUT       *INPUT, *YES
                  Merge overprint lines  . . .  *NO         *NO, *YES
                  Color support  . . . . . .  *YES         *NO, *YES
                  Compress text  . . . . . .  *NO          *NO, *YES
```

```
1,0  P
                User profile to run job  . . .  *SPLFOWNER   *SPLFOWNER,
                                                            user profile
                Hold email . . . . . . . . . .  *NO         *NO, *YES
                Save email . . . . . . . . . .  *NO         *NO, *YES

                Print PDF-file . . . . . . . .  *YES        *NO, *YES

1,0  P
                Output queue . . . . . . *DEFAULT    Name, *DEFAULT, *INPUT
                  Library  . . . . . . .
                Form type  . . . . . . . *STD
                Copies . . . . . . . . . *INPUT      *INPUT, 1-255
                Output spooled file name PDF_PRINT   *INPUT, Name
                Print data stream  . . . *PCL        *PCL, *PDF
```

This function is used to distribute E-mails. Note, that the spool file first has to be handled by a E-mail finishing definition before this function and that this P function should be triggered by the PRSPRINT spooled file only (which is generated by the email finishing definition).

Use **Color** support to tell InterForm400 if you want to attach black/white PDF files or color PDF files to the e-mails that are sent.

The **Compress text** option can compress the text inside the PDF file, but processing will take a bit longer.

You can tell InterForm400 to generate the emails while running as a **specific user profile**. That can be necessary if you e.g. want the email to be placed in a specific outbox subfolder, which restricted authority.

If you **hold** the email (not supported for IBM SMTP), you can check out the resulting email via WRKMAILLOG before you decide if the email should be sent or not.

The **save** option will save a copy of the email in the IFS in /APF3812Mail/Log. This directory is not cleared by the APF3812/CLRMAILLOG command, which you should run on a regular basis.

The options on the last screen above are only shown if you select *YES to print the PDF file. If so you can also specify the print data stream (PCL or PDF). Please notice that not all printers supports the PDF print data stream and that the requirements for RAM in the printer is higher when printing PDF compared to PCL.

Refer to the description of the other fields under 1=Merge with overlay on page **158**. See page **231** And **267**. Refer to page **581** for information of how to set up SMTP on the System I.

NOTE

In order to get PDF output you need to purchase the PDF module or the classis package for InterForm400.

N = PDF File naming and -save

```
3.0    N        Save spooled file as PDF file in...

                Overlay name . . . . . .  IF400DEMO_
                  File set . . . . . .      SAMPLE____
                or overlay selector  . . . . .  ________
                Primary/Secondary set  . . . .  *PRI          *PRI, *SEC
                Unicode output . . . . . .  *INPUT       *INPUT, *YES, *PDFA
                Merge overprint lines  . . . .  *NO_          *NO, *YES
                Color support                   *YES          *NO, *YES
                PDF File naming definition . .  KSE_PDF___
```

```
 Seqnbr Function   Save spooled file as PDF file in ...
 3.0    N

                  Compress text . . . . . .   *NO_          *NO, *YES
                  User profile to run job . . .   *SPLFOWNER  *SPLFOWNER,
                                                              user profile




F3=Exit                                                    F12=Cancel
```

This function executes a PDF file naming finishing definition. It will create PDF files, that are the result of a merge with the specified overlay or overlay selector. Refer to page **254** for more information of the PDF file naming finishing definition, read the description of P=Send PDF E-mail above and the common parameters under 1=Merge with overlay on page **158**.

For the parameter **Unicode output** you can use the value '***PDFA**' to create PDF files, that are PDF/A-1b compliant. Refer to page **457** for information of how what is required for creating PDF/A-1b compliant PDF files.

The parameter: **Compress text** indicates if you want to compress the text in the resulting pdf file. *NO is default (to be backwards compatible). If the pdf file contains a lot of text (e.g. as in a joblog) the compression can be as high as 70%.

The last parameter: **User profile to run job** defines under which user profile this function will run and thus also the user profile under which the PDF files will be created. If the spooled file owner e.g. does not have enough authority to create the pdf files you can here specify a fixed user profile with sufficient authority instead of *SPLFOWNER.

NOTE

In order to get PDF output you need to purchase the PDF module or the classic package for InterForm400.

W = Print to Windows printer

This option is used with the WinPrint module to print the output of a merge via a windows PC to any connected printer on that PC. Refer to the WinPrint manual for details of this module.

The merge is defined as any other merge:

```
Seqnbr Function   Print to Windows printer
  1.0    W
                  Overlay name . . . . . . . . .  IF400DEMO
                    File set . . . . . . . . . .    SAMPLE
                  or overlay selector  . . . . .
                  Primary/Secondary set  . . . .  *PRI          *PRI, *SEC
                  Unicode output . . . . . . . .  *INPUT        *INPUT, *YES
                  Color support                   *YES          *NO, *YES

F3=Exit             F4=Prompt                                F12=Cancel
```

On the next screen you are prompted for the PC and the printer on the selected PC. You can prompt both with F4:

```
Seqnbr Function   Print to Windows printer
  1.0    W
                  Windows PC  . . . . . . . . .

                  Windows printer . . . . . . .



F3=Exit             F4=Prompt                                F12=Cancel
```

X = Create XML file

With this option you can generate XML files with InterForm400 by using an XML finish definition:

```
Seqnbr Function
  4.0    X        Create XML file

                  Finish definition name . . . .  XML_DEMO

                  User profile to run job . . .   *SPLFOWNER  *SPLFOWNER,
                                                              user profile
```

Refer to page 277 to see how you define an XML definition. You can chose to run the Auto Forms Control job under a specific user profile, this is handy if e.g. only a few users have write authority to the output directory.

* = Comment

```
Seqnbr Function
  1.0    *        Comment

                  ____________________________________________________________
```

Use comment lines to great extent in order to keep track of what the AFC functions do. It makes future changes quicker and more safe.

Convert SAP spool entries (datatype *IBMSCS)

The program **SAP100C** delivered with **InterForm400®** is used to convert the SAP systems propriatary spool format with datatype *IBMSCS to ordinary spool entries with *SCS. The program can be called from the AFC function **8=Call Program**.

The SAP format is intended to be additionally formatted by the native PCL drivers embedded in SAP, and can not be sent to a printer directly.

Control commands (CR, LF, FF) in SAP spool entries are formatted as text and not as hex values. For instance is 0Dh0Ch formatted as F0hC4hF0hC3h. SAP generated spool entries has no meaningful attributes like page length/width. Instead the formtype indicates the format (eg. DINA4 or 51X132). **InterForm400®** does not use this information as the page size definition is controlled by the overlay.

The source code for the program is placed in the file SAPSRC in the APF3812 library, as there might be other flavours of SAP print (*IBMSCS), which has not yet been considered, and which a programmer may need to adjust to.

SAP spool entries (datatype *IBMSCS2)

The latest releases of SAP software is creating spool file format with datatype *IBMSCS2, which is the same as *SCS and can by used directly in InterForm400®.

Generating multiple copies in input spool entries.

When defining a finishing definition for which you want to use an overlay containing Copy Management, you will need to enter an overlay containing the number of copies in the Pre-process definition for the Finishing definition. Alternatively the program **APF3812/PRSCOPY** delivered with **InterForm400®** can be used to create a new SCS spool entry with multiple copies of selected pages, from an input spool entry with data type *SCS. The program can be used with AFC function **8=Call Program**.

The input spool entry should have a number from 1-9 placed in position 1 line 1, which PRSCOPY takes as information on how many copies to generate. The copies will be placed immediately after the original in the new spool entry. Page one of the copies (the original) will have a “C” placed in position 1 line 1. This field can be used for selecting specific forms using the “Overlay Selector”. Pages with a blank or characters other than 1-9 in position 1 line 1 will be copied to the resulting spool entry as they are.

The resulting spool entry can be recognised by the characters “PRS”, which has been added as the last 3 characters of the formtype. If the original form type name used all available characters, the last 3 characters of the form type will be replaced with “PRS”.

The PRSCOPY program is called in this manner:

```
Seqnbr Function
  5,0  8          Program call

                       Program name . . . . .  PRSCOPY      Name
                         Library  . . . . . .    APF3812     Name, *LIBL
                       User profile  . . . .   *OWNER       *OWNER,
                                                            user profile
                       Parameter format . . .  2            1, 2
```

It is recommended to only call the PRSCOPY program with the parameter format =2, which has been implemented with the 2016 versions of InterForm400.

Format 2 enables InterForm400 to handle identical spooled files (i.e. spooled files with identical ID - except system name and/or creation date). If you are trying to call the program with parameter format 1 and there are more than one spooled file with the same ID, then the AFC job will stop with this error:

```
Message ID . . . . . :   APF5050       Severity . . . . . :   00
 Message type . . . . . :   Inquiry

 Message . . . . :   Another spooled file with identical job and spooled file
   number exists. (C R I)
 Cause . . . . . : Unable to use parameter format 1 for the PRSCOPY program
   when another spooled file with identical job and spooled file number exists.
 Possible choices for replying to message . . . . . :
   C -- End AFC job for this output queue in error.
   R -- Retry (after the duplicate spooled file has been deleted manually).
   I -- Skip this step to create the duplicate spooled file.
```

☺ TIP ☺

*A simular function can be obtained by using Copy Management and stating *VAR as the number of copies. Refer to page 78 for more information.*

Auto Forms Control Hints

Some are surprised of the way Auto Forms Control handles the incoming spooled files. A few situations causing confusion for some are listed below:

How to stop processing spooled files

If you have made an erroneous setup in Auto Forms Control causing a situation (e.g. by a bad split or sort definition), where it just keeps creating new spooled files you might want to stop this process. One way could be to end the Auto Forms Control job, but when you restart the job the loop will continue to work on the waiting spooled files.

The reason is, that Auto Forms Control is using a data queues connected to each output queue. So if you want to stop such a situation you can e.g. change the definitions for the outq, delete the spooled files or clear the used data queue with the command CLRDTAQ. The data queue is named the same as the monitored output queue and is placed in the same library. Remember however that clearing the data queue will make InterForm400 ignore ANY spooled file on the output queue and you need to hold and release each spooled file on the output queue, that should be handled.

Changing spooled file attributes has no effect

A setup like below is used:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT1     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  A  *STD
          Change attributes, Form type: NEWFORM User data: *SAME
 0002  1  NEWFORM
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0003  6
          Hold Spooled File


Seqnbr Function     Suspend
  1.1









F3=Exit             F5=Service        F13=Fold/Unfold
```

The form type of the spooled file is changed in line 1 to NEWFORM, but still the merge in the second line is NOT triggered. Why?

If you get the problem above then please remember, that when the spooled file arrives at the output queue the spooled file attributes are retrieved once and used for ALL the sequence lines. If you want the changed spooled file attribute to be ‘seen’ by Auto Forms Control, then you need to hold and release the spooled file to make Auto Forms Control ‘see’ the change. That can above be done by stating a ‘Y’ for restarting in the function A:

```
Seqnbr Function
  1.0    A        Change attributes

                  Form type  . . . . . .  NEWFORM    Form type, *SAME
                  User data  . . . . . .  *SAME      User data, *SAME

                  Restart with sequencenbr 1 Y      (Y N)



F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

If you change a spooled file attribute via a function 8=Call Program function in Auto Forms Control you also need to hold and release the spooled file for this change to take effect in InterForm400.

Auto_Form jobs does not start

If you have merged many spooled files in InterForm400 and you have not restarted the Auto_form subsystem for quite a while, then you might get into this situation when you restart the subsystem: The job called AFCSTART keeps on running, and the other AFC jobs does not start.

When you look into the open files you might see that the AFCSTART job is running on a file called OUTLOGP.

The file is used for listing ALL merged spooled files and the main purpose is to log the number of pages in a spooled file you if you have merged the spooled file by use of a PJL printer type, then information in this file is available for a possible change of the page range via the APFWRKOUTQ command.

The solutions to this situation are these:
1) Make sure that you restart the auto_form subsystem more frequently. This will decrease the startup time.
2) If you are 100% sure that you do not need the special page range option on the APFWRKOUTQ command you can also clear the file APF3812/OUTLOGP to make all the jobs start faster.

Getting Familiar with Auto Forms Control

The following sections are structured so you will be brought through a process of creating AFC definitions for processing of the **IF400DEMO** from the **Getting Started** section.

The chapter requires you have:

- Performed step **13**, **14**, **18** and **19** in the **Getting Started** section.
- A **PCL5 capable printer** attached and configured.
- Not made changes to the AFC definition **AFC_INPUT1**.

The following two examples will cover the following:

Example 1: We will edit the existing AFC definition AFC_INPUT1, to move spool files with type *STD to the output queue AFC_OUT1 without adding an overlay, and to move spool files with formtype DEMO (the sample spool entry) to the queue AFC_INPUT2 after doing a merge.

Example 2: We will define a new AFC definition AFC_INPUT2 and use the same queue as input and output for Auto Forms Control. We will make a merge overlay definition for processing printjobs with formtype DEMO (the sample spool entry). These printjobs are automatically transferred from AFC definition AFC_INPUT1 by the definitions made in example 1.

Example 1, Using Separate queues for Input and Output

Step 1. Checking the Writer

First we will assign our writer to the correct queue.

Printer Writer (Twinax, or TCP/IP (TN5250E or Raw Socket))

If the printer writer is already started and attached to another output queue, the following command will change **PRTXXX** to be attached to output queue **AFC_OUT1**. (If the writer is not started just replace CHGWTR with STRPRTWTR)

```
CHGWTR WTR(PRTXXX) OUTQ(APF3812/AFC_OUT1)
```

Remote Writer (TCP/IP LPD):

You can not change a remote writer to use another queue as it is the queue itself which contains the definition of the writer (IP address). You should instead follow the procedure explained on page 475 **Attaching through a TCP/IP Print Server** in order to configure queue **AFC_OUT1** as a remote writer.

Step 2. Checking if Auto Forms Control is running

Select option **5. Work with Auto Forms Control** on the main menu and enter menu item **12. Work with active subsystem AUTO_FORM**. If the sub-system is not active, return with **F3** and start the subsystem with option **10. Start AUTO_FORM** subsystem.

If the AFC_INPUT1 job does not start up with the subsystem you can manually start it by selecting **'1. Functions attached to Output Queues'** from the AFC menu followed by option **'8=Start AFC-job'** for the AFC_INPUT1 outq.

```
                          Work with Active Jobs                    INTER01
                                                              27.02.98  10.20.02
CPU %:    9,7     Elapsed time:   00.03.36     Active jobs:   131

Type options, press Enter.
  2=Change   3=Hold   4=End   5=Work with   6=Release   7=Display message
  8=Work with spooled files   13=Disconnect ...

Opt  Subsystem/Job  User        Type  CPU %  Function        Status
__   AUTO_FORM      QSYS        SBS     0,3                  DEQW
__     AFC_INPUT1   AFCOPER     BCH     0,2  PGM-AFC700      DEQW









                                                                        Slut
Parameters or command
===>_____________________________________________________________________
F3=Exit      F5=Refresh   F10=Restart statistics   F11=Display elapsed data
F12=Cancel   F23=More options   F24=More keys
```

Use this screen to verify that your AFC jobs are running, and for replying on messages in error situations.

Step 3. Entering Auto Forms Definition AFC_INPUT1

Now enter option **1. Functions attached with to Output Queues** and select the AFC definition AFC_INPUT1.

```
         Work with Auto Forms Control output queues                AFC300D

Start with . . . . . .

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display   8=Start AFC-job   9=End AFC-job

Opt    Outq        Library      Description
 2      AFC_INPUT1  APF3812      Job for sample printout









                                                                        End

F3=Exit        F5=Refresh        F6=Add                          F12=Cancel
```

Note that it is not necessary to end the AFC job in order to make changes to an AFC definition. Changes will take effect immediately.

```
                  Update Auto Forms Control Definition              AFC302D

Output queue . . . . . :  AFC_INPUT1
  Library  . . . . . :    APF3812

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  Job for sample printout___________________
  Autostart job  . . . . . .  Y               (Y N)
  Code page  . . . . . .  *SYSVAL          Number, *SYSVAL      F4=List

  Default output output queue and printer type
  Output queue . . . . . .  AFC_OUT1__
    Library  . . . . . .    APF3812___
  InterForm 400 printer type .  HP4_______


  Optional template AFC-definition to be executed after this definition
  Output queue . . . . . .  __________
    Library  . . . . . .    __________



F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

We do not make changes to these settings but press Enter once more.

Step 4. Defining move of print jobs with type *STD

On the next screen we notice that we have two definitions already.

```
         Update AFC-functions attached to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0002  6
          Hold Spooled File




Seqnbr Function
 ____   _









F3=Exit             F5=Service        F13=Fold/Unfold
```

The first line defines the merge and printing of the demo spool entry used in the **Getting Started** section.

The second line defines that the demo spool entry should be **Held** after processing. That means the demo spool entry will remain in the queue after it has been used to create a new spool entry with overlay which is sent to the printer.

We now add an AFC function as the first line. We type **0,1** and press **Field Exit**. Here we select function **5 move spooled file**. We press **Enter** and we define the criteria ***STD**, which means this AFC function should only be processed for spool entries having formtype ***STD**:

```
         Update AFC-functions attatched to output queues             AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0002  6
          Hold Spooled File




Seqnbr Function
  0,1    5        Move Spooled File

                  New output queue . . . . . .  AFC_OUT1__     *DEFAULT, *USER
                    Library  . . . . . . . . .    APF3812___
                  Hold output spooled file . . . .  *NO_          *NO, *YES
                  Save output spooled file . . . .  *NO_          *NO, *YES



F3=Exit           F13=Fold/Unfold                          F12=Cancel
```

We want to send all spool entries with formtype ***STD** to the output queue **AFC_OUT1** without adding any overlay. When we press Enter, we see the AFC function appear as the first line:

```
         Update AFC-functions attatched to output queues             AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  5  *STD
          Move spooled file, new outq: AFC_OUT1 library: APF3812
 0002  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0003  6
          Hold Spooled File


Seqnbr Function
  0,1




F3=Exit             F5=Service        F13=Fold/Unfold
```

Step 5. Defining move of Print jobs with Formtype DEMO

Currently sequence line 3 defines that all files should be put on hold when they have been processed by line 1 and 2.

This means that currently the sample spool entry with form type DEMO is put on hold and stays in the queue. We now want to move this type of spool file to queue AFC_INPUT2, so it can be processed by the AFC definition for that queue.

We enter a sequence line between sequence line 2 and 3, meaning that we will move the demo spool entry, after it has been used to create a merged spool file on queue AFC_OUT1, but before it would get put on hold by sequence line 3:

We enter sequence line **2,1** and press **Field Exit**. We enter form type DEMO as the criteria for executing the move operation and we press **Enter**:

```
         Update AFC-functions attatched to output queues             AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  5  *STD
          Move spooled file, new outq: AFC_OUT1 library: APF3812
 0002  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE
 0003  6
          Hold Spooled File


Seqnbr Function
  2,1    5        Move Spooled File

                  New output queue . . . . . .  AFC_INPUT2    *DEFAULT, *USER
                    Library  . . . . . .    APF3812___
                  Hold output spooled file . . . .  *NO_          *NO, *YES
                  Save output spooled file . . . .  *NO_          *NO, *YES



F3=Exit           F13=Fold/Unfold                          F12=Cancel
```

Print jobs having neither *STD nor DEMO as form type will be put on hold on queue AFC_INPUT1 by the last sequence line

Press **Enter** to save the new sequence line 3 and press **F3** to exit the AFC definition window.

Step 6. Testing new functions in AFC_INPUT1

We can now try to release a demo spool entry using option **1. Create Demo Spool Entry** under **12. Service Functions**.

You will notice that the demo spool entry is printed with overlay **IF400DEMO** to the queue **AFC_OUT1** just as we experienced in the **Getting Started** section.

Now try changing the default output queue for your current job to be **AFC_INPUT1**. This is done by the following command:

```
CHGJOB OUTQ(APF3812/AFC_INPUT1)
```

Try to make a screen dump or print a log or another system report. Example:

```
PRTDEVADR CTL01
```

It will now be printed to queue **AFC_INPUT1**, but as it has formtype ***STD** it will be moved to queue **AFC_OUT1** and be printed as normal.

We will also notice that the demo spool entry (form type DEMO) has been moved to queue **AFC_INPUT2**, where it is placed with status ***RDY**:

```
WRKOUTQ APF3812/AFC_INPUT2
```

Example 2, Using same Queue for Input and Output

We will now create a new AFC queue, which will be used for both input and output for Auto Forms Control

Step 1. Checking the Writer

First we will make sure our printer only prints out one specific form type, and leave others to AFC.

The easiest way to do this is from the InterForm400® Main Menu to choose **70. Configuration and licences**, **2. Configure InterForm 400** and then press Enter several times to get the screen below:

```
          Configure InterForm 400                                  APF101D
                                                                      7/23
Do you want to use the APF3812/STRWTRCHK program as validity checking program
for the STRPRTWTR and STRRMTWTR commands, to avoid a writer to be started with
FORMTYPE(*ALL) on one of the output queues defined in Auto-Forms-Control, and
if yes, what formtype has to replace *ALL when a writer is started on one of
these output queues.



    Use APF3812/STRWTRCHK as a validity checker    N   (Y N)

    Form type to replace *ALL . . . . . .  _________

This option is especially useful, if you are using the same output queue
for both input to AFC-functions and for output to a printer, as a writer
never should be started with FORMTYPE(*ALL) on such an output queue.




F3=Exit                                                 F12=Cancel
```

In this screen you state Y to use STRWTRCHK as a validity checker, and specify which particular form type the printer writer is restricted to process.

In case you do not want to use this general change, you can specify a specific form type when starting or changing writer jobs as seen below.

Printer Writer (Twinax, or TCP/IP (TN5250E or Raw Socket))

If the printer writer is already started and attached to another output queue, the following command will change **PRTXXX** to be attached to output queue **AFC_INPUT2**. (If the writer is not started just replace CHGWTR with STRPRTWTR)

```
CHGWTR WTR(PRTXXX) OUTQ(APF3812/AFC_INPUT2)
FORMTYPE(*STD)
```

Defining formtype *STD for the writer will limit the subsystem QSPL to process jobs with this formtype only, thus leaving all jobs regardless of formtype to be processed by subsystem AUTO_FORM:

Remote Writer (TCP/IP LPD)

You can not change a remote writer to use another queue as it is the queue itself which contains the definition of the writer (IP address). You should instead follow the procedure explained on page 475 **Attaching through a TCP/IP Print Server** in order to configure queue **AFC_INPUT2** as a remote writer. Note that remote writer must be started with formtype *STD in order to limit the subsystem QSPL to process jobs with this formtype only, thus leaving

all jobs regardless of formtype to be processed by subsystem AUTO_FORM.:

```
STRRMTWTR OUTQ(APF3812/AFC_OUT1) FORMTYPE(*STD)
```

☺ TIP ☺

When using the same output queue for both Input and output it is highly recommended to include the form type when starting the writer jobs in program QSTRUPPGM, in order to be sure that the writers are started up with the correct Form Type after IPL. However this is automatically fixed, when using STRWTRCHK as described above.

💣 WARNING 💣

*Note that some PC emulated writers, such as the iSeries Access printer session, automatically starts the writer with FORMTYPE=*ALL when initialising. These writers cannot be used with APF3812/STRWTRCHK - use 2 output queue for those.*

Step 2. Creating the AFC Definition:

Enter menu **5. Work with Auto Forms Control** and select option **1. Function attached to Output queues**. Here we press **F6** to create a new definition:

```
                  Update Auto Forms Control Definition              AFC302D

Output queue . . . . . :  AFC_INPUT2
  Library  . . . . . :    APF3812

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  DEMO queue for both input and output
  Autostart job  . . . . . .  Y                (Y N)
  Code page  . . . . . .  *SYSVAL          Number, *SYSVAL      F4=List

  Default output output queue and printer type
  Output queue . . . . . .  AFC_OUT2__
    Library  . . . . . .    APF3812___
  InterForm 400 printer type .  HP4_______


  Optional template AFC-definition to be executed after this definition
  Output queue . . . . . .  __________
    Library  . . . . . .    __________



F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

Here we define the queue to monitor should be **AFC_INPUT2**. We assign the same name for the AUTO_FORM subsystem job, as it will be easier to recognise the correct job when looking at active jobs.

As we will use the same queue for Input and Output for our AFC definitions, we assign the same queue name for the default output queue.

For printer type we state a value matching our specific printer.

There should be no criteria for changing the writer, so we press **Enter** twice to get the AFC function entry screen.

Step 3. Restricting the writer to process type *STD jobs only

Note: This step can be ignored, if you restrict the writer jobs using the STRWTRCHK option as first mentioned.

We create our first AFC function by entering **1** followed by **Field Exit**

```
         Update AFC-functions attatched to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData




(No functions defined)



Seqnbr Function
  1,0    F        Change writer

                            Writer name  . . . .  *OUTQ_____   Name, *OUTQ
                            Form type  . . . . .  *STD______



F3=Exit           F13=Fold/Unfold                          F12=Cancel
```

The first AFC function we enter is **F=CHGWTR**. This function is the first action taken for any spool file printed to queue AFC_INPUT2.

By stating *OUTQ instead of a specific writer name (PRTXXX) we define that the writer to change should be the one currently assigned to the default queue AFC_INPUT2 defined in the previous screen.

Step 4. Preventing following AFC functions to process type *STD

In order to let all spool files with form type *STD be printed without further processing by **InterForm400®**, we define an **Exit** in a new sequence line. We type **2** and press **Field Exit**.

```
         Update AFC-functions attatched to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  F
          Change writer: *OUTQ Form type: *STD




Seqnbr Function   Attributtes of input file for which to execute the function
  2,0    9
                  Form type  . . . . . . . . . . . . . . *STD______
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . ___________
                  Spooled file name  . . . . . . . . . . ___________
                  Device file  . . . . . . . . . . . . . ___________
                    Library  . . . . . . . . . . . . . .   __________
                  Program that opened file . . . . . . . ___________
                    Library  . . . . . . . . . . . . . .   __________
F3=Exit           F13=Fold/Unfold                            F12=Cancel
```

By function **9=EXIT** we define that all spool files with form type ***STD** should not be processed

further by any sequence line after this..

Step 5. Defining the Overlay Merge

Now we want to define the merge of our demo spool entry with our overlay **IF400DEMO**. We enter sequence line **3** and press **Field Exit**. We enter form type DEMO as the criteria for executing the move operation and we press **Enter**:

```
         Update AFC-functions attatched to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . . :     APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  F
          Change writer: *OUTQ Form type: *STD
 0002  9  *STD
          Exit




Seqnbr Function   Attributtes of input file for which to execute the function
  3,0    1
                  Form type  . . . . . . . . . . . . . . DEMO______
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  Program that opened file . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
F3=Exit           F13=Fold/Unfold                           F12=Cancel
```

```
         Update AFC-functions attatched to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . . :     APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  F
          Change writer: *OUTQ Form type: *STD
 0002  9  *STD
          Exit




Seqnbr Function
  3,0    1        Merge with overlay

                  Output queue for merged print  .  *DEFAULT__
                    Library  . . . . . . . . . .     __________
                  InterForm 400 printer type . . .  __________
                  Unicode output . . . . . . . . .  *INPUT        *INPUT,*YES
                  Merge overprint lines  . . . . .  *NO_          *NO, *YES
                  Find overlay in form type table   N     (Y N)


F3=Exit           F13=Fold/Unfold                           F12=Cancel
```

We select function **1=Merge** and enter **DEMO** as condition for processing this sequence line. We press Enter and we define ***DEFAULT** for the output queue which should receive the merged print. The default is **AFC_INPUT2** according to the previous screen.

Note that *DEFAULT include Library and Printer Type.

We define that we do not want to search an overlay table, and we press **Enter** to get the entry field for defining the overlay:

```
         Update AFC-functions attatched to output queues              AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  F
         Change writer: *OUTQ Form type: *STD
 0002  9  *STD
         Exit




Seqnbr Function
  3,0    1        Merge with overlay

                  Overlay name . . . . . .  IF400DEMO_
                    File set . . . . . .      SAMPLE____
                  or overlay selector  . . . . .  ________
                  Primary/Secondary set  . . . .  *PRI          *PRI, *SEC
                  Form type  . . . . . .  *STD______
                  Copies of each page  . . . . .  *INPUT        *INPUT, 01-99

F3=Exit             F4=Prompt                               F12=Cancel
```

If you have worked through section **Getting Familliar with Overlay Selectors**, You could enter the selector **MYSELECT** instead of an Overlay name.

It is very important that we define the form type to be ***STD**. The resulting spool entry of this AFC function will be sent back to the same queue **AFC_INPUT2** and get status ***RDY**. That means the first two AFC definitions we defined will be executed for the new spool entry. However, the second line (**9=EXIT** on formtype ***STD**), will see to that the merged print is not processed once more by sequence line 3, but instead processed by the writer as result of sequence line 1=CHGWTR, which defined the writer to process jobs with formtype *STD.

We now press **Enter** to decide the spool file attributes of the merged print out.

```
         Update AFC-functions attached to output queues               AFC305D

Output queue . . . . . :   AFC_INPUT2
  Library  . . . . . :     APF3812
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  F
         Change writer: *OUTQ Form type: *STD
 0002  9  *STD
         Exit




Seqnbr Function
  3,0    1        Merge with overlay

                  Output spooled file name . __________ *INPUT, Name
                  User data  . . . . . .  IF400DEMO_ *INPUT, *JOB, *USER ...
                  Seperator drawer . . . . .  ________   *NONE, *DEFAULT, Nummer
                  Hold output spooled file . *NO_        *NO, *YES
                  Save output spooled file . *NO_        *NO, *YES
```

As user data we state the same name of the overlay, which will allow us to verify the spool entry on the output queue AFC_INPUT2.

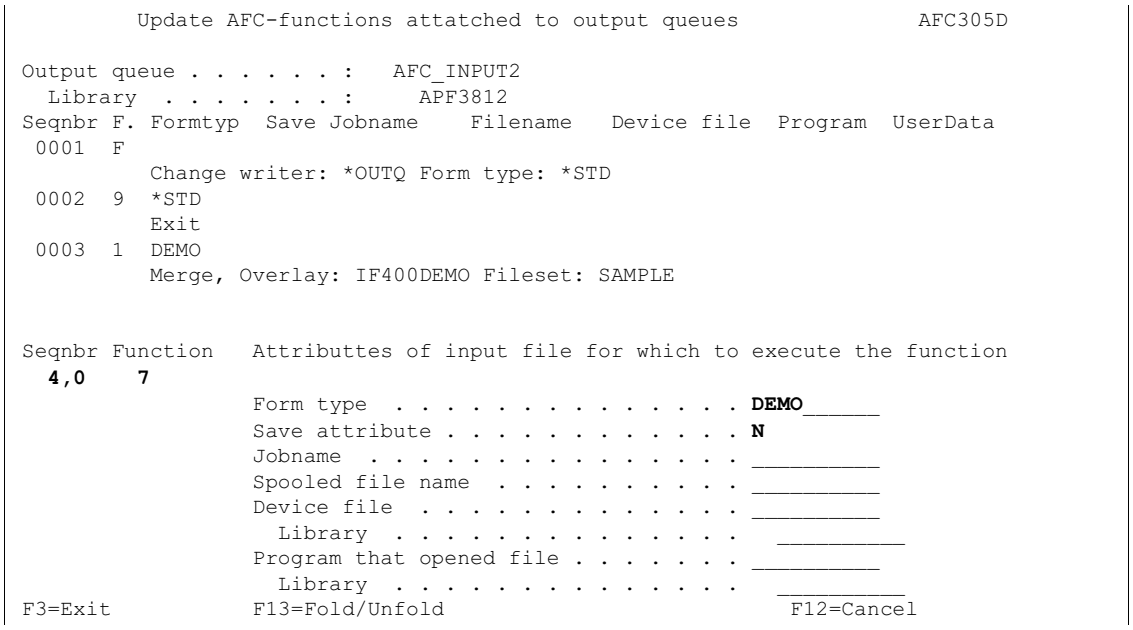
We press Enter to save this AFC definition.

Step 6. Cleaning up processed jobs

The spool entry which was used for creating the new spool entry with overlays, will stay in the queue with status ready, unless we define an AFC function to handle it.

We have several possibilities. We could just hold it with function 6, but we could also choose to move it to another queue in order to save it. This queue could then be cleared every Friday, when we are sure no re-prints are needed.

Finally we could choose just to delete the job which we intend to do in sequence line **4**:



We define that all spool entries with form type DEMO should be deleted, but only if the spool file attribute SAVE=*NO. If SAVE=*YES there might be a good reason for it, which means we should leave them alone.

We press **Enter** to save

We have not considered what to do with spool files with other form types than *STD or DEMO. They will therefore just stay in the queue with status *RDY.

Now one might wonder if the spool files with form type *STD also remains in the queue, but they are automatically deleted when the writer has printed them.

Step 7. Activating the AFC job AFC_INPUT1

We now press F3 to exit our AFC definition and we select option 8 to start the AFC job.

```
         Work with Auto Forms Control output queues                  AFC300D

Start with . . . . . . . _________ _________

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display   8=Start AFC-job   9=End AFC-job

Opt    Outq        Library      Description
 _     AFC_INPUT1  APF3812      Job for sample printout
 8     AFC_INPUT2  APF3812      DEMO queue for both Input and Output

                                                                        End

F3=Exit        F5=Refresh        F6=Add                          F12=Cancel
```

Step 8. Testing the new AFC definition AFC_INPUT2

We can now try to release a demo spool entry using option **1. Create Demo Spool Entry** under **12. Service Functions**.

If you made the changes to AFC definition AFC_INPUT1 according to Example 1, the demo spool entry will automatically be moved to AFC_INPUT2 as result of sequence line 3 (function 5=move). If you did not make the changes you will have to move the spool file manually from outq AFC_INPUT1 to AFC_INPUT2 and release it.

As in Example 1 you can try changing your default print queue to **AFC_INPUT2** with the command:

```
CHGJOB OUTQ(APF3812/AFC_INPUT2)
```

Try to make a screen dump or print a log or another system report. Example:

```
PRTDEVADR CTL01
```

It will now be printed to queue **AFC_INPUT2**, but the formtype ***STD** will cause the job to print without interference from Auto Forms Control.

We will also notice that the demo spool entry (formtype DEMO) has been deleted after it has been used to generate the merged printout.

Using a “TEMPLATE” AFC defintion

As all printers being used together with InterForm400® has to have an AFC-definition defined, the use of a TEMPLATE AFC definition is very useful. A lot of the printers being monitored by AFC, will often have the same requirements in terms of which spool files are to be merged with which overlays.

In the following example we delete the AFC entries made for AFC definition AFC_INPUT1, even though the use of a template definition will also work when AFC entries is made in the main AFC defintion. The template AFC entries will always be executed after the AFC entries made in the main AFC definition.

```
                  Update Auto Forms Control Definition              AFC302D

Output queue . . . . . :  AFC_INPUT1
  Library  . . . . . :    APF3812

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  Job for sample printout
  Autostart job  . . . . . .  Y                (Y N)
  Code page  . . . . . .  *SYSVAL          Number, *SYSVAL      F4=List

  Default output output queue and printer type
  Output queue . . . . . .  AFC_OUT1
    Library  . . . . . .    APF3812
  InterForm 400 printer type .  HP4_PJL


  Optional template AFC-definition to be executed after this definition
  Output queue . . . . . .  TEMPLATE__
    Library  . . . . . .    QUSRSYS___



F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

Rather than making the same AFC entries for a lot of simular monitored output queues, we create an AFC defintion with entries, which will operate as a template for other AFC definitions:

Create an output queue **without** a device attached.:

```
CRTOUTQ QUSRSYS/TEMPLATE
```

Create an AFC definition as per below, using option 1. Functions attached to output queue from the AFC menu option 5. Work with Auto Forms Control. Press F6 to create.

```
                  Update Auto Forms Control Definition              AFC302D

Output queue . . . . . :  TEMPLATE__
  Library  . . . . . :    QUSRSYS___

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  Template AFC-definition___________________
  Autostart job  . . . . . .  Y                (Y N)
  Code page  . . . . . .  *SYSVAL          Number, *SYSVAL      F4=List

  Default output output queue and printer type
  Output queue . . . . . .  TEMPLATE__
    Library  . . . . . .    QUSRSYS___
  InterForm 400 printer type .  HP4_PJL___

  Optional template AFC-definition to be executed after this definition
  Output queue . . . . . .  __________
    Library  . . . . . .    __________

F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

We will create a simple AFC entry for this AFC definition, where we want to merge the spool files with Form Type DEMO, with overlay IF400DEMO and send the resulting print to the

DEFAULT output queue, as follows:

```
         Update AFC-functions attached to output queues              AFC305D

Output queue . . . . . :   TEMPLATE
  Library  . . . . . :     QUSRSYS
Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  1  DEMO
          Merge, Overlay: IF400DEMO Fileset: SAMPLE




Seqnbr Function   Attributtes of input file for which to execute the function
  1,0    1        Form type  . . . . . . . . . . . . . . . DEMO______
                  Save attribute . . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .   __________
                  Program that opened file . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .   __________
                  User-specified data  . . . . . . . . . . __________
F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

We will define that the print should be directed to the *Default output queue

```
Seqnbr Function
  1,0    1                 Merge with overlay

                           Output queue for merged print  . *DEFAULT____
                             Library  . . . . . . . . . . .    __________
                           InterForm 400 printer type . . . __________
                           Unicode output . . . . . . . . . *INPUT
                           Merge overprint lines  . . . . . *NO_   *NO, *YES
                           Find overlay in forms type table  N     (Y N)

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

The spool file should be merged with overlay IF400DEMO in file set SAMPLE and the resulting spool file should have Form Type MERGED.

```
Seqnbr Function
  1,0    1          Merge with overlay

                    Overlay name  . . . . . . . . . . IF400DEMO_
                       File-set . . . . . . . . . .   SAMPLE____
                    Or overlay selector . . . . . . . _________
                    Primary/Secondary set . . . . . . *PRI       *PRI, *SEC
                    Form type . . . . . . . . . . . . MERGED____
                    Copies of each page . . . . . . . *INPUT     *INPUT, 01-99

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

The attributes of the resulting spool file we leave as *INPUT and set *NONE for Separator Drawer and *NO for Hold or SAVE spool file.

```
Seqnbr Function
   1,0    1        Merge with overlay

                   Output spooled file name . *INPUT____ *INPUT, Navn
                   User data  . . . . . . . . *INPUT____ *INPUT, *JOB, *USER ...
                   Seperator drawer . . . . . *NONE___   *NONE, *DEFAULT, Nummer
                   Hold output spooled file . *NO_       *NO, *YES
                   Save output spooled file . *NO_       *NO, *YES

 F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

Now start the AFC definition AFC_INPUT1 and TEMPLATE with function 8 in ‘1. Functions attached to output queues’. If you do not already have the demo spool entry in output queue AFC_INPUT1 you can create this demo spool file, using function ‘1. Create Demo Spool Entry’ in ‘12. Service Functions’ which you will find on the InterForm400 Main menu.

When you release the demo spool file in output queue AFC_INPUT1, you will see that AFC will process the spool file according to the AFC entries made in the TEMPLATE definition, however the resulting spool file will still be directed to the default output queue AFC_OUT1, which we have defined for AFC output queue AFC_INPUT1.

2. Form Type Table

An alternative to stating the **Form Type** directly in **1= Merge with Overlay** (refer to page 155) is to create a table which has all available form types listed.

Apart from having the forms listed in a well-arranged manner, the form types table gives the possibility of defining 3 copies with 3 different overlays for each page in the input spool entry.

Note that an AFC definition must be defined which lets the selection from the **Forms type table** take effect.

When selecting the menu point **2. Form Type Table** from the Auto Forms Control administration menu the following screen will appear:

```
          Enrollment of Form Types to Auto Forms Control               AFC310D

Form type of spooled file . . . __________









F3=Exit    F5=Refresh    F6=Add form type    F11=View 2    F12=Cancel
```

The overlay selection entry field

Pressing F6 to add a new form type results in the screen below:

```
          Add form type to form type table                             AFC310D

Form type  . . . . . . . . .   __________

Merge with
  File-set . . . . . . . . .   __________
  Overlay name . . . . . . .   __________
  Primary/Secondary set  . .   ____         *PRI, *SEC
  Form Type  . . . . . . . .   __________
  Copies . . . . . . . . . .   _______      1-99, *INPUT
And if filled in, merge with
  File-set . . . . . . . . .   __________
  Overlay name . . . . . . .   __________
  Primary/Secondary set  . .   _____        *PRI, *SEC
  Form Type  . . . . . . . .   __________
  Copies . . . . . . . . . .   _______      1-99, *INPUT
And if filled in, merge with
  File-set . . . . . . . . .   __________
  Overlay name . . . . . . .   __________
  Primary/Secondary set  . .   _____        *PRI, *SEC
  Form Type  . . . . . . . .   __________
  Copies . . . . . . . . . .   _______      1-99, *INPUT
F3=Exit    F4=List    F12=Cancel
```

This screen contains the possibility to produce three different print-outs of the spool entry with individual overlays attached. All sets will be printed on the same queue defined by the AFC definition **1.Merge with overlay** which has **Find overlay in forms type table = Y**. (refer to

page 158)

File-set: The file-set where the overlay is placed. Prompt available file-set with **F4**

Overlay name: The overlay to use from the above file-set

Form type: The form type for the merged output. It is recommended to use ***STD** in order to avoid messages from the writer about changing forms.

Copies: The number of copies produced from each page of the input spool entry.

Split Definitions

With the Split Definition you will be able to select specific pages in a spool entry on basis of contents of these pages. A split function will create a new spool entry with pages meeting the criteria. The conditional selection of pages works in the same way as the overlay selector described on page 136.

The split definition can be called either via Auto Forms Control via option B = Split spooled file or via the command APF3812/SPLITSPLF.

When entering **3. Split definitions** in the menu **5. Work with Auto Forms Control** on the main menu the following screen is displayed.

```
          Work with Split Definitions                                AFC300D

Start with . . . __________ __________

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt    Split name    Description

                                                                        End
F3=Exit        F5=Refresh        F6=Add                        F12=Cancel
```

Press **F6** to create a new split definition.

Split Definition Entries

```
          Create Split Definition                                    SPL310D

Split definition name . : SHIPPING__
Description . . . . . . : Extract_invoices_only_____________________________
Respect page range  . . : *YES     *NO, *YES

Seqnbr.  Split detail description
______

F3=Exit                 F5=Resequence                        F12=Cancel
F13=Select spooled file F18=DSPSPLF
```

Respect page range
With this field you can decide if the page range (PAGERANGE) parameter of the input spooled file should be respected by the split definition. If set to *YES, then any page outside the PAGERANGE are ignored. This option is default *NO for backwards compatibil**ity.**

You can now enter the specific requirements your spool entry data should meet for selecting a certain overlay. You can press F13 and F18 to select and display the spooled file used to note

the lines and positions used for the split.

F13=Select spooled file
Press this function key to select a spooled file from this screen:

```
Select spooled file              SSF300D

   Job name . . . . . __________
     User . . . . . .   __________
     Job number . . . .   ______
   File name  . . . . . __________
   Spooled file no. . . ______  Number, *ONLY, *LAST


Name of output queue to search if splf file is unknown:

     Output queue . . . __________
       Library  . . . .   __________


 F3=Exit   F12=Cancel
```

You select the spooled by typing the output queue in which the spooled file is placed in the bottom of the window and then select the spooled file with ‘1' - or by typing in the spooled file identification in the top of the screen.

F18=DSPSPLF
After selecting the spooled file you can now display it with F18:

```
                                                        Display Spooled File
File  . . . . . :   EDTPRT
Control . . . . .
Find  . . . . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+.
                                                                          1
       Herring Marine Research
       Seaweed Street 14
       9000 Battleaxe
       DK-Denmark
       ----------------------
       Att: Wolly Weed
```

When entering a sequence line you will get the following screen:

```
                      Change Split Definition                    SPL310D

 Split definition name . : SHIPPING_
 Description . . . . . . : Extract invoices only

 Seqnbr.




 Seqnbr    Split detail description
   1,0     _____________________________
           AND/OR Print line  Position   Oper  Compare value
                    ___       ___ - ___  ____  ______________________________
            ____    ___       ___ - ___  ____  ______________________________
            ____    ___       ___ - ___  ____  ______________________________
            ____    ___       ___ - ___  ____  ______________________________
            ____    ___       ___ - ___  ____  ______________________________
            ____    ___       ___ - ___  ____  ______________________________
 F3=Exit                                       F11=Delete          F12=Cancel
```

Split detail description: Description of the pages selected by this detail line.

AND/OR: Relate this statement to the previous statement.

Print Line: The print line in the spool entry to search.

Position: The column interval to search.

Oper. The operator relating to the compare value.
The operators used are standard operators known from e.g. Query/400:

EQ	Equal to compare value
NE	Not equal to compare value
LT	Less than compare value
LE	Less than or equal to compare value
GT	Greater than compare value
GE	Greater than or equal to compare value

Compare Value: The character string or numeric value which the operator should compare with.

If you want to call a sequence line for all pages in a spooled file you need to specify a condition above, that is true for all the pages. Such a dummy condition could be this:

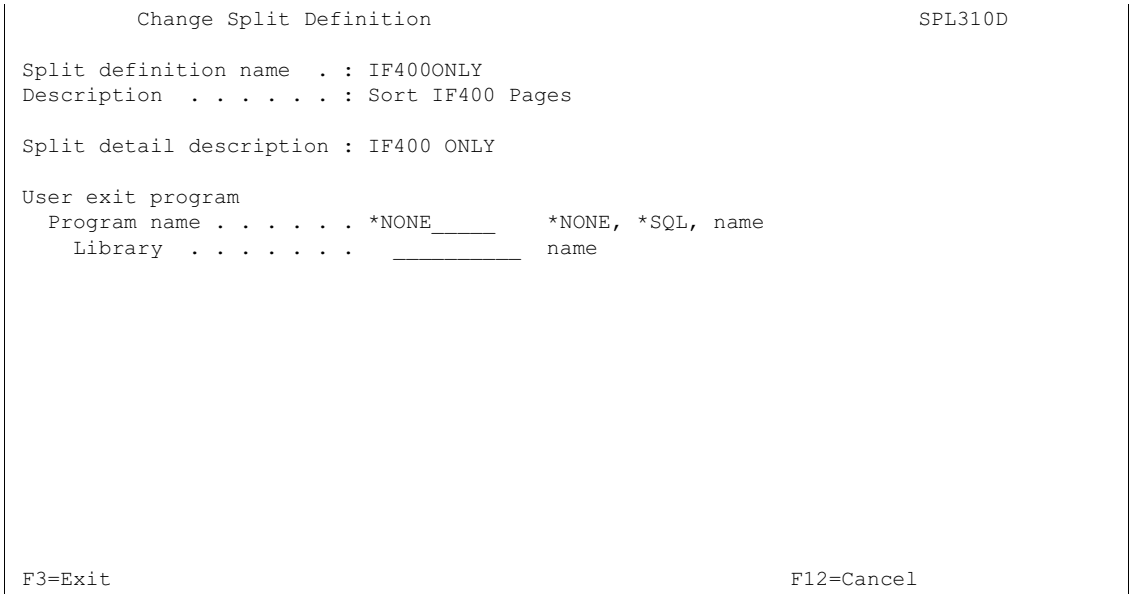
```
Seqnbr.  Split detail description
   1,0   all
         AND/OR  Print line  Position  Oper  Compare value
                    1        1 -  1   EQ
          OR        1        1 -  1   NE
                              -
                              -
                              -
                              -                                          +

F3=Exit                        F11=Delete                 F12=Cancel
F13=Select spooled file
```

The condition simply says: Either there is a blank in position 1 in line 1 or there is not.
(Which of course is always true ;-))

Please notice, that **no delimiter** is used for the compare value.

If you leave the condition for the page selection above blank, then no pages will be selected for the split.

Calling a User Exit Program with the extracted spool pages



This screen can be used to call a user exit program, that inserts information in the spool entry resulting from the split.

InterForm400® will call the program with a set of parameters consisting of up to either 5 or 10 lines each containing a field of up to 30 positions. The amount of exit parameters depends on the format: 01 equals 5 exit parameters, 02 equals 10 exit parameters, 03 equals the 10 exit parameters as well as 300 character parameter, that contains all attributes of the original spooled file.

For additional information on return parameters look into the sample programs, **SPLEXIT**, **SPLEXIT02**, **SPLEXIT03** and **SPLEXIT04** in the source file **APISRC** in library APF3812. Please notice that the spooled file attribute parameters are all **RETURN** parameters, that are empty when the program is called.

These various programs differs in these manners:

SPLEXIT (Format=1). This was the first (simple) kind of split exit program supported. The program get up to **5 texts** from the spooled file and returns up to 10 texts into the new splitted spooled file.

SPLEXIT02 (Format=2). Same as SPLEXIT with the only difference, that you here can get up to **10 texts** from the spooled file.

SPLEXIT03 (Format=3). Same as SPLEXIT02 with the only difference, that you here get a complete data structure with **ALL the information of the spooled file** that triggered the split definition.

SPLEXIT04 (Format=4). This is a **unicode** exit program. This is needed if you want to use a split definition to change the contents of a unicode spooled file. Please notice that all text returned from the program are expected to be in unicode, where the other split exit programs above run in the codepage of the spooled file (or AFC job if not defined).

One example could be a customer ID which the user exit program uses to look up a fax number in a database, which is returned to InterForm400® to insert in the spool entry resulting from the split.

```
         Change Split Definition                                  SPL310D

Split definition name  . : IF400ONLY
Description  . . . . . . : Sort IF400 Pages

Split detail description : IF400 ONLY
User exit program
  Program name . . . . . . GETFAXNR       *NONE, SQL, name
    Library  . . . . . .   QGPL            name
  Format . . . . . . . . . 02             01, 02, 03, 04 (UCS2)
  When to call . . . . . . 1              1=Every page 2=When exit parm changes
Exit parameter data                       3=First time the seqnbr is selected

  1. Linenbr.  13_  Position 57_ - 60_    6. Linenbr. ___   Position ___ - ___
  2. Linenbr.  ___  Position ___ - ___    7. Linenbr. ___   Position ___ - ___
  3. Linenbr.  ___  Position ___ - ___    8. Linenbr. ___   Position ___ - ___
  4. Linenbr.  ___  Position ___ - ___    9. Linenbr. ___   Position ___ - ___
  5. Linenbr.  ___  Position ___ - ___   10. Linenbr. ___   Position ___ - ___
Return data is to be printed in the following positions
  1. Linenbr.  14_  Startposition  60_    6. Linenbr. ___ Startposition ___
  2. Linenbr.  ___  Startposition  ___    7. Linenbr. ___ Startposition ___
  3. Linenbr.  ___  Startposition  ___    8. Linenbr. ___ Startposition ___
  4. Linenbr.  ___  Startposition  ___    9. Linenbr. ___ Startposition ___
  5. Linenbr.  ___  Startposition  ___   10. Linenbr. ___ Startposition ___
F3=Exit                                                   F12=Cancel
```

You might want to **break up the spooled file for each possible value** in a certain position in the spooled file. To achieve this you select the line and positions in the screen above and in your exit program you simply copy the incoming value (e.g. &entrytxt1) into a variable containing a spooled file attribute e.g. &formtype. Please notice, that this works fine EVEN if the same value is found on pages that are NOT successive - those pages are always merged into one spooled file with the same attributes.

The field '**When to call**' above indicates when to call the user program mentioned above:

1=Every page
The user program is called for each page where the relevant sequence line is selected.

2=When exit parm changes
Normal programs are deterministic i.e. for a fixed set of input values the output will always be the same. If that is the case for your program you should consider this setting. The values that the program returned the first time will be used for the subsequent pages containing the same values for the exit parms. In this way you can save a bit of processing time by not calling your program more than needed.

3=First time the seqnbr is selected
The first time the user program is called the returned parameters are stored and reused for the subsequent calls. Please note, that if multiple sequence numbers use this option while being called alternately the returned parameters can be mixed up!

☝ NOTE ☝

If you return spooled file attributes like described above, then please note that if you **return blanks**, then the spooled file **attribute of the splitted spooled file(s) will the same as the original spooled file** i.e. if the original spooled file has '***STD**' as the formtype and you return blanks then the formtype of the new spooled file(s) will be '***STD**'.

☺ TIP ☺

You can only add to (not overwrite) the contents of the spooled file by use an exit program. If you want to overwrite the contents you can use the CRTPBSPLF command - see page ***513****.*

WARNING

*All exit programs called by InterForm400® **must** be owned by QSECOFR. If it is not the AFC job will halt with an error message. Change the owner with the command: CHGOBJOWN OBJ(library/program) OBJTYPE(*PGM) NEWOWN(QSECOFR). Refer to page* ***167*** *to see what is required in order to be able to change the owner..*

Split: Add data via SQL

It is possible to add data into a new spooled file from a database. The data is found via an SQL where statement in the split definition. You just need to state *SQL instead of a program like below:

```
         Change Split Definition                                    SPL310D

Split definition name  . : DEMO_SQL
Description  . . . . . . : Add data via SQL
Split detail description : all
User exit program
  Program name . . . . . . *SQL          *NONE, *SQL, name

Missing record option  . 1              1=Send message,2=Use blank
Duplicate record option. 1              1=Send message,2=Use any,3=Use blank
Exit parameter data
  1. Linenbr.  13  Position 57 - 60     6. Linenbr. ___   Position ___ - ___
  2. Linenbr.  ___ Position ___ - ___   7. Linenbr. ___   Position ___ - ___
  3. Linenbr.  ___ Position ___ - ___   8. Linenbr. ___   Position ___ - ___
  4. Linenbr.  ___ Position ___ - ___   9. Linenbr. ___   Position ___ - ___
  5. Linenbr.  ___ Position ___ - ___  10. Linenbr. ___   Position ___ - ___
Return data is to be printed in the following positions
  1. Linenbr.   1  Startposition   1    6. Linenbr. ___   Startposition  ___
  2. Linenbr.   2  Startposition   1    7. Linenbr. ___   Startposition  ___
  3. Linenbr.   3  Startposition   1    8. Linenbr. ___   Startposition  ___
  4. Linenbr.  ___ Startposition  ___   9. Linenbr. ___   Startposition  ___
  5. Linenbr.  ___ Startposition  ___  10. Linenbr. ___   Startposition  ___
F3=Exit                                                  F12=Cancel
```

Via the exit parameters you define what information you want to retrieve from the spooled file. They are later referenced as *V01-*V10 in the SQL where clauses.

For the SQL look up there are two settings:

Missing record option
This defines what should happen, if the look up should happen not to find any matching record with the SQL statements stated.
1=Send message: The job will stop with an error message: APF4024 - Unable to get SQL data for split function. See joblog. The previous message, APF4017 in the joblog explains the exact reason.
2=Use blank: Blanks are inserted, if no matching record is found.

Duplicate record option
This defines what should happen, if the look up finds multiple records, that match the selection.
1=Send message: The job will stop with the error message: APF4024 - Unable to get SQL data for split function. See joblog. The previous message, APF4018 in the joblog explains the exact reason.
2=Use any: Data from one of the matched records is returned.
3=Use blank: Return blanks if multiple records match the selection.

The return data is (like for a user program) the lines and positions in the spooled file in which the returned data will be inserted. In the example above the data will be inserted in line 1, 2 and 3.

When you press Enter this screen will be displayed:

```
         Change Split Definition                                  SPL350D
                                                                 DEMO_SQL
SQL return parameters:
Pm  Field       File        Library     Where
 1  TEXT1       TESTFILE    APFUDV      "NUMBER" = '*V01'
 2  TEXT2       TESTFILE    APFUDV      "NUMBER" = '*V01'
 3  TEXT3       TESTFILE    APFUDV      "NUMBER" = '*V01'









Output queue, library, form type and user data:
OQ
LB
FT  TEXT1       TESTFILE    APFUDV      "NUMBER" = '*V01'
UD

Note: Exit parameters *V01-*V10 can be used in the where clause.

F3=Exit   F10=Prompt   F12=Cancel
```

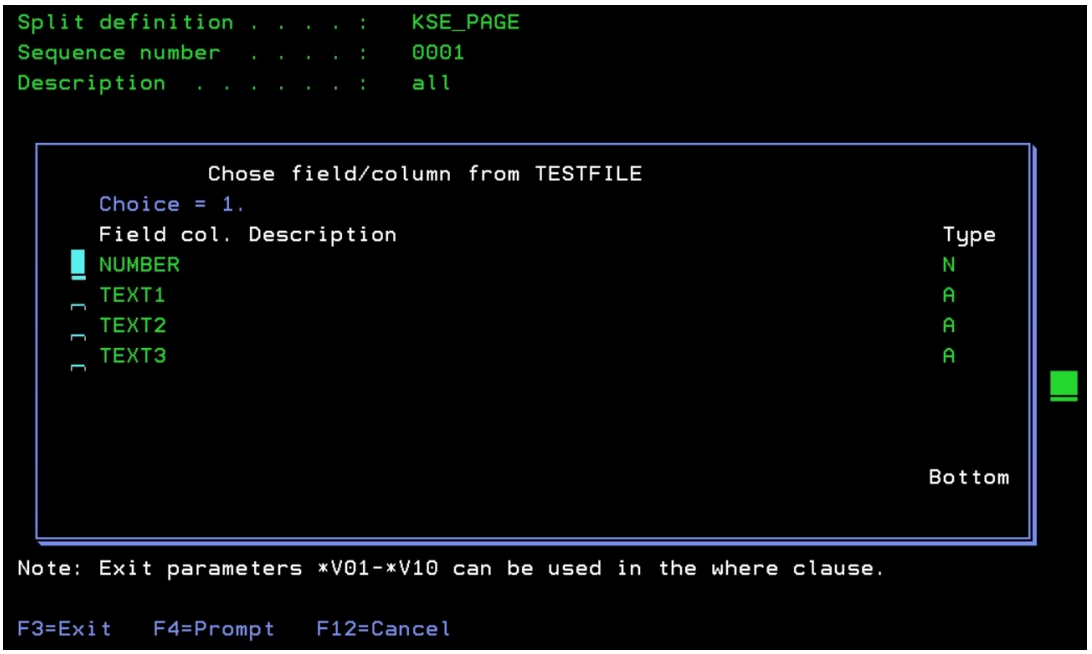
The SQL can add up to 10 fields to the new spooled file. In the example above we take the fields, TEXT1-TEXT3 from the Database - for the record where the field, NUMBER equals the text found in the specific spooled file page.

How to prompt

If you press F10=Prompt, you will get more space for the SQL where clause, and also additional help for the SQL statement:

```
Split definition . . . . :   KSE_PAGE
Sequence number  . . . . :   0001
Description  . . . . . . :   all

Return parameter . . . . :     3

Field  . . . . . . . . . .   NUMBER

File . . . . . . . . . . .   TESTFILE
  Library  . . . . . . . .     APFUDV

Where  . . . . . . . . . .
"NUMBER" = 9999









Note: Exit parameters *V01-*V10 can be used in the where clause.

F3=Exit   F4=Prompt   F12=Cancel
```

With F4 you can prompt for the name of the field. Here you will see a list of the fields in the selected file, and from this list you can select the field you want to insert in the spooled file:



You can also prompt the where part with F4. After you have selected a field, a dummy comparison is inserted to help you to include delimiters when needed:

The selected field is inserted inside “” to ensure, that the field is not mixed with any predefined fields. A field called USER must e.g. be included in double quotes to ensure, that this is not mistaken for the USER profile running the current job.

A dummy compare value is inserted:

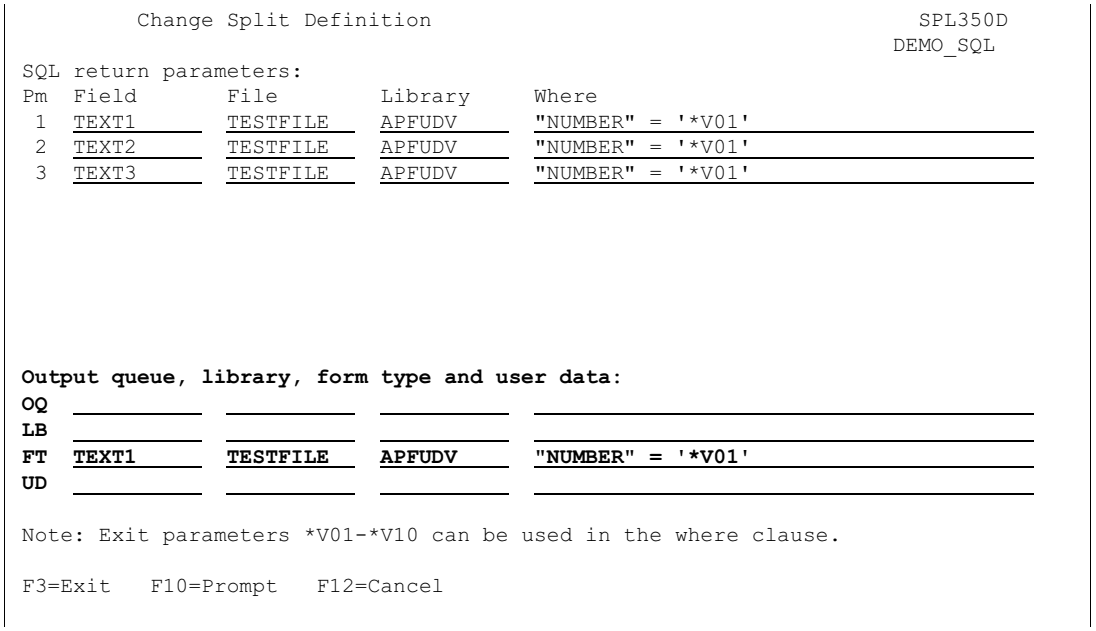
For alphanumeric fields a compare with XXXX is inserted:
"TEXT1" = 'XXXX'

For numeric fields a compare with 9999 is inserted:
"NUMBER" = 9999

In this way InterForm400 reminds you when quotes are needed. You just e.g. replace the XXXX or 9999 with the value, that you want to compare with e.g. *V01.

Set Spooled file attributes via SQL

You can add additional text (found via SQL) as described above, but you can also set various spooled file attributes to a value found via an SQL select statement. This is setup in the bottom of the screen:



The spooled file attributes are:

OQ The **O**utput **Q**ueue in which the new, split spooled file is to be created.
LB The **L**i**B**rary containing the output queue in which the new split spooled file is to be created.
FT The **F**orm **T**ype of the new, split spooled file.
UD The **U**ser **D**ata (USRDTA) field of the new, split spooled file.

In the example above the form type (FT) of the new spooled file will be the data found in the field, TEXT1 for which the field, NUMBER equals the text found in the spooled file. If different values are returned for any spooled file attribute (when comparing the values for one page with the attributes returned for the other pages), a new spooled file will be created for the pages that has the same settings for the spooled file attributes. So this can be used for level break splitting - without the need of a user program.

Spooled file attributes set via the screen above overrules any fixed value set on the final screen of the split definition (SPL310D).

If you run the SQL split definition above for the InterForm400 demo spooled file with the file, APFUDV/TESTFILE having this content:

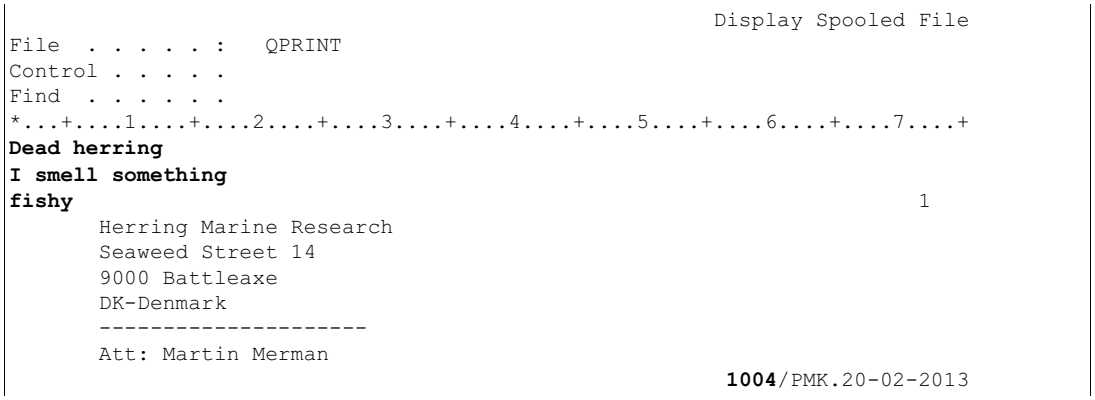
NUMBER	TEXT1	TEXT2	TEXT3
1001	Flower Power	Sunny side of the street	1001 Luftballons
1003	Woody woodpecker	If you go down in the woods	today
1004	Dead herring	I smell something	fishy

Then 3 spooled files will be created with the form types:

Dead herri
Flower Pow
Woody wood

(The 10 first characters of TEXT1. Two pages contains 1001 in line 13, position 57 so they will be placed in the same, resulting spooled file).

The contents of the spooled file will look like this:


Display Spooled File
File . . . . . : QPRINT
Control . . . . .
Find . . . . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+
Dead herring
I smell something
fishy 1
Herring Marine Research
Seaweed Street 14
9000 Battleaxe
DK-Denmark

Att: Martin Merman
1004/PMK.20-02-2013

Defining the spool file attributes for the result of a Split

```
         Change Split Definition                                    SPL310D

Split definition name  . : SHIPPING_
Description  . . . . . . : Extract invoices only

Split detail description : Split Invoice/Credit

Output queue . . . . . . . . . . . _____________  *INPUT, *NONE, Name
  Library  . . . . . . . . . . . .   _____________
Page size
  Length, Lines per page . . . . . _____________  *INPUT, 1-255
  Length, positions per line . . . _____________  *INPUT, 1-378
Lines per inch . . . . . . . . . . _____________  *INPUT, 3, 4, 6, 7.5, 8, 9, 12
Lines per inch . . . . . . . . . . _____________  *INPUT, 3, 4, 6, 7.5, 8, 9, 12
Characters per inch  . . . . . . . _____________  *INPUT, 5, 10, 12, 13.3, 15...
Overflow line number . . . . . . . _____________  *INPUT, 1-255
Font ID  . . . . . . . . . . . . . _____________  *INPUT, *CPI, 3, 5, 11, 12...
Degree of page rotation  . . . . . _____________  *INPUT, *AUTO, *COR, 0, 90...
Form type . . . . . . . . . . . . . _____________  *INPUT, Character value, *STD
Spool file name  . . . . . . . . . _____________  *INPUT, *USER, *JOBNAME, Name
User data  . . . . . . . . . . . . _____________  *INPUT, *USER, *JOBNAME ...
Hold spooled file  . . . . . . . . _____________  *INPUT, *NO, *YES
Save spooled file  . . . . . . . . _____________  *INPUT, *NO, *YES
F3=Exit                                                  F12=Cancel
```

Output queue: The output queue where the resulting spool entry from the split should be sent to. The value ***NONE** means that the pages are not printed, but the user exit program is called. This allows for a user exit program to take data from pages which are not printed, and transfer them to the following pages.

The rest of the values are corresponding to the spool file attributes found in a printer file (PRTF).

Blank fields equals *INPUT, which means the attributes of the original spool entry will be copied to the resulting spool entry from the split. A user exit program can overwrite these values, if any of the fields are filled out, when returning from the exit program.

The original spool entry will after the split remain untouched with status ***RDY** and could be processed immediately by other AFC definitions, even another **Split definition**.

Example Using Split

The following makes use of the demo spool entry delivered with InterForm400®. You can print this from the menu **12. Service Functions**.

The distinction between **Document** and **modules** letters is the text “Document” or “modules.” which is located on each page in line **15** position **34 - 41**:

```
                            DISPLAY SPOOL FILE
File  . . . . . :   QPRINT                          Page/Line  3/15
Function  . . . .   +1                              Columns    1 - 78
Search for  . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Re. Your new InterForm400 Document Management System.
       ----------------------------------------------------
       Congratulations with your new InterForm400 software.
       InterForm400 will enable you to print Electronic Forms and perform
       advanced data remapping and copy management of your existing SCS
       print data. InterForm 400 exploits the advanced features of
       standard HP-PCL printers and is the chosen document management
       solution for over 2000 installations.
       The following license code(s) will be needed to activate
       InterForm400 permanently to your system(s):
       Product          Model   i-Group     Serial No.     License Code
       ------------------------------------------------------------------
       InterForm400     515       i050       4449079       F2 E7 20 AA
       InterForm400     810       i100       44B2031       AA BB 01 23
       InterForm400     890       i600       44D3971       1A BC DE 44
       InterForm400     520       i100       44A1460       79 10 22 F1
F3=Exit     F12=Cancel     F19=Left     F20=Right     F24=More keys
```

We now enter item **3. Split definitions** on the Auto Forms menu.

```
         Create Split Definition                                  SPL310D

Split definition name  . . IFLETTER__
Description  . . . . . . . Extract Document letters_____________________________









F3=Exit                                                  F12=Cancel
```

Here we press **F6** to add a **Split definition**, which we assign the name **IFLETTER**

```
         Change Split Definition                                  SPL310D

Split definition name . : IFLETTER
Description . . . . . . : Extract Document letters

Seqnbr.   Split detail description




Seqnbr    Split detail description
  1,0     Split Document/modules_______
          AND/OR Print line  Position   Oper  Compare value
           ____    _15       _34 - _41  EQ__  Document_____________________
           ____    ___       ___ - ___  ____  _____________________________
           ____    ___       ___ - ___  ____  _____________________________
           ____    ___       ___ - ___  ____  _____________________________
           ____    ___       ___ - ___  ____  _____________________________
           ____    ___       ___ - ___  ____  _____________________________
F3=Exit                   F4=Prompt      F11=Delete       F12=Cancel
```

We press **1** and **Field Exit** to create a new sequence line, and we fill in, that this split definition should run, if the text in line **15** from position **34** to **41** equals (**EQ**) **Document** (case sensitive).

When we press Enter a screen for specifying a user exit program is shown. The exit program can be used for collecting data from other applications or databases, for insertion in the document. We are not using this facility, so the value *NONE is kept.

```
         Change Split Definition                                  SPL310D

Split definition name  . : IFLETTER
Description  . . . . . . : Extract Document Letters

Split detail description : Split Document/modules

User exit program
  Program name . . . . . . *NONE_____    *NONE, name
    Library  . . . . . .   __________    name









F3=Exit                                                  F12=Cancel
```

When we press **Enter** again, a screen is shown, where we can state the spool file attributes of the spool entry created by the split function. Note that the original spool entry used for making the split will remain untouched:

```
         Change Split Definition                                    SPL310D

Split definition name  . : IFLETTER_
Description  . . . . . . : Extract Document letters

Split detail description : Split Document/modules

Output queue . . . . . . . . . . . . AFC_INPUT1  *INPUT, *NONE, Name
  Library  . . . . . . . . . . . .   APF3812____
Page size
  Length, Lines per page . . . . . . ______      *INPUT, 1-255
  Length, positions per line . . . . ______      *INPUT, 1-378
Lines per inch . . . . . . . . . . . ______      *INPUT, 3, 4, 6, 7.5, 8, 9, 12
Lines per inch . . . . . . . . . . . ______      *INPUT, 3, 4, 6, 7.5, 8, 9, 12
Characters per inch  . . . . . . . . ______      *INPUT, 5, 10, 12, 13.3, 15...
Overflow line number . . . . . . . . ______      *INPUT, 1-255
Font ID  . . . . . . . . . . . . . . ______      *INPUT, *CPI, 3, 5, 11, 12...
Degree of page rotation  . . . . . . ______      *INPUT, *AUTO, *COR, 0, 90...
Form type  . . . . . . . . . . . . . IFLET_____  *INPUT, Character value, *STD
Spool file name  . . . . . . . . . . __________  *INPUT, *USER, *JOBNAME, Name
User data  . . . . . . . . . . . . . __________  *INPUT, *USER, *JOBNAME ...
Hold spooled file  . . . . . . . . . *NO___      *INPUT, *NO, *YES
Save spooled file  . . . . . . . . . ___ ___     *INPUT, *NO, *YES
F3=Exit                                                  F12=Cancel
```

We have defined that the spool entry containing the Document letters should be sent to queue **AFC_INPUT1**, which means back to our AFC input queue. We define ***NO** for hold spooled file which means the spool entry will here get status ***RDY**.

We are changing the form type to **IFLET**. This is done to enable the AFC functions to process the spool entry on basis of the form type. The original spool entry containing **both** Document and modules letters will still be available with the original form type **DEMO**.

We press **Enter** and **F3** to exit this screen. We press **F5** to verify the creation of the Split definition and press **F3** to leave the Split menu.

In an AFC definition we can activate the split definition **IFLETTER**, by using function **B**:

```
         Update AFC-functions attached to output queues            AFC305D

Output queue . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812

Seqnbr Funct Form type  Save                              New output queue









Seqnbr Function
  1,0    B        Split spooled file

                            Split definition name  .     IFLETTER__




                                       F11=Delete          F12=Cancel
```

The Split definition will cause the demo spool entry to have pages extracted and another SCS spool entry with form type **IFLET** is created and placed after the original spool entry in the queue.

We can now merge the new spool entry with an overlay conditioned by the Formtype **IFLET** or by using an Overlay Selector:

```
        Update AFC-functions attached to output queues             AFC305D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     QUSRSYS

Seqnbr Funct Form type  Save                              New output queue
 0001    B     DEMO
               Split, definition: IFLETTER




Seqnbr Function   Attributtes of input file for which to execute the function
  2,0    1
                  Form type  . . . . . . . . . . . . . . . IFLET
                  Save attribute . . . . . . . . . . . .
                  Jobname  . . . . . . . . . . . . . . .
                  Spooled file name  . . . . . . . . . .
                  Device file  . . . . . . . . . . . . .
                    Library  . . . . . . . . . . . . . .
                  Program that opened file . . . . . . .
                    Library  . . . . . . . . . . . . . .
F3=Exit            F13=Fold/Unfold                          F12=Cancel
```

```
Seqnbr Function
  1,0    1                 Merge with overlay

                           Output queue for merged print  . AFC_OUT1___
                             Library  . . . . . . . . . . .    APF3812___
                           InterForm 400 printer type . . . HP4________
                           Unicode output . . . . . . . . . *INPUT   *INPUT,*YES
                           Find overlay in forms type table  N     (Y N)

F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
```

Finishing Definitions

This function is used for departmental printing with need for immediate stapling, folding and/or insertion into envelopes and other related functions.

Currently the following finishing functions are supported:

1. Folding and insertion into envelopes using the Prinserter® (Winserter in the US).
2. Stapling on Canon, HP, Kyocera, Lexmark, IBM, Océ, Ricoh and Xerox models.
3. Various insertion systems e.g. some Pitney Bowes, Böwe, Neopost, Bell+Howell and PFE models are supported.
4. Folding and insertion into envelopes using the PFE MailPrinter
5. E-mail and fax distribution. Fax distribution requires the purchase of a fax module for InterForm400.
6. PDF file creation
7. Reformatting of spooled files

Note that the printer type must be a **HP4**, **HP4D** or **HP4_PJL** type device when using the finishing functions.

Defining Prinserter® Pre-process Definition. Fixed number of pages

This function is typically used for mailings which is based on the same number of pages for all recipients.

Enter Menu point **4. Finishing Definitions** on the menu **5. Work with Auto Forms Control**. Enter **F6** to create a new finishing definition and select **01** for making the definition valid for the Prinserter:

```
         Update Finish Definition                                  PRS310D

Definition name  . . . . . : TESTDEF

Description  . . . . . . . : test of prinserter

Type of Finishing  . . . . : 01         Prinserter

F3=Exit                                                  F12=Cancel
```

If Copy Management is used in the overlay intended to be used for the inserted pages, the next screen must be filled in. The Prinserter definition will then check the overlay for the number of pages defined in Copy Management.

```
         Create Finish Definition                                  PRS310D

Definition name  . . . . . . PRINS
Description  . . . . . . . .

   ..........................................................
Ty :                                                        :
   : Already during the Prepare for Finishing function, the :
   : system has to know the number of copies of the individual :
   : page. If a succeeding merge with overlay function uses copy :
   : management, you will have to tell here which overlay will :
   : be used during the merge function.                     :
   :                                                        :
   :     Overlay name . . . . . . . _____                   :
   :       File set . . . . . . . .   _____                 :
   :     Or                                                 :
   :     Selector name  . . . . . . _______                 :
   :     Primary/Secondary set  . . ____        *PRI, *SEC  :
   :                                                        :
   : F3=Exit            F4=Prompt           F12=Cancel      :
   :                                                        :
   :........................................................:
F3=Exit                                                F12=Cancel
```

Now enter the fixed number of pages that should go into the envelope. If an enclosure is required, this is included in this number.

```
         Update Finishing Definition                               PRS310D

Definition name  . . . . :   TESTDEF


Description  . . . . . . .   Mailing , 4 pages per envelope_

Type of Finishing  . . . . : 01         Prinserter

Pages per envelope . . . .   4___      *VAR, 1-5
Enclosure  . . . . . . . .   ____      *NO, *YES
Flap size mm . . . . . . .   ____      36-61
Seal envelope  . . . . . .   ____      *NO, *YES









F3=Exit                                                F12=Cancel
```

Definition name: Referred to by the AFC function **C=Prepare for Finishing**

Pages per envelope: State a fixed set of pages, e.g. by stating 4 will produce 10 envelopes from a 38 page spool entry.

When Description and Pages per envelope are filled in, pressing Enter will bring up the screen above. Now fill in:

Enclosure: Enclosures can be pre-folded, folded manually, or folded by the Prinserter.

Flap size mm: Flap size of the Envelope measured in millimetres as the widest point of the envelope flap. This is mainly important in connection to sealing.

Seal envelope: Seal envelope with water.

When pressing Enter the Prinserter definition is updated.

Go to section **Using the Prinserter definition with Auto Forms Control** on page 265 in order to test the definition. You can use the spool entry which can be created under Service Functions in the administration menu. This spool entry will be referred to for the examples in the following sections.

Defining Prinserter® pre-process Definition. Variable number of pages

The more advanced pre-processors can on basis of boolean equations determine the level break between pages in a spool entry, and thereby allow varying number of pages to be inserted into envelopes. The pre-processor can additionally define that the varying pages should be sorted in to groups where each group contains a fixed number of pages. This is in reality a postage group sorting mechanism.

Defining Print Order of Sorted Groups

Enter Menu point **4. Finishing Definitions** in the Auto Forms Control menu. Press **F6** to create a new Finishing definition and select **01** to make it valid for the Prinserter.

```
    Create Finishing Definition                                  PRS310D

Definition name  . . . . :   TESTDEF

Description  . . . . . . .   Our first Prinserter definition
Pages per envelope . . . .   *VAR      *VAR, 1-5

Flap size mm . . . . . . .    40       36-61
Seal envelope  . . . . . .   *YES       *NO, *YES
Pages per envelope group 1   _
Enclosure group-1  . . . .   _
Pages per envelope group 2   _
Enclosure group-2  . . . .   _
Pages per envelope group 3   _
Enclosure group-3  . . . .   _
Pages per envelope group 4   _
Enclosure group-4  . . .     _
Pages per envelope group 5   _
Enclosure group-5  . . . .   _

F3=Exit                                                  F12=Cancel
```

Definition name: Referred to by the sub-system function **C=Prepare for Finishing**

Pages per envelope: Define ***VAR** (Variable) for Pages per envelope

When **Enter** is pressed the above screen will appear. Now fill in:

Flap size mm: Flap size of the Envelope measured in millimetres as the widest point of the envelope flap. This is mainly important in connection with sealing.

Seal envelope: Seal envelope with water.

Pages per envelope

Group 1 - 5: Up to 5 different postage franking groups can be defined. Valid values are 1 to 5.
If none of the postage groups are defined, all pages will be printed to the upper bin. If only the first group is filled in with 5 pages, all sets of pages will be inserted into envelopes in the same order as the original spool entry.
If more postage groups are filled in the original spool entry will be sorted so sets of pages from 1 page to the number of pages defined in group 1 are inserted first. Then sets with pages defined in group 1 plus 1 page, to the number defined in group 2, are inserted. etc.
If pages for one recipient exceeds the highest page count defined in any group, these pages will be printed to the upper bin.
Any set of pages that exceeds 5 pages (excl. enclosure) will automatically be printed to the upper bin in order to be inserted manually into larger envelopes.

Enclosure Group 1-5:
An enclosure can be defined for each of the groups, as this of course affects the weight of the envelope. Valid values are 0=no enclosure and 1=add enclosure

Example 1, Non sorted

We want all sets of pages from 1 to 3 pages to be inserted in the same order as the original spool entry. Sets of pages from 4 to more pages should not be inserted but be printed to the upper bin. All envelopes should have en enclosure:

```
Pages per envelope group 1   3
Enclosure group-1  . . . .   1
Pages per envelope group 2   _
Enclosure group-2  . . . .   _
Pages per envelope group 3   _
Enclosure group-3  . . . .   _
Pages per envelope group 4   _
Enclosure group-4  . . .     _
Pages per envelope group 5   _
Enclosure group-5  . . . .   _
```

Try stating 1 instead of 3 in the above sample for **Pages per envelope Group 1** and run the test spool entry with this definition combined with the definitions of either example 1 on page 262 Or example 2 on page 263. You will then notice that the letters for Florence Flowers are not inserted, as the number exceeds the maximum number of sheets in one envelope defined above.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the Prinserter definition.

Example 2, Sorting in Ascending Weight

Same example as above, but all envelopes with only one page should be printed first, then envelopes with 2 pages and finally all envelopes with 3 pages:

```
Pages per envelope group .   1
Enclosure group-1  . . . .   1
Pages per envelope group .   2
Enclosure group-2  . . . .   1
Pages per envelope group .   3
Enclosure group-3  . . . .   1
Pages per envelope group .   _
Enclosure group-4  . . .     _
Pages per envelope group .   _
Enclosure group-5  . . . .   _
```

Try running this example with the test spool entry combined with the definitions of either example 1 on page **262** or example 2 on page **263**. You will then notice that the letters for Forrest Friends are sorted so it is printed before the envelope with the two letters for Florence Flowers.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the Prinserter definition.

Example 3 , Sorting in Franking groups:

By measuring the weight of envelopes with varying number of pages we have determined that an envelope with 2 page and 1 enclosure is within the lowest postage group informed by our governmental post office.
The next postage group allows max. 5 pages in all, which means we should decide if we want to pay the higher charge just for adding the enclosure which will bring the total number of pages in the envelope to 6. We decide not to add an enclosure for these envelopes in order to stay in the cheaper postage group.

We enter the following definitions:

```
Pages per envelope group .   2
Enclosure group-1  . . . .   1
Pages per envelope group .   4
Enclosure group-2  . . . .   1
Pages per envelope group .   5
Enclosure group-3  . . . .   0
Pages per envelope group .   _
Enclosure group-4  . . .     _
Pages per envelope group .   _
Enclosure group-5  . . . .   _
```

The above definition will cause all sets of pages of 1 or 2 to be inserted randomly according to the input spool entry, but with an enclosure (ie. max. 3 sheets total). Secondly all sets with 3 or 4 pages plus an enclosure are processed (ie. max. 5 sheets total). Finally we prevent moving into the higher charge (which starts with 6 pages per envelope) by defining that envelopes with 5 pages should not have an enclosure.

We do not have to take into account what to do when 6 or more pages are attempted to be inserted as InterForm400® automatically outputs these pages in the upper tray for manual insertion. It can then be decided at that stage if the enclosure should be added manually.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the Prinserter definition.

Defining PFE MailPrinter® Pre-process Definition

This pre-processor can on basis of boolean equations determine the level break between pages in a spool entry, and thereby allow varying number of pages to be inserted into envelopes. The pre-processor can additionally define that the varying pages should be sorted in to groups where each group contains a fixed number of pages. This is in reality a postage group sorting mechanism.

This function is typically used for mailings which is based on the same number of pages for all recipients.

Enter Menu point **4. Finishing Definitions** on the menu **5. Work with Auto Forms Control**. Enter **F6** to create a new finishing definition and select **04** for making the definition valid for the PFE MailPrinter:

```
         Update Finish Definition                                    PRS310D

Definition name  . . . . . : FINISHPFE
Description  . . . . . . . : Finish definition for PFE Mail Printer


Type of Finishing  . . . . : 04         PFE Mail-Printer

Envelope type  . . . . . .  2         1 = Window envelope
                                      2 = Printed envelope









F3=Exit                                                  F12=Cancel
```

Definition name: Referred to by the sub-system function **C=Prepare for Finishing**

Envelope Type: Here we can decide whether we use a window envelope, or we want to use a plain envelope, where we get the possibility of printing on the envelope.

```
         Create Finish Definition                                  PRS310D

Definition name  . . . . . : PFEDEF1
Description  . . . . . . . : Finish definition for PFE Mail Printer


Type of Finishing  . . . . : 04         PFE Mail-Printer

Envelope type  . . . . . . : 2          Printed envelope

Overlay for envelope
   Overlay name . . . . .    ________
     File set . . . . . .      ________
   or selector  . . . . .    ________
   Primary / secondary  .    ________     *PRI *SEC

Overlay for contents
   Overlay name . . . . .    ________
     File set . . . . . .      ________
   or selector  . . . . .    ________
   Primary / secondary  .    ________   *PRI *SEC

F3=Exit           F4=Prompt                              F12=Cancel
```

Overlay or Overlay Selector for envelope will only appear, if we have selected 2. Printed envelope. This overlay could contain logo, sender address and a franking mark. The definition for placing the Recipient name and address on the printed envelope, should also be defined in the envelope overlay. The envelope overlay MUST be in the same file set as the overlay for the contents.

Overlay or Overlay Selector for contents should be filled in as per the requirement. Note if Copy Management is defined in the overlay for the contents, this will also be handled by InterForm400®. The overlay for the contents MUST be in the same file set as the overlay for the Envelope.

! IMPORTANT !

*When defining a 1. Merge with overlay in the Sub-system AutoForms Control following a Finishing definition, the overlay name that should be referred to is the overlay for the contents defined above and **NOT** for the envelope.*

Defining Print Order of Sorted Groups

Enter Menu point **4. Finishing Definitions** in the Auto Forms Control menu. Press **F6** to create a new Finishing definition and select **01** to make it valid for the MailPrinter.

```
         Update Finish Definition                                  PRS310D

Definition name  . . . . . : PFEDEF1
Description  . . . . . . . : Finishing Definition for PFE MailPrinter


Type of Finishing  . . . . : 04         PFE Mail-Printer

Envelope type  . . . . . . : 2          Printed envelope

Seal envelope  . . . . . . . *YES       *NO, *YES

Pages per envelope group-1 . _
Enclosure group-1  . . . . . _
Pages per envelope group-2 . _
Enclosure group-2  . . . . . _
Pages per envelope group-3 . _
Enclosure group-3  . . . . . _
Pages per envelope group-4 . _
Enclosure group-4  . . . . . _
Pages per envelope group-5 . _
Enclosure group-5  . . . . . _
```

Seal envelope: Seal envelope with water.

Pages per envelope

Group 1 - 5: Up to 5 different postage franking groups can be defined. Valid values are 1 to 5 .
If none of the postage groups are defined, all pages will be printed to the upper bin. If only the first group is filled in with 5 pages, all sets of pages will be inserted into envelopes in the same order as the original spool entry.
If more postage groups are filled in the original spool entry will be sorted so sets of pages from 1 page to the number of pages defined in group 1 are inserted first. Then sets with pages defined in group 1 plus 1 page, to the number defined in group 2, are inserted. etc.
If pages for one recipient exceeds the highest page count defined in any group, these pages will be printed to the upper bin.
Any set of pages that exceeds 5 pages (excl. enclosure) will automatically be printed to the upper bin in order to be inserted manually into larger envelopes.

Enclosure Group 1-5:
An enclosure can be defined for each of the groups, as this of course affects the weight of the envelope. Valid values are 0=no enclosure and 1=add enclosure

Example 1, Non sorted

We want all sets of pages from 1 to 3 pages to be inserted in the same order as the original spool entry. Sets of pages from 4 to more pages should not be inserted but be printed to the upper bin. All envelopes should have en enclosure:

```
Pages per envelope group 1   3
Enclosure group-1  . . . .   1
Pages per envelope group 2   _
Enclosure group-2  . . . .   _
Pages per envelope group 3   _
Enclosure group-3  . . . .   _
Pages per envelope group 4   _
Enclosure group-4  . . . .   _
Pages per envelope group 5   _
Enclosure group-5  . . . .   _
```

Try stating 1 instead of 3 in the above sample for **Pages per envelope Group 1** and run the test spool entry with this definition combined with the definitions of either example 1 on page 262 Or example 2 on page 263. You will then notice that the letters for Florence Flowers are not inserted, as the number exceeds the maximum number of sheets in one envelope defined above.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the PFE MailPrinter definition.

Example 2, Sorting in Ascending Weight

Same example as above, but all envelopes with only one page should be printed first, then envelopes with 2 pages and finally all envelopes with 3 pages:

```
Pages per envelope group .   1
Enclosure group-1  . . . .   1
Pages per envelope group .   2
Enclosure group-2  . . . .   1
Pages per envelope group .   3
Enclosure group-3  . . . .   1
Pages per envelope group .   _
Enclosure group-4  . . .     _
Pages per envelope group .   _
Enclosure group-5  . . . .   _
```

Try running this example with the test spool entry combined with the definitions of either example 1 on page **262** or example 2 on page **263**. You will then notice that the letters for Forrest Friends are sorted so it is printed before the envelope with the two letters for Florence Flowers.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the PFE MailPrinter definition.

Example 3 , Sorting in Franking groups:

By measuring the weight of envelopes with varying number of pages we have determined that an envelope with 2 page and 1 enclosure is within the lowest postage group informed by our governmental post office.
The next postage group allows max. 5 pages in all, which means we should decide if we want to pay the higher charge just for adding the enclosure which will bring the total number of pages in the envelope to 6. We decide not to add an enclosure for these envelopes in order to stay in the cheaper postage group.

We enter the following definitions:

```
Pages per envelope group .   2
Enclosure group-1  . . . .   1
Pages per envelope group .   4
Enclosure group-2  . . . .   1
Pages per envelope group .   5
Enclosure group-3  . . . .   0
Pages per envelope group .   _
Enclosure group-4  . . .     _
Pages per envelope group .   _
Enclosure group-5  . . . .   _
```

The above definition will cause all sets of pages of 1 or 2 to be inserted randomly according to the input spool entry, but with an enclosure (ie. max. 3 sheets total). Secondly all sets with 3 or 4 pages plus an enclosure are processed (ie. max. 5 sheets total). Finally we prevent moving into the higher charge (which starts with 6 pages per envelope) by defining that envelopes with 5 pages should not have an enclosure.

We do not have to take into account what to do when 6 or more pages are attempted to be inserted as InterForm400® automatically outputs these pages in the upper tray for manual insertion. It can then be decided at that stage if the enclosure should be added manually.

When filled in press Enter, and continue with section **Define Level Break Conditions** on page 261, to finalise the PFE MailPrinter definition.

Defining Stapling Pre-process Definitions

Enter Menu point **4. Finishing Definitions** on the menu **5. Work with Auto Forms Control**. Enter **F6** to create a new finishing definition and select **02** for making the definition valid for stapling:

```
         Create Finish Definition                                  PRS310D

Definition name  . . . . . . STAPLE
Description  . . . . . . . . test PH


Type of Finishing  . . . . . 02       01 = Prinserter
                                      02 = Stapling per Recipient
                                      03 = Prepare for inserting
                                      04 = PFE Mail-Printer
                                      05 = Prepare for E-mail/Fax
                                      06 = PDF Filenaming
                                      07 = Reformat Spooled File
                                      08 = XML definition









F3=Exit                                                 F12=Cancel
```

If Copy Management is used in the overlay intended to be used for the inserted pages, the next screen must be filled in. The Prinserter definition will then check the overlay for the number of pages defined in Copy Management.

If the field below is left blank, and the overlay selected for the pages to be inserted does contain Copy Management, the result will be unpredictable. Note that the overlay entered here is not necessarily the one being printed, but is merely used for pre-defining a value for the Copy Management.

```
         Create Finish Definition                                  PRS310D

Definition name  . . . . . . STAPLE
Description  . . . . . . . . test PH

   .............................................................
Ty :                                                           :
   : All ready during the Prepare for Finishing function, the  :
   : system has to know the number of copies of the individual :
   : page. If a succeeding merge with overlay function uses copy :
   : management, you will have to tell here which overlay will :
   : be used during the merge function.                        :
   :                                                           :
   :     Overlay name . . . . . .  __________                  :
   :       File set . . . . . .    __________                  :
   :     Or                                                    :
   :     Selector name  . . . . .  ________                    :
   :     Primary/Secondary set  . .  ____        *PRI, *SEC    :
   :                                                           :
   : F3=Exit            F4=Prompt           F12=Cancel         :
   :                                                           :
   :...........................................................:
F3=Exit                                                 F12=Cancel
```

Select the printer manufactorer and printer model via the screen below:

```
Select printer type for stapeling

Printer Manufacturer . . . . _      1 = HP
                                    2 = Lexmark
                                    3 = IBM
                                    4 = Kyocera
                                    5 = Xerox
                                    6 = Océ
                                    7 = Canon
                                    8 = Ricoh
                                    9 = Minolta

Notice: Stapeling requieres use of
        printertype HP4_PJL or HP4D_PJL.


F3=Exit                                 F12=Cancel
```

Select U = User defined PJL to use your own self defined PJL sequences. Refer to page **422** for more information.

Continue with section **Define Level Break Conditions** on page 261, to finalise the stapling definition.

Defining Insertion Pre-process Definitions

Enter Menu point **4. Finishing Definitions** on the menu **5. Work with Auto Forms Control**. Enter **F6** to create a new finishing definition and select **03** for making the definition valid for external insertion systems:

```
         Update Finish Definition                                  PRS310D

Definition name  . . . . . : Stapltst

Description  . . . . . . . : Test af stapling

Type of Finishing  . . . . : 03         Prepare for inserting

Inserting equipment  . . . . __         01 = Prinserter
                                        02 = Stapling per Recipient
                                        03 = Prepare for inserting
                                        04 = PFE Mail-Printer
                                        05 = Prepare for E-mail/Fax
                                        06 = PDF Filenaming
                                        07 = Reformat Spooled File
                                        08 = XML definition

F3=Exit                                                 F12=Cancel
```

The inserter systems supported are:

01 = Pitney Bowes OMR
02 = PFE Minimailer 2/3 Plus
03 = BÖWE OMR
04 = Neopost SI 68/72/76
05 = Pitney Bowes BARCODE
06 = PFE Automailer-2
07 = Bell+Howell
08 = Pitney Bowes OMR for DI380
09 = Neopost BARCODE
10 = NEOPOST 100/140 OMR

Select **01** and press Enter to define the pre-process definitions for the Pitney Bowes insertion system:

```
         Update Finish Definition                                  PRS310D

Inserting equipment  . . . : Pitney Bowes

Placement of optical marks
    Rotation . . . . . . . ___
    From top edge  . . . . . ______
    From left  . . . . . . . ______

Print sequence . . . . . . . _          1=Normal
                                        2=Pages in reverse order
                                        3=Reverse order per recipient

F3=Exit                                                 F12=Cancel
```

Placement of optical marks:
Refer to the documentation of your insertion system for further information on the optical marks.

Rotation: The available values for rotation are: 000, 090, 180, 270 degrees.

From top edge: Absolute margin from top edge of the page dissolved in inches and pels (see **Measuring formats** page 73).

From left edge: Absolute margin from the left edge of the page dissolved in inches and pels (see **Measuring formats** page 73). Note that this value will be added to the left margin value of the overlay command type **8. Tabulator**.

Print Sequence:
This option defines the order which the pages should be output from **InterForm400®**:

Normal: The output order matches the input order.

Pages in reverse order: The output order of the entire print job is reversed.

Reverse order per recipient: The output order is only inversed within the same recipient according to the level break conditions.

Press **Enter** to continue defining the Pitney Bowes pre-processing:

```
         Update Finish Definition                                PRS310D

Inserting equipment  . . . : Pitney Bowes

Max. pages per envelope  . . ___

What to do if more than max
pages to a recipient . . . . _        1=Outsorting
                                      2=More than 1 envelope

Can there be code for out-
sorting in the printout  . . _        1=Yes  2=No

If YES to the above
    Line number  . . . . . . ___
    Position . . . . . . . . ___
    Value  . . . . . . . . . _




F3=Exit                                                 F12=Cancel
```

Max. pages per envelope: This indicates the maximum pages to be inserted into an envelope. InterForm400® will insert a “close envelope” command at this point.

What to do if more than max. pages to a recipient:

Outsorting. InterForm400® will inform the Insertion system to outsort the pages for this recipient ID according to the selections on the next screen.

More than 1 envelope:
InterForm400® will automatically continue insertion in new envelopes.

Can there be code for outsorting in the printout:

Yes: InterForm400® will insert the outsorting command selected on the next screen, only when the code value defined below is found.

No: InterForm400® will insert the outsorting command selected on the next screen, whenever a set of pages for a recipient exceeds the number defined in **Max. pages per envelope**.

If YES to the above.

Line number. The line number to find the outsorting code

Position: The coloumn position to find the outsorting code

Value: The character value for the outsorting code, that will inform InterForm400® to insert the outsorting command according to the selection on the next screen.

Press **Enter** to define the type of Outsorting mark:

```
         Update Finish Definition                                PRS310D

Inserting equipment  . . . : Pitney Bowes

Which types of marks are used

  1=Select

_  Benchmark (BM)
_  End of collation (EOC)
_  End of collation mark absence (ECA)
_  Beginning of collation (BOC)
_  Divert to Deck (DTD)
_  Wrap around sequence (WAS) Ascending
_  Wrap around sequence (WAD) Decending
_  Parity (PR)
_  Safty (SF)




F3=Exit                                                F12=Cancel
```

Refer to the documentation of your Pitney Bowes insertion system for a thorough description of the outsorting marks.

When filled in press Enter, and continue with the next section **Define Level Break Conditions**.

Example: Neopost BARCODE

For the Neopost barcode (and others) the screens look a bit different. After the copy management screen (which is shown for all inserter definitions) this screen is shown:

```
         Update Finish Definition                                  PRS310D

Inserting equipment  . . . : Neopost BARCODE

Barcode reader configuration - Please refer to the Neopost bar code scheme manual

  Number of digits in N of M . . . . . : 0    0 - 2
  Swap N AND M . . . . . . . . . . . . : _    1=Yes  2=No
  Number of digits in sheet sequence . : 0    0 - 3
  Number of digits in group sequence . : 0    0 - 3
  Use insert/acumulate codes . . . . . : _    1=Yes  2=No
  Use divert-1 codes . . . . . . . . . : _    1=Yes  2=No
  Use divert-2 codes . . . . . . . . . : _    1=Yes  2=No
  Number of selective input feeders  . : 0    0 - 7
  Seeling control  . . . . . . . . . . : _    1=Yes  2=No
  Number of envelope selections  . . . : 0    0 - 3
  Number of exit selections  . . . . . : 0    0 - 3
  Stop function  . . . . . . . . . . . : _    1=Yes  2=No



F3=Exit                                                  F12=Cancel
```

Please refer to the Neopost barcode documentation for details of the options above.

On the next screen you define which code 39 barcode you want to use, where to print it and if you want out sorting (pages that should not be inserted into envelopes) and how to identify pages to be out sorted:

```
         Update Finish Definition                                  PRS310D

Inserting equipment  . . . : Neopost BARCODE

Placement of barcode
    Rotation . . . . . . . . 000
    From top edge  . . . . .  1,000
    From left  . . . . . . .  1,000
    Font . . . . . . . . . . 4600     4600-4699

Can there be code for out-
sorting in the printout  . . 2        1=Yes  2=No

If YES to the above
    Line number  . . . . . .  0
    Position . . . . . . . .  0
    Value  . . . . . . . . . _



F3=Exit            F4=Prompt                             F12=Cancel
```

On the next screen you setup the spooled file attributes of the new spooled files created by this definition:

```
         Update Finish Definition                                PRS310D

Inserting equipment  . . . : Neopost BARCODE


                                          Form type       User data
Normal print
  Max pages in an envelope        3       MAX3            _________

Max number of envelopes
to a recipient                    2

Recipients with more
than max envelopes                        MORE6           _________

Out sorting                               NO_ENVELOP      _________




F3=Exit                                                   F12=Cancel
```

With the setup above 3 kinds of PRSPRINT spooled files might be created:

Form type=MAX3 Envelopes is allowed to contain up to max. 3 pages above. Spooled files containing pages to be inserted into envelopes will get the form type **MAX3**.

Form type=MORE6

Above we only allow 2 envelopes for each recipient (each containing up to 3 pages), so it means that pages for customers that are to get more than 6 pages will get the form type: MORE6. These pages might be merged and printed and manually put into envelopes.

Form type=NO_ENVELOP

If you have setup a condition for out sorting, then these pages will get the form type NO_ENVELOP in this case.

On the next page you can have one or more sequence numbers:

```
         Work with Finish Recipient-ID                           PRS320D

Definition name  . . . . :   NEO_BAR

Start with . . . . .

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt      Seqnbr.    Description
 _       001        all









                                                                    End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

For each sequence number you define this:

```
         Update Finish Recipient-ID                                PRS330D

Definition name  . . . . :   NEO_BAR

Sequence number  . . . . :     1
Description  . . . . . . .   all

Page selection criteria
                  Print line   Position   Oper  Compare value
                      ___      ___ - ___  ____  ____________________________
                      ___      ___ - ___  ____  ____________________________
                      ___      ___ - ___  ____  ____________________________


Find recipient ID in the following positions
                  Print line   Position
                      13       57 - 60
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
F3=Exit          F12=Cancel      F13=Select spooled file
```

This works exactly as for the sorting definition. If the text found stated as recipient ID above changes, then InterForm400 will insert the pages into a new envelope. This information should normally be the customer number or a document number if you prefer to create a letter for each document. If the page selection criteria is blank, then the data of the recipient is retrieved from all pages in the spooled file.

If the customer number is only found on the first page of each document, then you need to set a Page selection criteria, which only selects the first page of each document e.g. like this:

```
         Update Finish Recipient-ID                                PRS330D

Definition name  . . . . :   NEO_BAR

Sequence number  . . . . :     1
Description  . . . . . . .   all

Page selection criteria
                  Print line   Position   Oper  Compare value
                      1        1 -  8    EQ    Page   1
                               -
                               -


Find recipient ID in the following positions
                  Print line   Position
                      13       57 -  60
                               -
                               -
                               -
                               -
                               -
F3=Exit          F12=Cancel      F13=Select spooled file
```

Simular you can add multiple sequence numbers if the recipient ID is not found in a fixed line. Refer to page 239 for additional examples of how this screen can be setup.

How to distribute E-mails and faxes in InterForm400®:

You can send emails from InterForm400 with a few email commands (e.g. MRGSPLFPDF), but normal distribution of email should normally be done with the feature described below.

Setup of E-mailing is done in three steps:

1. Create a new type of finishing Definition (Type 05=E-mail). This splits up the spool file depending on the spool file page data and places details in an extra header page of each PRSPRINT spooled file, that is generated (one spooled file per email).

2. Insert execution of the e-mail Finishing Definition in Auto Forms Control. This will generate two kinds of spooled files: **PRSPRINT** spooled files and a **NONMAIL** spooled file (containing the pages where no email/fax receiver could be found).

3. Insert execution of function P=Send PDF E-mail in Auto Forms Control. This definition should only accept the PRSPRINT spooled files generated by the email finishing definition above.

Note, that the E-mail/Fax finishing definition can send both e-mail and faxes in one procedure (Faxing requires purchase of InterFax). If both a fax number and an e-mail is found in the spooled file or returned via a program for one customer then InterForm400 will use the e-mail address. (If the field for the e-mail address is blank InterForm400 will look for a fax number).

NOTE

In order to get PDF output you need to purchase the PDF module or the classic package for InterForm400.

Support for X-headers in e-mails

It is possible to insert 'hidden' information in an email in form of 'X-Headers'. The X-header of an email is not directly visible, but can be seen e.g. if you open the generated .eml file in Notepad or a similar editor:

```
1  Sender: kse@interform400.com
2  From: kse@interform400.com
3  To: kse@interform400.com
4  Subject: Regarding invoice 1001
5  Date: Mon, 14 Mar 2016 15:47:45 +0100
6  MIME-Version: 1.0
7  Message-ID: <2016-03-14-15-47-45-438000@interform400.com>
8  ContactPerson:   Susan Sunflower
9  DocumentNo.:   1001
10 DocumentType:   Invoice
11 Content-Type: multipart/mixed; boundary="PART.BOUNDARY.1"
12
13 This is a multi-part message in MIME format.
14
15 --PART.BOUNDARY.1
16 Content-Type: text/plain; charset="UTF-8"
17 Content-Transfer-Encoding: base64
```

The X-headers are marked with the blue frame in the screen shot above. You can insert an X-Header key and value. They can e.g. be set as variables in the email finish definition like this:

```
         Define email XHEADERS                                    XHD400D

Definition name  . . . . . : DEMO_EMAIL
Description  . . . . . . . : Demo email



XHEADER                          Value
ContactPerson                    *V01
DocumentNo.                      *V02
DocumentType                     Invoice
                                 
                                 
                                 
                                 
                                 
                                 
                                 



F3=Exit    F12=Cancel
```

The X-Header can be used in the email finish definition below (via option 15. Define email XHEADERS), as well as the MRGSPLFPDF and SNDEML commands. As you can see, you can use either constants or variables for the X-header values.

The E-mail/Fax Finishing Definition

You can work with the finishing functions if you from the InterForm400® main menu choose **5. Work with Auto Forms Control** and **4. Finish Definitions**. You can now add a new finishing Definition by pressing F6:

```
         Create Finish Definition                                 PRS310D

Definition name  . . . . . . DEMO______
Description  . . . . . . . . Distribution of the Demo spool file_____________


Type of Finishing  . . . . . 05       01 = Prinserter
                                      02 = Stapling per Recipient
                                      03 = Prepare for inserting
                                      04 = PFE Mail-Printer
                                      05 = Prepare for E-mail/Fax
                                      06 = PDF Filenaming
                                      07 = Reformat Spooled File









F3=Exit                                                 F12=Cancel
```

We are creating a new finishing definition for the InterForm400 Demo spool file.
Press Enter to create the finishing definition:

```
         Work with email/Fax definition                          MAI300D
Definition name  . . . . . : DEMO_EMAIL                 CCSID ....: 00037
Description  . . . . . . . : Demo email X-header
Select one of the following options:
   1. How to find email address / Fax number
   2. Key definition
   3. Definition variables
   4. Default PDF-file name
   5. Definition email text / Cover page text
   6. Definition recipient-ID
   7. Email addresses and Fax numbers
   8. Senders email address
   9. Encryption and Signature
  10. PDF bookmark definition
  11. PDF embedding definition
  12. OutBox directory
  13. Mail text embedded images
  14. Email address syntax error handler
  15. Define email XHEADERS
  16. ZUGFeRD definition name
  17. Archive in InterArchive
Option: __
F3=Exit                                                 F12=Cancel
```

Below we go through the elements of the E-mail finishing definition and do the necessary setup in order to distribute the Demo spool file.

1. How to find E-mail address / Fax number

```
         Work with E-mail/Fax definition                         MAI300D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spooled file

How to find E-mail address / Fax number

Select one of the following options:

  1. By key
  2. By user exit program
  3. Find in spooled file
  4. Send to spooled file owner

Option:  _









F3=Exit                                                 F12=Cancel
```

On the screen above you define how you intend to determine the e-mail address or fax number to send to for the individual pages. The selection here affects these other options:

1. By key — It will open up option '2. Key definitions' but with the user exit program disabled. Also option '7. E-mail addresses and Fax numbers ' will be enabled.

2. By user exit program — Will open up option '2. Key definitions' with the user exit program enabled. Option '7. E-mail addresses and Fax numbers ' will be disabled.

3. Find in spooled file — Options '2. Key definition' and '7. E-mail addresses and Fax numbers' will both be disabled. (The elements for the e-mail is found in option '6. Definition recipient-ID'). Please refer to special instructions on page 242.

4. Send to spooled file owner

Send the email to the spooled file owner. The name and email address must be configured for the user profile in the system directory. You can work with the entries in the system directory with the command, WRKDIRE. Here you need to specifiy the name of the user:

```
                            Change Directory Entry

User ID/Address . . . . :   KSE       PMK11

Type changes, press Enter.

  Description . . . . . .   Kim Egekjær
  System name/Group . . .   PMK250                 F4 for list
  User profile  . . . . .   KSE                    F4 for list
  Network user ID . . . .   KSE      PMK11

  Name:
    Last  . . . . . . . .   Egekjær
    First . . . . . . . .   Kim
    Middle  . . . . . . .   Starup
    Preferred . . . . . .   Kim
    Full  . . . . . . . .   Kim Starup Egekjær



                                                                   More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F18=Display location details
F19=Change name for SMTP           F22=Remove name for SMTP
```

You also need to setup the email address by pressing F19=Change name for SMTP:

```
                              Change Name for SMTP
                                                            System:   PMK250
 User ID/Address . . . . . :   KSE      PMK11



 Type choices, press Enter.

   SMTP user ID  . . . . . .   MyEmail
   SMTP domain . . . . . . .   interform400.com





   SMTP route  . . . . . . .







 F3=Exit   F12=Cancel
```

The part before the @-sign is inserted as the SMTP user ID and the domain (the part after the @-sign) should be inserted as the SMTP domain as above. (The example above is for the email address: MyEmail@interform400.com).

These are the prerequisites in order to send an email to the spooled file owner via this option:

- You need to define a text version in option, **5. Definition email text / Cover page text**.
- You need to add a sequence line in option, **6. Definition recipient-ID,** and here define a position of the dummy key, *KEY1. You can e.g. refer to a blank position in the spooled file.
- In the system directory the spooled file owner need to have an **email address** registered

as the SMTP information as shown above.

- In the system directory the spooled file owner need to have a '**Preferred name**', which is not blank.

If any of these prerequisites are not met, a NONMAIL spooled file will be created (instead of a PRSPRINT), and no email will be sent.

2. Key definitions

```
         Change E-mail/Fax key definition                          MAI310D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file

Length key field-1 . . . .   __4  (1 - 30)
Field type key field-1 . .   1    1=Numeric 2=Alfanum. 3=Alfanum. lowercase
Allow blank key field-1  .   N    (Y N)
Key field-1 description  .   Customer number_____

Length key field-2 . . . .   ___  (1 - 30)
Field type key field-2 . .   _    1=Numeric 2=Alfanum. 3=Alfanum. lowercase
Allow blank key field-2  .   _    (Y N)
Key field-2 description  .   ____________________

Length key field-3 . . . .   ___  (1 - 30)
Field type key field-3 . .   _    1=Numeric 2=Alfanum. 3=Alfanum. lowercase
Allow blank key field-3  .   _    (Y N)
Key field-3 description  .   ____________________

Mail exit program . . . . .  __________   *NONE, name
  Library  . . . . . .  . .   __________

F3=Exit   F12=Cancel
```

Up to 3 **keys** can be defined. They are identifying the customers by e.g. customer number, department or name. These are the identifiers, that are looked for in the spool file.

You can decide to call a mail exit program. The finishing definition name, all keys and variables are transferred to the program, that can return e.g. what e-mail address to send to.

Sources for mail exit programs can be seen in member, MAILEXIT, MAILEXIT02, MAILEXIT03 and MAILEXIT04 in source file, APISRC in library, APF3812:

MAILEXIT This is the first demo source that was made. (Use format = 01 when calling this). This program is mainly included backwards compatibility.

MAILEXIT02 This is called with parameter format=02. With this you can return the type of text for the contents of the e-mail. Refer to the description of 'Text and - format' on page 238 for more details.

MAILEXIT03 Called with parameter format=03. Includes the functions of MAILEXIT02 and includes also the possibility to return an additional receiver of the e-mail (CC:).

MAILEXIT04 Called with parameter format=04. Includes the functions of MAILEXIT03 plus these parameters:

RTNTXTTYP	Tells InterForm400 how to handle the text found in &RTNTXT01-10 - or if to use an external html file.
RTNMSGSTMF	IF RTNTXTTYP is 'X' then the path and name of the **html stream file** is to be placed in this parameter.
RTNUSRPWD	The **user password** to the PDF file (The Digital Signature/PDF Security module is required.)
CODPAG	The **codepage** in which the returned parameters must be written - this normally contains the spooled file codepage as information for your exit program. If the AFC codepage is as ***SPLFATR**, then this contains the spooled file code page (if defined) or the codepage set in AFC.
RTNTXTVER	Return text version. The text version in the

e-mail finishing definition to use (same as RTNTXTFNT in MAILEXIT03).

Apart from this you can return the name and e-mail address of up to **3 receivers** - not counting the CC: and BCC: receivers.
This demo CL-program (MAILEXIT04) can only be compiled in **V5R2** or later because of the number of parameters. Refer to the source member for additional details.

MAILEXIT05 Called with parameter format=05. This includes the parameters of MAILEXIT04 plus the parameter:
RTNBCCADR The return BCC e-mail address to send to.

MAILEXIT06 Called with parameter format=06. This is a unicode version of MAILEXIT05 - making it possible to specify parameters for faxing/e-mailing in unicode. Please note that this format can only be used when the prepare for finishing job specifies Unicode output = *YES.

MAILEXIT07 Called with parameter format=07. This includes the parameters of MAILEXIT05 except that you can now define up to 9 receivers of the e-mail:

RTNTOADR1 - RTNTOADR9
The e-mail addresses of the up to 9 e-mail receivers.
RTNTONAM1 - RTNTONAM9
The names of the receivers.

RTNSECATM sets an extra optional attachment.

MAILEXIT08 Called with parameter format=08. The parameter is a data structure which may be extended in future versions of InterForm400. The main addition is that an array of the 99 variables are included. Please notice that the **RTNSECATM** field is the return secondary attachment (an extra optional attachment - you set this to the IFS path to the file).

MAILEXIT09 Called with parameter format=09. Compared to MAILEXIT08 8 additional CC receivers can added. The extra fields are named **ReturnToCCAdr**<x> and **ReturnToCCNam**<x>, where <x> is a number in the range from 2 to 9.

If you want to send to an email group (as defined as described on page **430**), then the mail exit program should return the name of the email group as the 'Recipient name', and the E-mail address should be *GROUP. This can e.g. be done with these commands in the program:
CHGVAR VAR(&RTNTOADR) VALUE('*GROUP')
CHGVAR VAR(&RTNTONAM) VALUE('SALES_GRP')
(The group name must be written in capital letters).

WARNING

*All exit programs called by InterForm400® **must** be owned by QSECOFR. If it is not the AFC job will halt with an error message. Change the owner with the command: CHGOBJOWN OBJ(library/program) OBJTYPE(*PGM) NEWOWN(QSECOFR). Refer to page **167** for requirements in order to be able to change the owner.*

In this example we intend to use the 4 digit customer number as the only key. If the spooled file includes the E-mail address in every page the keys are not necessary - just select '3. Find in spooled file' in option '1. How to find E-mail address / Fax number ' and specify the position in option '6. Definition recipient-ID '.

3. Definition variables

```
         Change variables                                          MAI315D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file


        Variable        Length        Description
        *V01             25           Company name_______
        *V02             25           Contact person_____
        *V03              4           Customer number____
        *V04             50           Subject____________
        *V05             ___          ___________________
        *V06             ___          ___________________
        *V07             ___          ___________________
        *V08             ___          ___________________
        *V09             ___          ___________________
        *V10             ___          ___________________
        *V11             ___          ___________________                +
Note:
By using variables *V01-*V09 only, *V1-*V9 can be used as aliases for
variables *V01-*V09.

F3=Exit                                                   F12=Cancel
```

Up to 99 **variables** can be defined. They are read from the contents of each spool file page. The variables can be referred to in the subject, e-mail text, the name of the attached PDF file, the receiver E-mail address and receiver name. The variables are inserted as *V01 .. *V99 (use upper case 'V').

Above only the length of the variables are defined. Later on we define from where the variables should be fetched (That could depend of the contents of each page).

4. Default PDF-file name

Here you can specify a default name for the attached PDF file. This name can be overridden for specific e-mail text definitions.

```
         Work with Default PDF-file name                           MAI305D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file

Note: *NONE (in upper case) will result in an email without attachment.

Default PDF-file name  . .   Document_*V03.PDF_____________________________

Note: *NONE (in upper case) will result in an email without attachment.

Concat with PDF file . . . . _____________________________________________
_____________________________________________________________________
_____________________________________________________________________
_________________________
```

If you set the PDF file name to be ***NONE** (in upper case), then no PDF file will be attached when sending out the email. Please notice, that when calling the P = Send PDF email / Fax function an overlay or overlay selector is still required, but this will not be used when specifying *NONE above.

Concat with PDF file
This field is optional. In this field you can insert the path and file name of a PDF file, that should be added/appended to the PDF files, that resulted in the merge between the overlay and spooled file. The path and file is fixed, and you cannot use variables as a part of the path and file name. The field can e.g. be used for adding general terms of delivery (or a page with a special offer) to the end of a PDF file without changing anything in the overlay(s) used.

The use of PDFCON require a license key, that includes the advanced PDF module. The use

also require JAVA 1.6 and the AFC subsystem also need to run.

5. Definition E-mail text / Cover page text

InterForm400 provides you with the possibility to include various texts in the e-mail depending on who you are e-mailing to. To do that you simply create 2 or more e-mail texts.

Below one E-mail text definition is made.

```
         Change E-mail / cover page text                              MAI345D

Definition name  . . . . :   DEMO
Description  . . . . . . :   Distribution of the Demo spool file

E-mail text version  . . :   GB________

Description  . . . . . . .   Demo spool file (English ver.)__
E-mail subject . . . . . .   *V04_____________________________________________
Text and -format . . . . .   H   T=Text, H=HTML, R=Raw HTML, X=External
E-mail text  . . . . . . .
  For *V02, *V01._____________________________________________________________
  ___________________________________________________________________________
  Please read the attached file containing a message for you from_____________
  InterForm A/S._____________________________________________________________
  ___________________________________________________________________________
  ___________________________________________________________________________
  The reason why you have received this mail is, that you are registered as__
  our contact person at *V01._________________________________________________
  Please let us know, if that is incorrect._____________________________________
  ___________________________________________________________________________
Adjustment . . . . . . . .   U        (U C R)
PDF-file name  . . . . . .   *DEFAULT_____________________________________________
Secondary attachment . . .   /APF3812Home/Work/MyFile.PDF_____________________
Fax cover page overlay . :   IF400DEMO_    Name, *NONE      F4=Prompt
  File set . . . . . . . .     SAMPLE____
F3=Exit   F12=Cancel
```

The E-mail text version is a name identifying this e-mail text. Here we have created a text definition, that could be used for the english speaking customers (GB).

Text and -format: With this you specify how the e-mail text is to be presented in the final e-mail:

T=Text	The contents is shown in a fixed font (courier).
H=HTML	HTML codes automatically inserted so the contents are shown in a proportional font (arial).
R=Raw HTML	Raw HTML codes in the contents can be included.
X=External	Use an external html file in the IFS for the contents of the e-mail. If you select 'X' you will be prompted for the file name and path. You can even use the variables ***V01-*V99** in the text of the html file. The text in the html file must be utf-8 encoded.

As the subject of the mail the subject from the spool file is used (*V4). In the message text we insert both the name of the receiver (*V2) and the company name (*V1). Variables could also be specified for the PDF file name.

Like the variables you can also insert either ***FROM** or ***TO** in order to insert the name of either the sender or receiver of the e-mail. *FROM and *TO are also replaced with the names in the used external html files.

We can create several different text definitions - e.g. one for each language code.

Adjustment can also be selected for the complete e-mail text: **U**=Unadjusted, **C**=Centred, **R**=Right adjusted.

If you set the **PDF-file name** to be ***NONE** (in upper case), then no PDF file will be attached

when sending out the email. Please notice, that when calling the P = Send PDF email / Fax function an overlay or overlay selector is still required, but this will not be used when specifying *NONE above. Even if you specify *NONE for the PDF-file name above you can still specify and use a secondary attachment.

The fax cover page overlay is for fax support only. Faxing directly from InterForm400 requires the InterFax module.

When you insert variables in the subject of the mail: Make sure, that you leave enough space, so that the contents of the variable can be inserted on the same line.

Secondary attachment

If you want to add an extra attachment (apart from the PDF file, which is the result of a merge between the overlay and a spooled file), then you can specify it here. Specify ***NONE**, if you do not want an extra attachment.

NOTE

From the 2007 versions the text you write is converted so it is really 'What You See Is What You Get'. In older versions a conversion would happen if you typed in the text using a 5250 session running a different code page than the one used for the P=Send Mail function.

6. Definition recipient-ID

A **Recipient-ID** is a description, that tells where to find the keys and variables on the spool file pages. This is combined with a page selection criteria, that is already known from the sorting definition. The page selection criteria makes it possible to find the keys and variables in different places on the page depending on e.g. if either 'INVOICE' or 'CREDIT NOTE' is found in a special place.

In this example the keys and variables are always placed in a fixed position, and therefore the page selection criteria is left blank.

```
         Update Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMO

Sequence number  . . . . :     1
Description  . . . . . . .   Demo Spool: Get keys and vars.

Page selection criteria

                  Print line   Position   Oper  Compare value
                      ___      ___ - ___  ____  ______________________________
                      ___      ___ - ___  ____  ______________________________
                      ___      ___ - ___  ____  ______________________________

Find recipient ID in the following positions
                  Print line   Position
                      _13      _57 - _60
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
                      ___      ___ - ___
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

The functionality of F13 and F18 is described for the split defintion, which is found on page 199.

The Page selection criteria:

If all pages in a spooled file contains the recipient ID and variables in fixed positions, then you can do like above using only one sequence number and keeping the page selection criteria

blank.

If you have multiple documents inside a spooled file and only the first page of each document contains the data for the variables, then you could use a condition for the page selection criteria like below:

```
         Create Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMO

Sequence number  . . . . .     1
Description  . . . . . . .   Demo Spool: Get keys and vars.

Page selection criteria
                  Print line   Position   Oper  Compare value
                       1       1  -  8   EQ    Page   1
                                  -
                                  -

Find recipient ID in the following positions
                  Print line   Position
                      13       57 - 60
                               -
                               -
                               -
                               -
                               -
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

If the data for the variables and e.g. the recipient ID is moving up and down from page to page, then you can use multiple sequence numbers each with a special page selection criteria like below:

```
         Create Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMO

Sequence number  . . . . .    1
Description  . . . . . . .   Get keys and vars in line 13

Page selection criteria
                  Print line   Position   Oper  Compare value
                      13       40 - 51   EQ    Customer No:
                               -
                               -

Find recipient ID in the following positions
                  Print line   Position
                      13       57 - 60
                               -
                               -
                               -
                               -
                               -
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

```
         Create Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMO

Sequence number  . . . . .     2
Description  . . . . . . .   Get keys and vars in line 14

Page selection criteria
                  Print line   Position   Oper  Compare value
                      14       40 -  51  EQ    Customer No:
                               ___ - ___
                               ___ - ___

Find recipient ID in the following positions
                  Print line   Position
                      14       57 -  60
                               ___ - ___
                               ___ - ___
                               ___ - ___
                               ___ - ___
                               ___ - ___
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

If you want that not all of the pages are emailed, then you can e.g. make sure that the email address for those pages is set to blanks.

Please note: You CANNOT exclude pages from being emailed by excluding the pages via the page selection criteria. Any page not selected by any page selection criteria will be included/emailed together with the last/previous selected page. If you e.g. imagine the 4 page demo spooled file of InterForm400 (which you can print out via option 1 in the service menu), then this single sequence number will email all pages to the same recipient (as only the first page of the spooled file is selected):

(The page selection criteria is only true for page 1 in the spooled file).

```
         Update Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMO

Sequence number  . . . . :    1
Description  . . . . . . .   Demo Spool: Get keys and vars.

Page selection criteria

                  Print line   Position   Oper  Compare value
                      13       57 -  60  EQ    1004
                               ___ - ___
                               ___ - ___

Find recipient ID in the following positions
                  Print line   Position
                      13       57 - 60
                               ___ - ___
                               ___ - ___
                               ___ - ___
                               ___ - ___
                               ___ - ___
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

Regarding the recipient ID:

You should also specify the recipient ID's (=keys) in the bottom. This is used as a way to force a level break.

Normally it is advisable to specify all of the keys (and only the keys) here. But you can use this to split up one e-mail into several: A problem could be, that one E-mail address (=one set of keys) is sent to for several companies, but in order to ease distribution you want to create one

E-mail per company. Specify for recipient ID a place on the page, that identifies the different companies (as well as the keys), and that is done automatic. Press Enter.

```
         Update Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   TEST3

Sequence number  . . . . :     1
Description  . . . . . . .   Demo Spool: Get keys and vars.

Enter where to find key(s) and variables in the print.

Field   Description          Length   Printline     Startposition
Key-1   Customer Number        4      _13_          _57_
Key-2                          0      ____          ____
Key-3                          0      ____          ____
*V01    Company Name          25      __6_          __8_
*V02    Contact Name          25      _11_          _13_
*V03    Customer number        4      _13_          _57_
*V04    Subject               50      _15_          __8_









F3=Exit                                                  F12=Cancel
```

On this screen you define where the keys and variables should be found for the page selection stated on the last screen. If you in option '1. How to find E-mail address / Fax number' defined, that you want to find the e-mail address in the spooled file this screen will look like below:

```
         Update Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMOSPLF

Sequence number  . . . . :   001
Description  . . . . . . .   all

Enter where to find key(s) and variables in the print.
Field       Description          Length   Printline   Position    Prefix
*MAILADR    Recipient email adr             1           1
*NAME       Recipient name         50       11          13
*CCADR      CC email adr                    ___         ___
*CCNAME     CC Name                50       ___         ___
*FAXNO      Fax number             25       ___         ___
*TXTVRS     Text version            4       13          57        TEXT
*V01        Company                40        6           8
*V02        Contact Person         40       11          13
*V03        Document number         4       13          57









F3=Exit                                                  F12=Cancel
```

In the screen above we imagine that we under ‘5. Definition E-mail text / Cover page text’ defined text versions named ‘TEXT1001', ‘TEXT1003' and ‘TEXT1004' for the demo Spooled file - and we expect the e-mail address would be added in line 1 from position 1. We use the prefix ‘TEXT’ and add the 4 digit number found in line 13 in position 57 after this prefix.

If we want to get the receiving e-mail address in the spooled file and we want just 1 fixed text version we can define the whole text version name without any spooled file data like below: (Clear the Length, Print line and Position for the *TXTVRS line).

```
         Update Finish Recipient-ID                                  PRS330D

Definition name  . . . . :   DEMOSPLF2

Sequence number  . . . . :   001
Description  . . . . . . .   all

Enter where to find key(s) and variables in the print.
Field       Description          Length   Printline   Position    Prefix
*MAILADR    Recipient email adr             1           1
*NAME       Recipient name         50       11          13
*CCADR      CC email adr                    ___         ___
*CCNAME     CC Name                50       ___         ___
*FAXNO      Fax number             25       ___         ___
*TXTVRS     Text version           ___      ___         ___       TEXT
*V01        Company                40        6           8
*V02        Contact Person         40       11          13
*V03        Document number         4       13          57



F3=Exit                                                 F12=Cancel
```

If you use a setup like above then you need just one text version named 'TEXT' in option '5. Definition E-mail text / Cover page text'.

If you want to send to an email group (defined as described on page 430), you should as the *MAILADR refer to a place in the spooled file with the text '*GROUP' (this must be inserted in the spooled file), and *NAME should refer to a place, where the name of the email group is found in the spooled file.

It is possible to send to multiple receivers (also when you find the emails in the spooled file) if you state the email addresses (up to 9 is supported) in the spooled file without any spaces in between and delimited with a semicolon (;). This is possible both for normal receivers (*MAILADR) and CC receivers (*CCADR).

7. E-mail addresses and fax numbers

E-mail addresses and fax numbers are lists of addresses, that InterForm400 can send to. The addresses are identified by the keys defined earlier. For each set of key(s) the e-mail/fax address, the name of the person, e-mail text version and a password for the attached PDF (if used) are registered.

Please notice that you can press <**Page Down**> on the address to add up to 3 receivers of the e-mail for the current key value. (You can also select multiple receivers with the e-mail exit program MAILEXIT04.)

NOTE

This option is only open if you have selected '**1. By key**' in option '1. How to find E-mail address / Fax number'.

WARNING

Password protection of the PDF file requires a purchase of the Digital Signature/PDF security module for InterForm400.

```
         Work with E-mail addresses and fax numbers                    MAI320D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file

Position to . . . . . .      ____________________________   Customer number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt   Customer number
 _    1004

                                                                          End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Press F6-Create to add a new E-mail address or fax number:.

```
         Create E-mail address / Fax number                            MAI330D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file

Customer number  . . : 1001

Recipient name . . . . Herring Marine Research_____________________________
E-mail address . . . . Herring@interform400.com____________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________                                        More...
Or .. Fax number . . . _____________________________
CC Recipient name  . . _____________________________________________________
CC E-mail address  . . _____________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________                                        More...

E-mail text version  . GB________  F4=Prompt
PDF User Password  . . _____________________________________

F3=Exit           F4=Prompt                              F12=Cancel
```

The **More...** text in the screen above indicates, that you can add additional receivers: If you press the <PageDown>/<PageUp> keys on your keyboard you can roll through all of the up to 9 possible normal and CC: receivers.

If you want to send to an email group (as defined as described on page **430**), you should state the name of the email group as the 'Recipient name' above, and the E-mail address should be *GROUP.

The Recipient name above can be referred to as *TO in the e-mail text definition above (option 4).

For each receiver you specify what e-mail text version to use.

Note: Use the command **APF3812/WRKMAILADR** to give users access to these addresses without entering InterForm400 - see page **529**.

NOTE

A **PDF user password** can only be used if the InterForm400 security module is enabled.

NOTE

From the 2007 versions the text you write is converted so it is really 'What You See Is What You Get'. In older versions a conversion would happen if you typed in the text using a 5250 session running a different code page than the one used for the P=Send Mail function. So type a '@' in the 5250 session (in the e-mail address) not matter what code page you run.

8. Senders E-mail address

```
         Work with E-mail sender information                          MAI350D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Distribution of the Demo spool file

Code for sender  . . . . . . 1   1=Use fixed sender
                                 2=Use owner of spooled file as sender
                                 3=If possible, use owner of spooled file,
                                   else use fixed sender.

Organisation . . . . . . . . __________     (When 'Code for sender' = 2 or 3)

Fixed sender name  . . . . . Kim Egekjaer_____________________________________
Fixed sender E-mail adr. . . support@interform400.com_________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________
 Send Bcc to sender . . . . . 1   0=No, 1=To email address, 2=To email group
 E-mail adr for Bcc copy  . . _____________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________  blank = senders E-mail adr
F3=Exit                                                      F12=Cancel
```

In this option you specify who should be specified as sender on the e-mails:

1=Use fixed sender:
Use the name and E-mail address specified in the bottom for all E-mails.

2=Use owner of spooled file as sender:
If you specify this, then the user profile of the original spool file will be retrieved, and the name and E-mail address is extracted from information in the list of E-mail sender addresses found in **8. Work with E-mail senders** in the Auto Forms Control menu. Note, that when you do this, then the sender e-mail address will be found by going through this list in this specific order when comparing with the registrations in 'Work with E-mail senders':

1. User profile and organisation
2. User profile
3. Organisation

3=If possible, use owner of spooled file, else use fixed sender.
A combination of the two codes above.

You can decide, that the sender should receive a copy (BCC - Blind Carbon Copy) of the sent E-mails.

Organisation: If filled out it can be used for the digital signature. Then it will be the digital signature of this organisation that is used for authentication of the PDF file and not the personal digital signature.

NOTE

The text you write is converted so it is really 'What You See Is What You Get'. In older versions a conversion would happen if you typed in the text using a 5250 session running a different code page than the one used for the P=Send Mail function. So you should type in a '@' in the e-mail address regardless of the code page you currently run.

9. Encryption and Signature

WARNING

Password protection and/or digital signature of the PDF file requires a purchase of the Digital Signature/PDF security module for InterForm400.

```
        Work with Encryption and Signature Information               MAI380D

Definition name  . . . . . : FILENAME
Description  . . . . . . . : file naming

Type choices, press Enter.

Encryption information
  Encrypt PDF File . . . . . N               (Y=Yes, N=No)
  User Access Restrictions . . . . . *NONE___        *NONE, *NOPRINT ...
                                     ________           ... *NOCOPY, *NOEDIT
                                     ________

  New PDF Master Password  . . . . .
  Confirm Password . . . . . .
  Old password, when change  . . . .

Digital Signature Information
  Digitally Sign PDF File  . . . . . N               (Y=Yes, N=No)
  Certificate  . . . . . . . . . . . __________      Name, *OWNER
  Organisation . . . . . . . . . . . __________

Signature Pad Information
  Sign PDF-file on sign pad  . . . . Y               (Y=Yes, N=No)
  Preview  . . . . . . . . . . . . . N               (Y=Yes, N=No)

F3=Exit   F5=Refresh   F12=Cancel
```

In this screen you can specify if you want to encrypt or digitally sign the attached PDF file - if you e-mail.
Here is the explanations of the fields to fill in:

Encrypt PDF File:
State 'Y' if you want to encrypt the PDF file.

PDF Master Password:
State a password if needed, that will open all the created PDF files with authority to do all.

User access limitations:

***NONE**	Use this if you want no limitations on what the receiver can do with the created PDF file.
***NOPRINT**	This limitation make it impossible to print the PDF file.
***NOCOPY**	Disables the possibility to copy the contents (text or graphics) of the PDF file.
***NOEDIT**	Makes it impossible to edit the PDF file.

Digitally Sign PDF File:
Enables inclusion of a digital signature in the PDF file.

Personal Certificate:

Here you can either state the name of an already installed certificate or refer to the certificate of the spooled files owner or sender.

Organisation: If you state ***OWNER** or ***SENDER** as the personal certificate, then the organisation stated will be used for looking up in the table shown in option '**8. Work with E-mail senders**' on the Auto Forms Control menu.

In this manner you can insert different signatures for the same sender/owner depending on the organisation related to the current distribution (or finishing definition). Refer to details of '**8. Work with E-mail senders**' below for more information.

Signature Pad Information

Sign PDF-file on sign pad

State a 'Y' to indicate that you want to add a signature to the PDF file via a connected signpad. Refer to **Appendix V** on page 685 for details of the signpad module.

Preview If activated this will make it possible to view the complete PDF file before signing it.

NOTE

Digital signatures and passwords can only be used if you have bought the Digital Signature/PDF security module of InterForm400!

10. PDF bookmark definition

```
          Work with Bookmark definition name                          MAI390D

Definition name  . . . . . : EMAILFAX
Description  . . . . . . . : emailfax test



Bookmark definition name . .  __________   Name, *NONE        F4=List

F3=Exit           F4=Prompt                                  F12=Cancel
```

If you decide, that the attached PDF file (if you e-mail) should include bookmarks, you can specify what bookmark definition to use here. If you want no bookmarks you can state *NONE. Refer to page 320 for more information about the PDF bookmarks.

11. PDF embedding definition

If you have purchased the PDF embed module and want to embed one or more files within the PDF file, that will be emailed, then you can use this option to select an embedding definition:

```
         Work with PDF embedding definition                          MAI392D

Definition name  . . . . . : DEMOEMAIL2
Description  . . . . . . . : email the demo splf


PDF embedding definition . . EMBED_____    Name, *NONE        F4=List
```

State *NONE if you do not want to embed any files in the PDF file.

12. OutBox directory

With this option you can state a special output directory in which to place the outgoing e-mail. The directory is a subdirectory inside /APF3812Mail/OutBox/. The subdirectory will be created , it it does not exist. If you use the default value of *NONE, then the e-mail will be stored in /APF3812Mail/OutBox/.

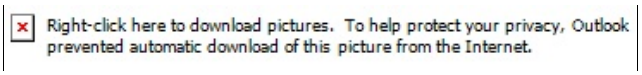
NOTE

Remember to regularly clean up old e-mails. This should be done with the command APF3812/CLRMAILLOG. Refer to page 523 for details.

13. Mail text embedded images

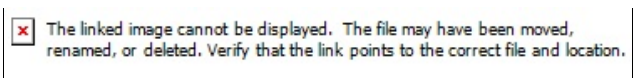
When you want to include images in the email contents you need to use html. (Refer to page 238 for how to use html). With InterForm400 you can embed local images within the html instead of referring to globally available images.
If you do not embed the images in the html you will need to link to globally available images in your html. Linking to images (instead of embedding) has these downsides:

a. Some receivers will see this message when opening your emails:



(The message above occours if the receiver has chosen not automatically to download the images referred to in emails).

b. In worse cases the public image has been removed and the link in the email refers to a non-existing image. Then the receiver will see this:

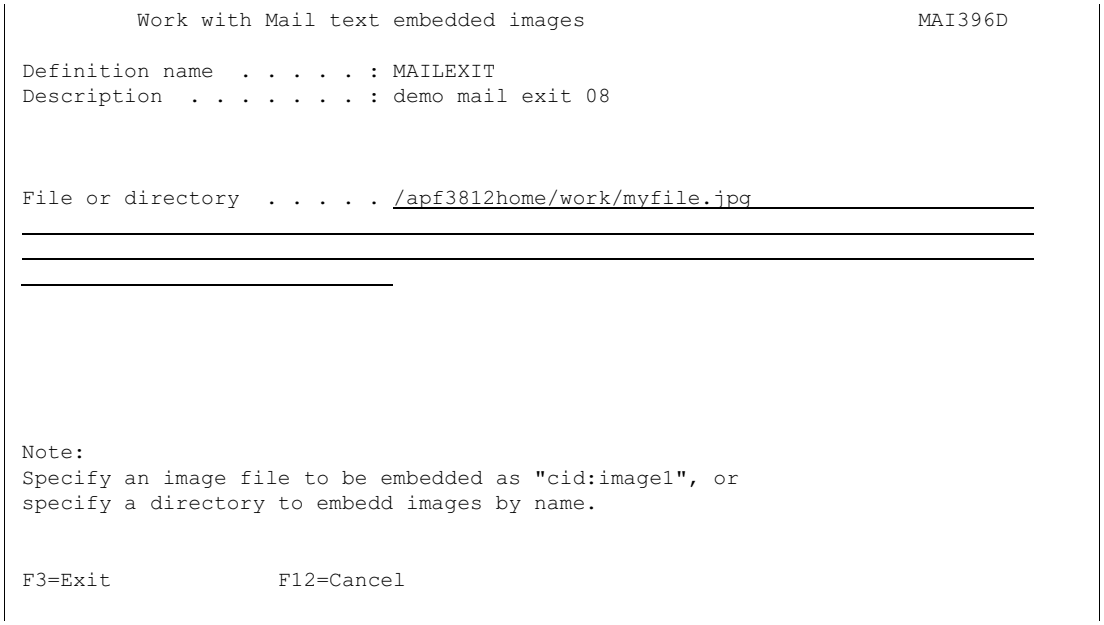


So to avoid this you should use this way of embedding local images directly in the html.

The embedded images can be selected in these 2 ways:

1. State only the **image name** in the html file (as <img src="image in IFS">) and set the **directory** in which they are found via this option.

2. Refer to an image in html as **cid:image1**. Then the **image including the path** must be specified below:



You can also use variables as part of the path or image name(s).

Below an example of each use is illustrated with an example:

1. State only the image name in the html file:
The screen above should state the **path to the images** (e.g. /apf3812home/work) and you simply state the image names in the html file:

```
<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=ISO-8859-1">
<title>Insert title here</title>
</head>
<body>

This is an image: <img src="image_file.jpg">.</body>
</html>
```

2. Refer to an image in html as cid:image1.
If you have specified the **image including the full path** in the screen shot above, then you can refer to the image inside the html like below:
`<img src="cid:image1">`

As any variables referenced in the html file are substituted initially you can even use variables as a part of the image name e.g.: `<img src="image_*V1.jpg">`

The same feature is available in the SNDEMAIL command. This command is described on page 524.

14. Email address syntax error handler

All of the address fields of the email finish definition are validated when entered via the menu, but email addresses can also origin from either the spooled file or a user exit program. Unless you use insert an email address, the AFC job running the 'P=Send PDF email / Fax' option will halt with an error if an invalid, nonblank email address is detected (e.g. missing an @-sign).

15. Define email XHEADERS

It is possible to add hidden information as X-headers inside the outgoing emails. This is described on page 231.

16. ZUGFeRD definition name

You can create special PDF files for invoicing, that fits the german ZUGFeRD standard. The XML+ module is required. This is described on page 307.

17. Archive in InterArchive

This option changes depending on which InterArchive that has been installed. After selecting the option you can switch between the archives with 'F10=Change archive' - if both archives are installed. The old InterArchive is no longer sold.

InterArchive

If you have installed InterArchive400, then the option will open this screen:

```
         Work with Archive option                                  IDX400D

Definition name  . . . . . : ARCHIVE
Description  . . . . . . . : DEMO Archive emails

Archive option . . . . . . . 2           0=Dont archive, 1=Archive pdf file,
                                         2=Archive email

Archive name . . . . . . . . MAI
Item type  . . . . . . . . . Demo

Field       Value
DOCNO       *V1
DATE        *SPLFDATE
REGARDING   *V3
F3=Exit    F10=Change archive    F12=Cancel
```

The InterArchive command FILITM will be executed in the Auto Forms Control job, when this is activated. You can assign values to the various fields as shown above. Please notice, that you can use variables and fixed constants as well as a combination of the two when assigning values to the fields in the screen above.

InterArchive require a date for archiving. If you can find a date in the spooled file you can define such a date as a variable and use that above, but you can also use the special value ***SPLFDATE** as shown above. To use this you need to declare the date field in InterArchive as having the format YYYY-MM-DD and 10 characters long.

Should the list of fields above not be complete for the specific item type, then the Auto Forms Control job may halt with this message:

```
                      Additional Message Information

Message ID . . . . . :   APF4771       Severity . . . . . :   00
Message type . . . . . :   Inquiry
Date sent  . . . . . :   19/03/12      Time sent  . . . . . :   16:31:18

Message . . . . :   Error archiving email (R I C).
Cause . . . . . :   Error occured processing file
  /APF3812Mail/OutBox/KSE-2012-03-19-16-31-18-364000.eml - see joblog for more
  information.
Possible choices for replying to message . . . . . . . . . . . . . . . :

  R -- Retry.
  I -- Ignore archiving for this file.
  C -- Cancel operation.


                                                                      Bottom
Type reply below, then press Enter.
Reply  . . . .   ____________________________________________________________

F3=Exit   F6=Print   F9=Display message details
F10=Display messages in job log   F12=Cancel   F21=Select assistance level
```

If you then look into the joblog you should see the reason in a previous message:

```
Filing of the item was canceled.
```

By placing the cursor on the message and pressing F1 you can see the second level information:

```
                      Additional Message Information

Message ID . . . . . :   UUA7007       Severity . . . . . :   00
Message type . . . . . :   Escape
Date sent  . . . . . :   19/03/12      Time sent  . . . . . :   16:31:18

Message . . . . :   Filing of the item was canceled.
Cause . . . . . :   The filing of the item was canceled. Reason code  2 shown
  below describes the reason the operation was canceled.
     1 - An error occurred during reading of fields
     2 - Value not supplied for all fields
     3 - Unknown origin specified
     4 - Unknown ID in origin specified
     5 - Local ID is not specified
     6 - You canceled the filing by pressing F3=Exit
     7 - You canceled the filing by pressing F12=Cancel
     8 - The archive folder was not found
     9 - Sort date is not specified
                                                                      More...
Press Enter to continue.

F3=Exit   F6=Print   F9=Display message details   F12=Cancel
F21=Select assistance level
```

You can then correct the email finishing definition and try again (R-Retry).

```
         Work with email definition                                MAI300D

Definition name  . . . . . : DEMO
Description  . . . . . . . : Demo email

The email address syntax error handler is a person, that in case of email
addresses witk syntax error, will recieve the email that can not be sent
with subject text changed to:

   Syntax error in email address : x--the invalid address --x

This user can then find the correct address and send the email manually.

Email address syntax error handler
email address  . . . . . : admin@mydomain.com
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________ *NONE, email address

When *NONE is specifioed, tha AFC-job will fail with a message in the
QSYSOPR message queue in case of syntax errors.

F3=Exit                                                  F12=Cancel
```

8. Work with email senders

Note: This option is reached from the Auto Forms Control menu.

```
         Work with E-mail senders                                  MAI360D

Position to . . . . . _________  User profile

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt   User        User name
 _    KSE         Kim Egekjaer
 _    PS          Peter Sørensen

                                                                      End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

This screen shows/edits information, that are used for the E-mail finishing definition.

Here you enter user profiles, that InterForm400 should recognize as E-mail senders. InterForm400 can use the E-mail address and name you specify here when sending. See page 245. Press **F6** to add a new E-mail sender:

```
         Create E-mail sender                                        MAI365D

User profile . . . . . . . MYUSER____
User name  . . . . . . . . Demo User Profile_____________________
Organisation . . . . . . . SALES_DEP_
E-mail address . . . . . . SENDER@INTERFORM400.COM_____________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________
Personal Certificate . . . MY_CERT___
```

If you state in the E-mail finishing definition, that the sender of the E-mail should be the owner of the spooled file or if the digital certificate should be either ***OWNER** or ***SENDER**, then this information is used.

First InterForm400 will search for a match for both the user profile and organisation. If not found InterForm400 will take the information, where there is a match for the user profile only. If the is not match found here either a match with the organisation is looked for.

The File Naming Finishing Definition

By creating a finishing definition of type **'06 = PDF File naming**' you can create PDF files in InterForm400 using advanced functions - without any programming! You can use information from the spooled file to break up the spooled file as it is merged into PDF files and let information from the spooled file be a part of the PDF file name and/or the path where it is placed.

The functionality is simular to the E-mail/fax finishing definition but more advanced. You can e.g. define and use up to **35 variables** (and 3 keys) for the path and PDF file names and use exit programs for the variables if necessary.

NOTE

In order to get PDF output you need to purchase the PDF module or the classic package for InterForm400.

When you create a new PDF file naming finishing definition you will see this screen:

```
          Work with PDF Filenaming                                  PNM300D

Definition name  . . . . :  DEMO_MAN
Description  . . . . . . :  Demo for manual

Select one of the following options:

   1. Receipient Key Definition
   2. Variable Definitions
   3. PDF File Name Composition

   5. Page selections and Document breaks
   6. Receipient ID Information
   7. Closing User-Exit
   8. Encryption and Signature
   9. PDF bookmark definition
  10. ZUGFeRD definition name

Option:  _




F3=Exit                                                  F12=Cancel
```

1. Receipient Key Definition

This function works exactly as **'1. Key definition'** for the e-mail/fax finishing definition. You can define up to 3 keys identified as *KEY1-3. They can be referred to in the PDF file name/path later in '3. PDF File Name Composition'.

The keys are also used in **'6. Receipient ID Information'** where you can state a PDF password depending on who the PDF file is intended for. You can also let a **user exit program** return the passwords to be used. Refer to source file APF3812/APISRC member PNMEXIT for more information. A program based on this source can be called with &Entrystep = '*ID'.

NOTE

You must define at least one key. If not you will get an error when running the definition.

Refer to page 235 for more information of definition of the keys.

2. Variable Definitions

Select this option and you will see a list of the defined keys and variables. Press F6 to add new a variable:

```
        Create Variable Definition                                  PNM325D

Definition name  . . . . :  DEMO_MAN
Description  . . . . . . :  Demo for manual

Type choices and then press Enter. Press F3 or F12 to exit.
  Variable . . . . . . . . .  *VA            *VA-*VZ, *V1-*V9
  Description  . . . . . . .  Customer Name
  Max. outputlength  . . . .  30             1 - 40

  Variable type  . . . . . .  1              1=Spooled printinfo
                                             2=Spoolfile attribute
                                             3=Auto numerator
                                             4=Date
                                             5=Time
                                             6=System environment info
                                             7=User exit




F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel
```

The variable can by of various types:

Spooled print info: Contains information from the contents of the spooled file. Refers to text in a certain line and interval of positions. Size can be up to 40 characters.

Spoolfile attribute: Can be any of these values: **1**=Unique spoolID (40), **2**=Spoolname, **3**=Spoolno, **4**=Jobname, **5**=Owner, **6**=Jobno, **7**=Formtype, **8**=Userdata, **9**=Programm name, **A**=Program library

Auto numerator: A counter, that increases each time a certain break occours. You can state:

The **number of digits** to use.

If it should be fixed in length (***FIXED**) or if preceding blank signs should be removed (***TRIM**).

What to do if counter value exceeds the highest value allowed: **1=Wrap** means start from the initial value again and **2=Error** means, that the AFC job will halt with an error.

The **increment value** for the numerator.

The level of the numerator: ***SYS, *TASK, *SPOOL, *TASKKEY, *KEY**:

***SYS** One common numerator for InterForm400.

***TASK** A numerator for this finishing definition.

***SPOOL** It is reset for each new incoming spooled file.

***TASKKEY** A numerator within this task / finishing definition, that increases each time the key(s) change.

***KEY** Like ***TASKKEY** except this works across tasks / finishing definitions.

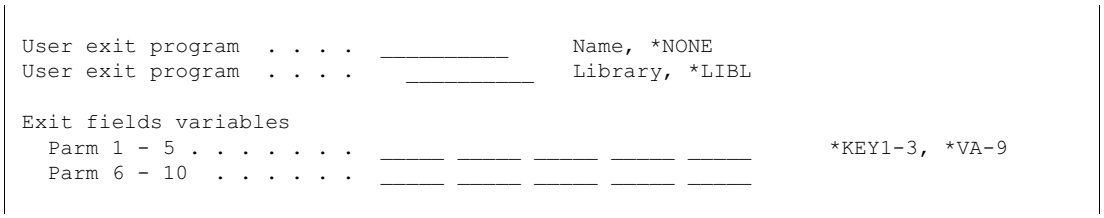
> ☝ **NOTE** ☝
> All the autonumerators change for each new PDF file. Except *TASKKEY and *KEY. Normally you would create a new PDF file for each new key, but not necessarily.

Date: Inserts the current date. It can be the: **1=System date**, **2=Job date** (the date of the AFC job) or the **3=Spoolfile creation date**. Many different formats (without delimiters) are supported.

Time: Inserts the current time. It can be either: **1=System** or **2=Spool creation time**.

System environment info: At the moment only '**1=System name**' can be selected.

User exit: Select this possibility and you will see this:



So with this option you can call your own program to insert a value in a variable e.g. found by using other variables. You can only use variables with names, that are lower e.g. *V2 can be calculated with the values from *VA-*VZ and *V1.

> ☺ **TIP** ☺
> *For a demo source of a user exit program look in source file APF3812/APISRC in member PNMEXIT. The program will be called with **&Entrystep = *VAR**. You return the value for the variable in **&Rtnparm1**.*

> ☝ **NOTE** ☝
> The same exit program can be called several times from different places in the PDF File naming finishing definition. The field &Entrystep indicates from where it is called.

3. PDF File Name Composition

Select this option to state how the PDF file name is determined:

```
        Create PDF Filename Composition                              PNM330D

Definition name  . . . . :  DEMO_MAN    Demo for manual

Type choices and then press Enter. Press F3 or F12 to exit.

  PDF output path/file . . .  /Invoices/*KEY1/Inv *VB.pdf                    >
                              Composition, *USEREXIT
  Concat with PDF file . . .                                                 >
  Create directory . . . . .  N          (Y=Yes, N=No)
  Replace file method  . . .  3          0=Never, 1=Always, 2=Append: .nnn
                              3=Generate: File-nnn.ext (nnn = 000-999)
  Available variables
    Var.   Type      Description      Len  Info
    *KEY1  Keydef.   Customer Numbers   4  Numeric, Allow blanks=N
    *VA    SpoolVar  Customer name     40  Inputlen.: 40, Position  (-)
    *VB    SpoolVar  Invoice number    10  Inputlen.: 10, Position  (-)
    *VC    AutoNum   Global counter     6  *SYS, Len=6, Str=0, Incr=0, *FIXED




                                                                       Bottom
F3=Exit   F4=Prompt   F5=Refresh   F9=Expand   F12=Cancel   F14=Test
```

PDF output path/file
In the top of the screen you state either the composition of the PDF file names to be created or *USEREXIT to let a user exit program determine the names of the PDF files.
As a part of the path you can use the keys and variables, that you have already defined. They are all listed in the bottom of the screen.

If you specify ***USEREXIT** for the PDF file name(s) you should call a program simular to the source in file APF3812/APISRC and member PNMEXIT. The program will be called with &EntryStep = *NAME.

You can press **F4** to get the list of the defined variables to select from (when typing the path/file name), **F9** to get access to the full length available for the PDF file name composition or **F14** to test the composition with a specific spooled file and see what PDF file names it will create.

Other options are:

Concat with PDF file: This field is optional. In this field you can insert the path and file name of a PDF file, that should be added/appended to the PDF files, that resulted in the merge between the overlay and spooled file. You can use variables as a part of the path and file name as for the PDF output above. The field can e.g. be used for adding general terms of delivery (or a page with a special offer) to the end of a PDF file without changing anything in the overlay(s) used. Variables are not supported.
The use of PDFCON require a license key, that includes the advanced PDF module. The use also require JAVA 1.6 and the AFC subsystem also need to run.

Create directory: Specify if you want InterForm400 to create the necessary directories or not.

Replace file method: The possible values are:
0=Never: An error message is generated if the file already exists.
1=Always: The file will be replaced if it already exists.
2=Append .nnn: This is not recommended. It will add a counter after the extension like: file.pdf.001, whereby normal file

association cannot be used.
3=Generate File-nnn.ext: This add a counter prior to the extension like file-001.pdf thus keeping the original file extension.

5. Page selections and Document breaks

This works much like '5. Definition recipient-ID' for the E.mail/fax finishing definition.
Refer to page **239** for more information.

Normally it is sufficient with just one sequence line without any Page selection criteria.
You should however create one sequence line for each different layout - if the variables and/or keys moves depending on the layout of the *SCS spooled file. If you use more than one sequence line you should use the Page selection criteria.

As the document break definitions you need to state a place on the spooled file, that will trigger a break i.e. whenever this information changes a new PDF file will be created. This will normally be the positions of the key(s), but it does not necessarily need to be so.

For the InterForm400 demo spooled file, there is a 4 digit number in position 57-60 in line 13, for which a new value should trigger a new PDF file. That is done with this setup:

```
        Change Page Selection and Document Break                    PNM355D

Definition name  . . . . :  DEMO_TEST1
Description  . . . . . . :  Test PDF creation
Seqno. . . . . . . . . . :   1

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  all pages
  Skip selected pages  . . .  N                          (Y=Yes, N=No)
  Page selection criteria
                 Printline    Position   Oper  Compare value
                     ___      ___ - ___  ____  ____________________________
                     ___      ___ - ___  ____  ____________________________
                     ___      ___ - ___  ____  ____________________________
  Document breaks definitions
                 Printline    Position
                     13       57 - 60
                     ___      ___ -
                     ___      ___ -
                     ___      ___ -
                     ___      ___ -
                     ___      ___ -
F3=Exit   F12=Cancel   F13=Select spooled file
```

Normally a single sequence number is enough - unless the position of the document break information (or the keys and variables) moves around from page to page.

After creating a sequence line you **must** remember to use option **8=Keys and variables**, to state where the variables and keys are placed for this selection of pages:

> **WARNING**
>
> *DO remember to specify the position of all the keys and variables found in the spooled file through option '**8=Keys and variables**' ! If you forget the AFC job will halt with an error when you run the definition later.*

```
        Change Receipient Keys and Spoolvariables                    PNM357D

Definition name  . . . . :  DEMO_TEST1
Description  . . . . . . :  Test PDF creation
Sequence number  . . . . :  001
Description  . . . . . . :  all pages

Enter where to find key(s) and variables in the print.

                                        Page
                                        1=First
Var.    Description           Length    9=Last    Printline     Startposition
*KEY1   Key                      4        _          13            57
*V1     Number                   4        _          13            57
*V2     Contact_first           40        1          11            13
*V3     Contact_last            40        9          11            13

                                                                      Bottom
F3=Exit   F12=Cancel   F13=Select spooled file
```

The **Page** parameter does this:

1=First: Take the spooled file information from the first of the pages, that are included in the resulting PDF file.

9=Last: Take the spooled file information from the last of the pages, that are included in the PDF file.

(If you leave the parameter blank, then the value from the first page is used.)

In the example above the *KEY1 and *V1 is expected to be identical on all pages, that are to be included in the same PDF file. *V2 is taken from the page of the spooled file, that represents the first page of the PDF file (1=First), and *V3 is taken from the last page of the PDF (9=Last). With 9=Last you can e.g. locate the total from the last page of the spooled file, and transfer that to a user exit (closing) program, so that the total can be archived.

For the demo spooled file page 2 and 3 both contains the number ‘1001' in positions 57-60 in line 13. For the result of the related PDF file the variables V2 and V3 will be this:
V2=’Susan Sunflower’.
V3=’Wolly Weed’.

6. Receipient ID Information

Through this option you can maintain passwords for the receivers of the PDF files - per key value. Below only the key, 'Customer number' has been defined.

```
         Create Receipient ID                                        PNM365D

Definition name  . . . . . : DEMO_MAN
Description  . . . . . . . : Demo for manual

Customer Number  . . .      __________



PDF User Password  . .      ________________________________________
```

NOTE

The use of PDF passwords requires purchase of the Digital Signature/PDF security module plus installation of certain OS/400 products and options.

7. Closing User-Exit

Select this option to specify a program, that will be called right after each PDF file has been created. You will get this screen when selecting this option:

```
        Change Closing User Exit Program                              PNM370D

Definition name  . . . . :  DEMO_MAN
Description  . . . . . . :  Demo for manual

Type choices and then press Enter. Press F3 or F12 to exit.

  User exit program  .  *NONE_____            Name, *NONE
    Library  . . . . .    *LIBL_____          Library, *LIBL

  Exit fields variables
  Parm 1 - 5 . . . . .  _____ _____ _____ _____ _____      *KEY1-3, *VA-9
  Parm 6 - 10  . . . .  _____ _____ _____ _____ _____
```

You can state your own user program, that will be called e.g. to update an index of the created PDF files. You can select up to 10 or 20 keys or variables, that will be transferred to the program. For an example of such a program (showing e.g. the expected parameters) look in the source members, PNMCLSEXIT (Format=01) and PNMCLSEXI2 (format=02) in source file APF3812/APISRC. The exit program will be called with &Entrystep = *CLS.

☝ NOTE ☝

Any program called by InterForm400 must be owned by QSECOFR. You can change the owner (if you have enough authority) with the command: CHGOBJOWN. Refer to page 167 for details of what is required in order to change the owner.

💣 WARNING 💣

NEVER place any objects e.g. programs or output queues in the APF3812 library. Those objects will NOT be copied to the new release, when later doing a release update of InterForm400.

8. Encryption and Signature

This option works exactly like option 8 of the E-mail/fax finishing definition. Refer to page 246 for more information.

☝ NOTE ☝

Password protection and/or digital signature of the PDF file requires a purchase of the Digital Signature/PDF security module for InterForm400.

9. PDF bookmark definition

If you decide, that the PDF file should include bookmarks, you can specify what bookmark definition to use here. If you want no bookmarks you can state *NONE. Refer to page 320 for more information about the PDF bookmarks.

When you are done defining the PDF file naming definition you can go on and insert it in production or test. You insert it in Auto Forms Control by inserting a function **N = Create PDF File**. Refer to page 176 for more information of how to do this.

10. ZUGFeRD definition name

In this option you can refer to a ZUGFeRD definition. With such a definition you can create special PDF files fitting the ZUGFeRD standard. The XML+ Module is required for this. Refer to page 307 for more information about ZUGFeRD.

Define Level Break Conditions for Finishing

The screen below appears automatically in the process of creating any finishing definition: This section is used for creating definitions for determination of the level break between recipient information. Or in other words, when to start insertion into a new envelope, when to staple the pages or create a new pdf-file, e-mail or fax.

```
         Work with Finishing Recipient-ID                          PRS320D

Definition name  . . . . :   TESTDEF

Start with . . . . .         __________

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt      Seqnbr.    Description
 (No recipient ID definitions - F6 to create)









                                                                       End
F3=Exit             F5=Refresh          F6=Add             F12=Cancel
```

Press **F6** to create a new definition

More definitions can be created but is only relevant if the **Page Selection Criteria** field is used. Normally a Finishing definition will contain only one Recipient ID definition line.

```
         Create Finishing Recipient-ID                             PRS330D

Definition name  . . . . :   TESTDEF

Sequence number  . . . . .   1___
Description  . . . . . . .   Customer number in Demo Spool___

Page selection criteria

                 Print line   Position   Oper  Compare value
                    ___       ___  -  ___  __  ________________
                    ___       ___  -  ___  __  ________________
                    ___       ___  -  ___  __  ________________

Find recipient ID in the following positions
                 Print line   Position
                    _13       _57  -  _60
                    ___       ___  -  ___
                    ___       ___  -  ___
                    ___       ___  -  ___
                    ___       ___  -  ___
                    ___       ___  -  ___
F3=Exit                                              F12=Cancel
```

We enter 1 for the first Finishing Recipient-ID definition.

Page Selection Criteria:
The level break is made when a condition of one of the 3 Page Selection Criteria lines is true. If the condition of line one is not true, the second line will be checked etc. If non of the 3 lines are true the rest of the lines on this screen are ignored and the next Recipient ID sequence number is processed. Read more on page 315.

Print Line: The print line in the spool entry to search.

Position: The column interval to search

Oper. The operator relating to the compare value.
The operators used are standard Query operators.

EQ Equal to compare value
NE Not equal to compare value
LT Less than compare value
LE Less than or equal to compare value
GT Greater than compare value
GE Greater than or equal to compare value

Compare value: The character string (case sensitive) or numeric value which the operator should compare with. The comparison is in reality done on hexadecimal values. This means that eg. the figure “1" which has EBCDIC value F1h is greater than the character “Z” which has EBCDIC value E9h.

Example 1, Level Break on Page Counter

The page selection criteria will primarily be used when the spool data contains numbered recipient pages, eg. runs of invoices where each new invoice in the spool entry indicates “page1".

By displaying the test spool entry we find a page count in Line **3** column **72.**

```
                              DISPLAY SPOOLED FILE
File . . . . . : QPRINT                                  Page/Line 1/3
Function . . . . _____                                   Columns   1 - 78
Search for . . . _____
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
                                                                       1
       Herring Marine Research
       Seaweed Street 14
       9000 Battleaxe
       DK-Denmark
       ----------------------
       Att: Martin Merman
                                                  1004/PDC.20-02-2008
       Re. Your new InterForm400 modules.
```

By stating the following information for the page selection criteria, we make a level break every time the page count is reset to 1.

```
Page selection criteria

                Print line   Position   Oper  Compare value
                   __3      _72  -  _72  EQ  1_____________
                   ___      ___  -  ___  __  _____________
                   ___      ___  -  ___  __  _____________
```

In the test spool entry you will discover that the two letters for Florence Flowers are numbered in succession. The above definition will therefore see it to that no level break occur between these two letters which means they will be inserted into the same envelope, or stapled together.

Go to section **Using the Finishing Definition with Auto Forms Control** in order to test the definition.

Find Recipient ID in the Following Positions

This feature will make a level break on recipient variations found in the spool entry.

These fields can be combined with the Page Selection Criteria but they are more likely to be used alone. If Page Selection Criteria is used, then one of the three criteria lines must be true in order for the recipient ID fields to be checked.
The level break is made when one or more characters changes within one of the defined line and column intervals.

Print Line: The print line in the spool entry to monitor.

Position: The column interval to monitor

Example 2, Level Break on Change in Customer Info:

The most commonly used method will be to monitor a Customer ID in a certain position. A customer ID will most likely be printed on all pages for one recipient.

The following example monitors the customer ID in our test spool entry. That means if the Customer ID between two successive pages in the spool entry does not change these two pages will be inserted in the same envelope, or stapled together. The Customer ID is found in line **13** column **57** to **60**.

```
                            DISPLAY SPOOLED FILE
File . . . . . : QPRINT                                Page/Line 1/13
Function . . . . _____                                 Columns   1 - 78
Search for . . . _____
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+
                                                      1004/PDC.20-02-2008
       Re. Your new InterForm400 modules.
```

The following definition should be made. Note that the Page selection criteria is left blank:

```
Page selection criteria

                  Print line   Position   Oper  Compare value
                     ___       ___  -  ___  __  ________________
                     ___       ___  -  ___  __  ________________
                     ___       ___  -  ___  __  ________________

 Find recipient ID in the following positions
                  Print line   Position
                     _13       _57  -  _60
                     ___       ___  -  ___
                     ___       ___  -  ___
                     ___       ___  -  ___
                     ___       ___  -  ___
                     ___       ___  -  ___
 F3=Exit                                                F12=Cancel
```

This definition will cause the two pages for Florence Flowers to be inserted in one envelope, or stapled together.

In order to test the above definitions proceed with the next section.

Example 3, Level Break on Customer ID and Attention Person

This example extends the previous sample to consider that several persons could exist for the same customer ID, and the letters therefore should be inserted in separate envelopes, or not stapled together.

The following example monitors two fields in our test spool entry. The Customer ID and the attention person. That means if there is no attention person or the attention person is the same, all pages will insert into the same envelope or be stapled together. The attention person in the test spool entry is found in line **11** column **13** to **30:**

```
                              DISPLAY SPOOLED FILE
File . . . . . : QPRINT                                 Page/Line 1/11
Function . . . . _____                                  Columns   1 - 78
Search for . . . _____
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
       Att: Martin Merman
                                                       1004/PDC.20-02-2008
       Re. Your new InterForm400 modules.
```

The following definition should be made. Note that the Page selection criteria is left blank:

```
Page selection criteria

                  Print line   Position   Oper  Compare value
                     ___       ___  -  ___  __  ________________
                     ___       ___  -  ___  __  ________________
                     ___       ___  -  ___  __  ________________

 Find recipient ID in the following positions
                  Print line   Position
                     _13       _57  -  _60
                     _11       _13  -  _30
                     ___       ___  -  ___
                     ___       ___  -  ___
                     ___       ___  -  ___
                     ___       ___  -  ___
 F3=Exit                                                F12=Cancel
```

This definition will cause the two pages for Florence Flowers to be inserted in two separate envelopes, or stapled separately, as they have different attention persons.

In order to test the above definitions proceed with the next section.

Using the Finishing Definition with Auto Forms Control

Prior to making the following definitions for Finishing control in Auto Forms Control, a Finishing Definition must exist.

Enter menu point **5. Auto Forms Control** on the main menu, and select **1. Functions Attached to output queues**. Either create a new AFC queue to be used as input queue for the PFE MailPrinter / Prinserter or printer with Finishing equipment, or edit an existing definition. Please refer to the InterForm400® manual for additional information on general operation of Auto Forms Control.

Activate the Finishing pre-process definition

In the following we have created a new AFC queue called PFE_IN, and we define our first AFC definition line to be **C=Prepare for Finishing**. By entering a Form type we can limit the preparation to specific input spool entries, in this case spool files with Form type DEMO:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   PFE_IN         Library:   QUSRSYS

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData




(No functions defined)



Seqnbr Function   Attributtes of input file for which to execute the function
  1,0    C        Form type  . . . . . . . . . . . . . . DEMO______
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  Program that opened file . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  User-specified data  . . . . . . . . . __________
F3=Exit           F13=Fold/Unfold                          F12=Cancel
```

This function will read a spool entry with Form type DEMO, and create a new spool entry with Form type PFEREADY and return it to the output queue PFE_IN..

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   PFE_IN         Library:   QUSRSYS

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData




(No functions defined)



Seqnbr Function
  1,0    C        Prepare for Finishing

                           Finish definition name . . . . .  PFEDEF1___
                           Output queue for prepared print   PFE_IN____
                             Library  . . . . . . . . . . .    QUSRSYS___
                           Form type  . . . . . . . . . . .  PFEREADY__

F3=Exit             F4=Prompt                                F12=Cancel
```

Finishing

Definition name: Finishing Definition created with option **4. Finishing Definitions** on the Auto Forms Control menu.

Output queue: The Finishing pre-process will generate a *SCS spool entry. This spool entry will be formatted with Finishing preprocessing information (can be viewed from position 341 using DSPSPLF). This spool entry should normally be printed to the same AFC input queue, in order to merge it with an overlay. Note, that sending this spool entry directly to the PFE MailPrinter / Prinserter or printer with Finishing equipment will have no effect.

Form type: The pre-processed spool entry should have a Form type defined which allows a following **1=Merge with overlay** line to create a PCL formatted output for the PFE MailPrinter / Prinserter or printer with Finishing equipment.

Merge with pre-processed Finishing spool entry

We can now merge the new spool entry with an overlay conditioned by the Formtype **PFEREADY** or by using an Overlay Selector:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   PFE_IN         Library:   QUSRSYS

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  C  DEMO
          Finish def: PFEDEF1 outq: PFE_IN     library: QUSRSYS form type




Seqnbr Function   Attributtes of input file for which to execute the function
  2,0    1        Form type  . . . . . . . . . . . . . . PFEREADY__
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  Program that opened file . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  User-specified data  . . . . . . . . . __________
F3=Exit           F13=Fold/Unfold                           F12=Cancel
```

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   PFE_IN         Library:   QUSRSYS

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  C  DEMO
          Finish def: PFEDEF1 outq: PFE_IN     library: QUSRSYS form type




Seqnbr Function
  2,0    1        Merge with overlay

                  Output queue for merged print  .  *DEFAULT__
                    Library  . . . . . . . . . . .    __________
                  InterForm 400 printer type . . .  __________
                  Unicode output . . . . . . . . .  *INPUT       *INPUT,*YES
                  Merge overprint lines  . . . . .  *NO_         *NO, *YES
```

```
                  Find overlay in form type table   N     (Y N)


F3=Exit           F13=Fold/Unfold                          F12=Cancel
```

Distribute E-mails with Auto Forms Control

When distributing spool files as PDF, an E-mail Finishing Definition first has to be executed. To do that you add a **C = Prepare for Finishing** function to the Auto Forms definitions of the relevant output queue. This screen is shown:

```
Seqnbr Function   Attributes of input file for which to execute the function
  1.0    C        Form type  . . . . . . . . . . . . . . DEMO______
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  Program that opened file . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  User-specified data  . . . . . . . . . __________
```

Here you can insert conditions for executing the finishing definition. In this case we choose only to E-mail spool files with the form type **DEMO**. Press Enter.

```
Seqnbr Function
  1.0    C        Prepare for Finishing

                           Finish definition name . . . . .  DEMO______
                           Output queue for prepared print   *INPUT____
                             Library  . . . . . . . . . . .    __________
                           Form type  . . . . . . . . . . .  EMAIL_____
```

Above an E-mail Finishing definition is specified. An Auto Forms Control function **P = Send PDF E-mail** should be executed for the form type on the specified output queue. Press Enter to continue.

```
Seqnbr Function
  1.0    C        Prepare for Finishing

                           Prepare for E-mail requires settings for
                           print that will not be send.
                           Output queue non E-mail print  .  *INPUT____
                             Library  . . . . . . . . . . .    __________
                           Form type  . . . . . . . . . . .  PRINT_____
```

On this screen it is specified what to do with spool file pages, that are not possible to send. One problem can be, that InterForm400 is not able to find an E-mail address for a key.

The final task is to insert the actual E-mail command in Auto Forms Control. You do that by inserting a function **P**. This option is shown on the AFC functions overview if you press F23=More options. Below we have entered a function P:

```
Seqnbr Function   Attributes of input file for which to execute the function
  2.0    P
                  Form type  . . . . . . . . . . . . . . EMAIL_____
                  Save attribute . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
                  Program that opened file . . . . . . . __________
                    Library  . . . . . . . . . . . . .     __________
```

In this example we only want to E-mail spool files with the form type EMAIL. Press Enter to get the view below.

```
Seqnbr Function
  2.0    P        Send spooled file as PDF email

                  Overlay name . . . . . . . . .  IF400DEMO_
                    File set . . . . . . . . . .    SAMPLE____
                  or overlay selector  . . . . .  ________
                  Primary/Secondary set  . . . .  *PRI          *PRI, *SEC
                  Unicode output . . . . . . . .  *INPUT       *INPUT, *YES
                  Merge overprint lines  . . . .  *NO          *NO, *YES
                  Color support  . . . . . . . .  *YES         *NO, *YES
                  Save email . . . . . . . . . .  *NO_         *NO, *YES
```

Notice: As the Finishing definition is splitting up the original spool file, the P-function is executed for each of the splitted spool files. This is done in order to keep track of what E-mails that got though and which ones that did not. In this manner it is easier to resend a specific mail if necessary.

💣 WARNING 💣

*You have to make sure, that Auto Forms Control executes a Finishing Definition of type 5=E-mail for the spool file prior the function **P = Send PDF E-mail**. If you fail to do that the Auto Forms Control job will halt with an error: AFC7002 InterForm unable to send email from output queue <library>/<output queue> (C R I).*

! IMPORTANT !

*When defining a merge with overlay for a pre-processed PFE MailPrinter finishing definition, the overlay- or selector name entered must be for the contents of the envelope and **NOT** for the envelope itself.*

💣 WARNING 💣

*The Prinserter is in reality a HP PCL5e compatible printer type and the printertype **HP4** should always be used.*

💣 WARNING 💣

*The Finishing definitions will **not** work with copies. If more copies have been defined for the merge it will result in faulty insertions. (NOT valid for the PFE MailPrinter)*

☺ TIP ☺

Copy Management defined for the overlay is only supported for the overlay entered in the pop-up window when you defined your pre-process. You can, however, alternatively use the program PRSCOPY to generate the copies. Refer to page 178 for more information. (NOT valid for the PFE MailPrinter)

The Reformat finishing definition

In InterForm400 you are always limited by the page breaks of the original *SCS spooled files. You never able to move information from one page to another or to change the height of the page making it possible to print more information on the final output. BUT with the Reformat finishing definition things have changed.

The reformat definition makes it possible to change the page breaks of an *SCS spooled file. It is intended for *SCS spooled files, that contains documents for different customers with detail lines. The reformat will create a new *SCS spooled file with new page numbers within each document, rearrange text for each detail line (and following text lines) and e.g. even call a user exit program to include advanced calculations for each new detail line.

In order to create a new Reformat finishing definition you select this from the InterForm400 Main Menu:

'5. Work with Auto Forms Control'
'4. Finish Definitions'
Press F6=Add
State a name and description and select type: '07 = Reformat Spooled File'.

Then you will see this screen:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Type option, Press Enter.
1=Select

Opt    Definition
 _     Head
 _     User exit program
 _     Detail lines
 _     Totals
 _     Footer









F3=Exit                                                  F12=Cancel
```

Below each of the elements are described:

Head

When you select this element the first screen will look like this:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Input head
  Number of lines  . . . . .  10__    1 - 200, *VAR
```

Here you can state how many of the first lines (including the blank lines) from the input spooled file, that are considered a part of the header i.e. that they are not detail lines. If you state e.g. 10,

then all line 1-10 of the input spooled file is considered to be the header. If you specify *VAR this will part of the screen will change to this:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Input head
  Number of lines  . . . . .  *VAR

  The last line of head is found as the first line, that has
  startposition  ___     length __  = ____________________________________
                         or         = ____________________________________
                         or         = ____________________________________
                         or         = ____________________________________
  + 0 lines.

Output heads are to have __ lines.
```

On the screen above you tell InterForm400 how to detect the last line of the input header. The number keyed in '**+ _ lines'** will be added to the line number where the condition above is met. So if the condition e.g. is found in line 5 and you have '3' in this place, then the first 8 lines are considered to be a header.

The number in '**Output heads are to have ___ lines.**' tells InterForm400 the minimum number of lines for the output header. However the number of lines in the output header can never be lower than number of lines in the header of the input spooled file.

Press Enter and you will come to this screen:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Input head

Levelbreak is found in head

         line    __     startpos. ___    length __
     and line    __     startpos. ___    length __
     and line    __     startpos. ___    length __

Page number within level is to be printed in output
        line  __   position ___

Line-id is to be printed in all output lines in output
       position ___




F3=Exit                                                 F12=Cancel
```

Each time there is a new customer InterForm400 will have to make a page break in the new spooled file. Above you state how InterForm400 can determine that. If the information found in the place pointed to by '**Levelbreak is found in head**..' changes, then InterForm400 will do a level break. So here you should point to a place where a document reference number is found (e.g. invoice number).

Next you should state a place, where the page number within each new document is to be placed. Finally you can choose where to print the **line-id** of each detail line in the reformattet output. The line-id is identification of each line that can be useful for making conditions in the overlay that you merge with later on.

User exit program

From the reformat finishing definition you can call a user exit program in order e.g. to extract certain information from the spooled file, transfer that to the program, where you e.g. calculate other values which then are placed back into the new spooled file.

When you select this option you will see a screen like this (if you press Enter a couple of times):

```
         Work with reformat definition                                RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file



User exit program  . . . . :  __________     *NONE
  Library  . . . . . . . . :    __________   Name, *LIBL

Exit fields from 1st head in level to user exit program
    Field-1   linenbr __   position ___   length ___
    Field-2   linenbr __   position ___   length ___
    Field-3   linenbr __   position ___   length ___

Is user exit program to be called when processing 1st head
in level . . . . . :  ____   *NO, *YES

Placing of return fields in output head
    Field-1   linenbr __   position ___
    Field-2   linenbr __   position ___
    Field-3   linenbr __   position ___
F3=Exit                                                 F12=Cancel
```

On the top you can enter a user exit program. This program must be owned by QSECOFR (like all InterForm400 exit programs). On the middle of this screen you can specify if you want the reformat definition to call the program each time a new header is made or not. If you state *YES, then the up to 3 fields specified in the top of the screen will be transferred to the user exit program when called. The program can return up to 3 fields, that are placed as stated in the bottom of the screen above.

For an example of such a user exit program look in member **RFMEXIT** in source file **APF3812/APISRC**. This program must be owned by QSECOFR (like all user exit programs called by InterForm400).

Note, that the same program can be called when handling each detail line later. The parameter &CALLID will indicate if the program is called from a header or detail line.

> **WARNING**
>
> *Do **NOT** place any programs or other objects in the APF3812 library as these objects will not be copied over to the new version in case of an upgrade of InterForm400.*

Detail lines

Select this option and you will get to the screen below:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Number of detail lines per output page

  1st page per level break .  ____
  Following pages  . . . . .  ____


Maximum number of blank lines
between 2 detail lines . .    __









F3=Exit                                                  F12=Cancel
```

You fill in the fields:

1st page per level break — This indicates how many detail lines, that there is room for on the first page for each document or customer (after a level break).

Following pages — The page header will be excluded from the second and following pages. That should make room for more detail lines. You type how many lines there are room for here.

Maximum number of blank lines between 2 detail lines — As a part of reformatting there might be some new blank lines within the detail lines. Here you can limit the number of the blank lines.

Press <Enter> and you will get a list of rule lines describing how the detail lines should be handled and build up. Type a new sequence number and press the <Field Exit> key to create a new line:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Reformating detail lines       Rule 02 All non empty detail lines
 01    All non empty detail lines




Rule   Description
 1.0   ______________________________
       If     position . . . . . .  ___          1-378
              length . . . . . . .  __           1-30
              compare type . . . .  _            = > < N A U
              compare value  . . .  ____________________________
              occurrence . . . . .  ______       *ALL, *FIRST, *LAST
       Number of lines to handle .  ____         1-99, *VAR
       Action  . . . . . . . . . .  _________    *REFORMAT, *DELETE
       Line-ID code  . . . . . . .  ____
       Call user exit program  . .  ____         *NO, *YES
F3=Exit                              F11=Delete       F12=Cancel
```

Here you first enter a condition to select only this specific type of detail line. This condition will only be considered for the lines after the header:

Position — The starting position of the text compare.

Length The length of text to compare.

Compare type The type of compare to do. Refer to page 93 for an explanation.

Compare value The text, that should be compared with.

Occurrence States which of the lines (fitting the condition), that should be selected: ***FIRST** will be used only for the first time this line is found after a level break and ***LAST** will be used for the last time only that this line is found within a level break.

Number of lines to handle Here you state how many detail lines, that should be 'taken' from the original spooled file if the condition is true. All the lines from the original spooled file will be available for reformatting when progressing. If you use ***VAR** this line will get all the detail lines of the original spooled file until this or another condition is true.

Action Select ***REFORMAT** if you want the text of the input detail line(s) on the output spooled file as well. Use ***DELETE** if this line (or lines) should not be visible on the output spooled file.

Line-ID code A code for this kind of detail line. This will be inserted on the output spooled file e.g. to be used for conditioning in the overlay design. The position where this is placed is decided as described on page 270.

Call user exit program Tells InterForm400 if the user exit program should be called for this detail line. The program to call is defined as described on page 271 where you also can find additional information. If you activate this call this window will pop up:

```
Exit fields
  Detail exit field-1  Line __   position ___   length ___
  Detail exit field-2  Line __   position ___   length ___
  Detail exit field-3  Line __   position ___   length ___

Placing return fields
  Return field-1  Lineno. ____   position ___
  Return field-2  Lineno. ____   position ___
  Return field-3  Lineno. ____   position ___
F3=Exit                                F12=Cancel
```

Here you can specify the information, that you want to transfer from the spooled file onto the user program and where you want to place returned information. The line numbers are all relative to the line where the condition is met.

If you above have chosen ***REFORMAT** for the action to take you will see a list of lines describing how the output detail line(s) should look. You can insert 2 types of definition lines:

1 = Reformat input:

```
Seqnbr. Type  Input line   position  length      Output line   position
   1.0   1        __          ___     ___            __          ___
```

2 = Text constant:

```
Seqnbr. Type  Text constant                      Output line   position
   2.0   2    _________________________________      __          ___
```

With these 2 types of lines you can decide how the input detail line(s) should be presented in the output spooled file.

> **WARNING**
> *Plan how you want to structure the sequence of these lines as there is no tool for resequencing.*

Totals

When you select this option you are asked if the print out has totals. If you answer *NO, then it is assumed, that the original spooled file has no totals and that no totals should be inserted in the new reformatted spooled file. Below is described what to go through if you select *YES.

The first screen looks like this:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Localization of totals
  total lines starts . . . . __    0 - 99
  lines before the last occurrence
  of the text  . . . . . .  _________________________________
       or  . . . . . . . .  _________________________________
       or  . . . . . . . .  _________________________________
       or  . . . . . . . .  _________________________________
  in position  . . . . . .  ____
  length . . . . . . . . .  ___









F3=Exit                                                  F12=Cancel
```

InterForm400 will search for any of the texts you type in. You can tell how many lines before the 'hit', that should be considered to be a part of the total. If e.g. you search for the text 'Total' and there is a '**********' line just above this line, then you should enter '1' in '**total lines starts __ lines before the last occurrence**'.

Press Enter to proceed to the screen below:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Placing of totals

Select one of the following options:

  1. Just after the last detail line
  2. Like 1, if there is space for all total lines, otherwise next page.
  3. In foot


Option  _









F3=Exit                                                  F12=Cancel
```

On this screen you can decide how the total should be inserted:

1. Just after the last detail line
This choice will insert the totals just after the last detail line. If there is no room for all lines for the total, then the rest is inserted on the next page.

2. Like 1, if there is space for all total lines, otherwise next page.
This works like a 'block protect'. Transfers all the total lines onto the next page if necessary.

3. In foot
Prints the totals in the footer.

Press Enter to proceed to this screen:

```
         Work with reformat definition                              RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Extra total page

Extra total page is created, if number of output detail lines on the last
page is above a certain limit

  Limit detail lines if last page is page 1 . . . .   __0
  Limit detail lines if last page is >1 . . . . . .   __0

Total line-ID
  If only 1 total page  . . . . . .  ____
  If 2 total pages, first total . .  ____
  If 2 total pages, extra total . .  ____









F3=Exit                                                  F12=Cancel
```

The header may be larger on page 1 for each document, so there might room for fewer detail lines on the first page than on the subsequent pages. You state here the number of detail lines that there are room for.

You can also state various line-ID's depending on if the total is spread across two pages or not:

If only 1 total page This denotes the line-ID to be inserted if the total is not spread across 2 pages.

If 2 total pages, first total The specifies the line-ID for the part of the total lines, that are placed on the page before the last - if the total lines are split across pages.

If 2 total pages, extra total States what line-ID to insert for the part of the total lines, that is placed on the last page - if the total lines are split across pages.

When you press Enter you will proceed to this screen:

```
         Work with reformat definition                                RFM300D

Definition name  . . . . . : DEMO_REFOR
Description  . . . . . . . : Reformat the Demo spooled file

Reformating totals

 0001    1        01          050     060              1           50
 0002    2    Total                                    1           40









Seqnbr. Type
   2.0   _         1 = Reformat input
               2 = Text constant




F3=Exit                                   F11=Delete       F12=Cancel
```

Here you can edit and rearrange the total lines in the output spooled file. This works exactly as for the detail lines. Refer to page 273 for more information.

Footer

Here you key in the placement of the footer i.e. in which line number it starts in the original spooled file and how many of the footer lines, that you want to include in the new reformatted spooled file.

NOTE: The footer lines will in the output spooled file be placed between the header and the detail lines.

Insert reformatting in production

When you have defined your reformat finishing definition you go to Auto Forms Control and insert a function 'C = Prepare for Finishing' for the relevant output queue. Refer to page 171 for more information.

The XML Definitions

When exchanging data with other applications it can sometimes be an idea to consider XML files as a way of transport. You can use InterForm400 to convert your spooled files into XML files like described below.

Please note: The procedure to build up the structure of the XML file is quite easy to understand and fast, but this also contains some contraints, so not any XML file structure can be built.

In order to use the XML definitions you will need to have either a normal full InterForm400 classic license or the *PDF option enabled in InterForm400.

For advanced XML definitions the XML+ module should be considered. This module is described on page 294.

Setting up the XML conversion

Before you can convert spooled files into XML you will first need to specify how they should be converted. The setup of the conversion is done via an XML definition, which you setup from the InterForm400 Main Menu by selecting option '5. Work with Auto Forms Control', '4. Finish Definitions' and finally pressing F6=Add to create a new XML definition - with the type 08 = XML definition:

```
          Create Finish Definition                                  PRS310D

Definition name  . . . . . . XML DEMO
Description  . . . . . . . . Demo: Convert demo spooled file into XML


Type of Finishing  . . . . . 08     01 = Prinserter
                                    02 = Stapling per Recipient
                                    03 = Prepare for inserting
                                    04 = PFE Mail-Printer
                                    05 = Prepare for email/Fax
                                    06 = PDF Filenaming
                                    07 = Reformat Spooled File
                                    08 = XML definition









F3=Exit                                                F12=Cancel
```

The next screen looks like this:

```
         XML structure and data                                    XML300D

XML definition name  . . :   XML_DEMO
Description  . . . . . . :   Demo: Convert demo spooled file into XML

Type options, press Enter.
  1=Select

Opt    Definition
 _     XML output file and exit program
 _     Page type definitions
 _     Line type definitions
 _     XML structure and data




F3=Exit   F12=Cancel
```

This is where you select each of the features below.

> ☺ **TIP** ☺
> *The definition, XML_DEMO defined here, is for the InterForm400 demo spooled file, which can be printed via the InterForm400 Service Menu. You can try it out yourself after entering the same definition.*

XML output file and exit program

Here you specify the path and name of the XML file:

```
         Change XML definition                                     XML300D

XML definition name  . . :   XML_DEMO
Description  . . . . . . :   Demo: Convert demo spooled file into XML

User exit program  . . . .   *NONE        Name, *NONE
  Library  . . . . . . . .     __________  Name, *LIBL

XML output file  . . . . .   /APF3812Home/Work/MyFile*V1-*STAMP.xml
_____________________________________________________________________
_____________________________________________________________________
_____________________________________

Create directories . . . .   N   Y=Yes, N=No

Generate unique* name  . .   N   Y=Yes, N=No

Replace stream file  . . .   N   Y=Yes, N=No


* Names are only unique per spooled file

F3=Exit   F10=Define variables   F12=Cancel
```

At the top of the screen you can state a user exit program if needed. The demo source of the program is included in source member XMLEXIT in the source file APISRC inside the APF3812 library.

The program will be called in these situations:

*START	Intial call before any processing (Open files if necessary)
*OPEN	Open new XML file (A new XML file is opened for write)
*DATA	Field or attributte value (Assign a value to either a field or attribute)

*CLOSE XML file closed (The XML file is done: Process the finished file if needed)
*END End processing (Close files if necessary)

For the XML output file you can e.g. include variables (*V1-*V9) and the special variable *STAMP to include a time stamp in the path or file name as shown above.

These options are available:

Create directories

Activate this option to let InterForm400 automatically create the necessary directories, if they should not already exist. If you state 'N' and there is a directory missing, then you will get an error message, when you try to create the XML file(s).

Generate unique* name

If you should happen to setup a definition, which will try to create an XML file, that already exist, then you can with this option simply tell InterForm400 to automatically generate a new XML file name if needed. An extra counter will be added just before the .xml extension in the file name above. Please note, that the xml files are only unique per spooled file - so if you rerun the same spooled file, then the xml files will be named the same as the first time you run the definition.

Replace stream file

State 'Y', if you want new XML files to replace existing ones with the same name.

If you have included a variable (*V1-*V9) in the file name or path, then you need also to define them. That is done via F10=Define variables on the screen above, via which you can see the defined variables and add new with F6 like below:

```
          Change variable definition                              XML371D

XML definition name  . . :   XML_DEMO


Sequence number  . . . . .     1
Variable . . . . . . . . .   *V1          *V1-*V9

Description  . . . . . . .   Regarding

Page type(s) . . . . . . .   PAGE1
Line type  . . . . . . . .
  Use relative line  . . .     _           Y=Yes, N=No
Line . . . . . . . . . . .    15
From position  . . . . . .    12
To position  . . . . . . .    41
Length . . . . . . . . . .

Operator . . . . . . . . .               F4=List
Compare value  . . . . . .

                                                                  More...
F3=Exit    F4=List    F12=Cancel
```

Refer to page 286 for a complete description of how you can define the variables in an XML definition.

Unless you state a double slash (//) for the root node in the XML structure (as described on page 285), you will only create one XML file and the value for the variables is found only on the first page. If you do state a double slash one XML file will be created for each new value of the variable. To create multiple XML files you also need to defined at least one attribute or field in the root node.

Page type definitions

The next issue is to define at least one or more page types. You can add one by pressing F6=Create on the screen below:

```
         Work with page type definitions                              XML310D

XML definition name . :   XML_DEMO

Position to . . . . . .           Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Change sequence

Opt  SeqNbr  Description                                          Page type
 _        1  Page 1 of each Document                             PAGE1
 _        2  Other pages                                         OTHER









                                                                        End
F3=Exit   F6=Create   F12=Cancel
```

```
         Change page type definition                                  XML311D

XML definition name  . . :   XML_DEMO

Sequence number  . . . . :     1
Description  . . . . . .   Page 1 of each Document

Page type  . . . . . . . .   PAGE1

Is first page  . . . . . .   Y            Y=Yes, N=No
Is last page . . . . . . .   N            Y=Yes, N=No

Type comparisons, press Enter. Specify OR to start each new group.

AND/OR  Line(s)  Pos(s)    Operator  Compare value
          3      71-72       EQ       1
 ___    _____    _____      _____    ____________________________________
 ___    _____    _____      _____    ____________________________________
 ___    _____    _____      _____    ____________________________________
 ___    _____    _____      _____    ____________________________________
 ___    _____    _____      _____    ____________________________________
 ___    _____    _____      _____    ____________________________________
                                                                    More...
F3=Exit   F4=List   F12=Cancel
```

```
         Change page type definition                                XML311D

XML definition name  . . :   XML_DEMO

Sequence number  . . . . :     2
Description  . . . . . . .   Other  pages

Page type  . . . . . . . .   OTHER

Is first page  . . . . . .   N           Y=Yes, N=No
Is last page . . . . . . .   N           Y=Yes, N=No

Type comparisons, press Enter. Specify OR to start each new group.

AND/OR  Line(s)  Pos(s)    Operator  Compare value
        _______  ______     ______   ________________________________
___     _______  ______     ______   ________________________________
___     _______  ______     ______   ________________________________
___     _______  ______     ______   ________________________________
___     _______  ______     ______   ________________________________
___     _______  ______     ______   ________________________________
                                                                 More...
F3=Exit    F4=List    F12=Cancel
```

With the setup above, we can insert header information of the first page of each document and use the OTHER page type to include the rest of the pages - if needed. If you want a field to be retrieved on all pages of the spooled file, you will actually not need to condition it on any page type, so the OTHER page type above will usually not be necessary.

The sequence number above indicates in which order, that InterForm400 will check the conditions. The first sequence number with a true condition will select the specific page type for the relevant page. (Each spooled file page can only have one page type).

The **description** is for your own use.

The **Page type** is what you name the specific page(s), that are selected with the condition below. You can later refer to page type e.g. for the lines or as conditions for variables and attributes.

Is first page If you state 'Y' for this, then it indicates, that a new input document/group starts whenever this page type is selected (because of the condition being true).

Is last page When this page type is selected, then it is interpreted as the last page of a group/document and a new group/document is starting on the next spooled file page.

If all documents in the spooled file are single page documents, then you can simply create one single page type with 'Y' for both 'Is first page' and 'Is last page' - and no conditions in the bottom of the screen.

The conditions below can be written with intervals of lines and positions. An interval is simply written as '71-72', if you want to state the interval of 71 to 72 as shown above. You can prompt the operator with F4 to view a list of all possible operators:

CT	Contains string of characters
EQ	Equal
FIXCHR	Fixed characters at fixed positions (allow others) (*XML+ Module only).
GE	Greater than or equal to
GT	Greater than
INVCHR	Invalid characters (One or more chars not listed)
LE	Less than or equal to
LIST	List (field equals Value1, or equals Value2,...)
LT	Less than
NCT	Does not contains string of characters
NE	Not equal
NLIST	Not list (field does not equal Value1, or....)
VALCHR	Valid characters (Allow only characters listed)

Later you can search for various variables in the spooled file depending on specific page type(s) and/or line type(s).

Line type definitions

If you want to scan an interval of lines for a condition, you should create one or more line definitions. If you want to refer to data, that is always placed in fixed lines/positions, then a line type is normally not needed.

When you select option '1' for the 'Line type definitions', you will see the existing line definitions listed:

```
         Work with line type definitions                              XML310D

XML definition name . :   XML_DEMO

Position to . . . . . .   _____   Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Change sequence

Opt  SeqNbr  Description                                        Line type
 _         1  Detail lines                                      DETAIL     -









                                                                        End
F3=Exit   F6=Create   F11=View 2   F12=Cancel
```

You create a new line type definition by pressing F6=Create:

```
         Change line type definition                                  XML311D

XML definition name  . . :   XML_DEMO

Sequence number  . . . . :   ___1
Description  . . . . . . .   Detail lines_____________________________________
Input line type  . . . . .   _________   Name, blank=entire page
Line type  . . . . . . . .   DETAIL___
Allow additional types . .   N           Y=Yes, N=No
Include lines above  . . .   ____
Include lines below  . . .   ____

Type comparisons, press Enter. Specify OR to start each new group.

AND/OR  Line(s)  Pos(s)    Operator  Compare value
        _30-42   __1-30    NE___     ____________________________________________
 ___    _______  _______   ______    ____________________________________________
 ___    _______  _______   ______    ____________________________________________
 ___    _______  _______   ______    ____________________________________________
 ___    _______  _______   ______    ____________________________________________
 ___    _______  _______   ______    ____________________________________________
                                                                        More...
F3=Exit   F4=List   F12=Cancel
```

* Input line type is only available in XML+, which requires the XML+ module.

The screen includes these fields:

Sequence number

Like for the page type, this determines in which order the line types are executed. The first line type that contains a condition that is true for a specific line in the spooled file, will exclude the following line types to be selected for this spooled file line - unless the field '**Allow additional types'** has been set to '**Y**'.

Input line type

This option is only available with the XML+ module. If you have detail lines, where each detail entry may span across multiple lines, then these may be cut in the middle i.e. a page break may divide these lines. If you e.g. imagine such a detail entry in the spooled file:

```
PartNo   Description        Quantity     Total
0001     This is a very, very long description
                            17          340,00
```

- and a page break is found in the input spooled file like so:

```
PartNo   Description        Quantity     Total
0001     This is a very, very long description
<Page Break>
                            17          340,00
```

Then we want to combine information from two pages into a combined detail line in the output XML file. If we identify these detail lines with a line type, and then use this line type as 'Input line type', then an internal 'work spooled file' is generated, in which all these detail lines are inserted, so that we can still refer to the relative lines. So if we e.g. search for the detail lines found via a part number, then we can (still) use relative line 2 to pick up the quantity and amount - even though they are (sometimes) found on the next page.

Allow additional types

As indicated above, this can make it possible to assign more than one line type to one spooled file line. This may be useful if you e.g. have 2 or more columns in the spooled file. The value of this parameter can be seen on screen XML310D (shown above) as a '+' or '-' to the right of the line type.

Include lines above

If you want to assign the same line type to a number of preceding spooled file lines, then you can state just how many lines above the one selected by the condition (stated in the bottom of the screen), that should also have this line type. (The first of these lines will later be referenced to as line 1).

Include lines below

Simular to the previous field - only including spooled lines below the condition.

You may notice the syntax for stating an interval of lines and/or positions above. Here we are conditioning on the spooled file line interval 30 to 42 and searching the positions 1-30: If these positions are not blank (within the line interval), then the line is a 'DETAIL' line. You may also notice, that the operator can be prompted with F4 (see possible values on page 281), and that the compare value should not be stated with hyphens ('').

Later you can search for specific variables in the spooled file, conditioned on line type(s) and/or page type(s).

XML structure and data

Under this option you define the structure of the nodes within the XML file:

```
         Work with XML nodes                                        XML350D

XML definition name . :   XML_DEMO

Position to . . . . . .   _____   Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Field definitions

Opt  SeqNbr  XML path
__         1  /Root
__         2  /Root//Document
__         3  /Root/Document//DetailLine









                                                                      End
F3=Exit   F6=Create   F11=View 2   F12=Cancel
```

Press F6=Create to add new nodes:

```
         Change XML node                                            XML351D

XML definition name  . . :   XML_DEMO

Node sequence  . . . . . .   ____3

XML path . . . . . . . . .   /Root/Document//DetailLine_____________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________

Note:
Specify XML path as /rotnode/node2/node3...

To allow duplicate fields inside page segments specify a double slash (//)
before the node that will be repeated when ever a field for the node is
repeated.



F3=Exit   F12=Cancel
```

You gradually add new nodes like shown above. Please note, that you insert the double slash for the node, that will be repeated for each value found (for a specified variable) in the spooled file.

You may only insert one double quote (//) in each sequence number.

XML Field Definitions

One the overview screen of the nodes (XML350D), you can use option 12=Field definitions to link the nodes with data found in the spooled file:

```
         Work with XML nodes                                        XML350D

XML definition name . :   XML_DEMO

Position to . . . . . .   ______  Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Field definitions

Opt  SeqNbr  XML path
__         1  /Root
__         2  /Root//Document
__         3  /Root/Document//DetailLine









                                                                      End
F3=Exit   F6=Create   F11=View 2   F12=Cancel
```

If you have defined any variable (*V1-*V9) for the XML file/path as shown on page 278, and you want to create a new XML file for each value found, then you need to state the root path (called **/Root** in the screen above) - not with a single slash, but double slash (e.g. **//Root**).

Via option 12=Field definitions this screen is accessed, where all existing fields for the current node is shown:

```
         Work with field definitions                                XML360D

XML definition name . :   XML_DEMO
Sequence number . . . :       2
XML path  . . . . . . :   /Root//Document

Position to . . . . . .   _____   Field sequence

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt  F-seq  Field@Attribute                          Page type(s)  Line type
 _       1  @Company                                 PAGE1
 _       2  DocumentNo                               PAGE1









                                                                      End
F3=Exit   F6=Create   F11=View 2   F12=Cancel
```

```
         Work with field definitions                                  XML360D

XML definition name . :   XML_DEMO
Sequence number . . . :       3
XML path  . . . . . . :   /Root/Document//DetailLine

Position to . . . . . .   _____   Field sequence

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt  F-seq  Field@Attribute                          Page type(s)  Line type
 _       1  @SEQ                                                   DETAIL
 _       1  Product                                                DETAIL
 _       2  Model                                                  DETAIL
 _       3  i-Group                                                DETAIL
 _       4  SN                                                     DETAIL
 _       5  LicenseCode                                            DETAIL



                                                                        End
F3=Exit   F6=Create   F11=View 2   F12=Cancel
```

Now you use 2=Change or F6=Create to edit or create a Field for this node as seen below.

If you want to add an attribute for a node, then you do it like shown below:
(Use sequence number=1, keep the Field blank and simply write the attribute).

```
         Change field definition                                      XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :       2
XML path . . . . . . . . :   /Root//Document

Field sequence . . . . . .   ___1
Field  . . . . . . . . . .   ____________________________________________________
Attribute  . . . . . . . .   Company_____________________________________________
Description  . . . . . . .   Company Name________________________________________

Page type(s) . . . . . . .   PAGE1_____  _________  __________  __________
Line type  . . . . . . . .   __________
  Use relative line  . . .   _          Y=Yes, N=No
Line . . . . . . . . . . .   _6
From position  . . . . . .   _8
To position  . . . . . . .   40
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   ______     F4=List
Compare value  . . . . . .   ____________________________________________________
                                                                      More...
F3=Exit   F4=List   F12=Cancel
```

Use <Page Down> to view the second setup screen of the field/attribute:

```
         Change field definition                                  XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :       2
XML path . . . . . . . . :   /Root//Document

Constant . . . . . . . . .   _____________________________________________
                             _____________________________________________
                             _____________________________________________
                             _____________________________________

Functions  . . . . . . . .   _________  _________  _________

                                                                      End
F3=Exit    F4=List    F12=Cancel
```

This above will insert the attribute 'Company' with the value found in the spooled file for the pages where the page type is PAGE1.

A field can be inserted like this: (Keeping the attribute blank).

```
         Change field definition                                  XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :     2
XML path . . . . . . . . :   /Root//Document_____________________________

Field sequence . . . . . .     2
Field  . . . . . . . . . .   DocumentNo_____________________________________
Attribute  . . . . . . . .   _____________________________________________
Description  . . . . . . .   Document Number_________________________________

Page type(s) . . . . . . .   PAGE1_____  _________  _________  _________
Line type  . . . . . . . .   _________
  Use relative line  . . .   _          Y=Yes, N=No
Line . . . . . . . . . . .   13
From position  . . . . . .   57
To position  . . . . . . .   60
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   _____      F4=List
Compare value  . . . . . .   _____________________________________________
                                                                    More...
F3=Exit    F4=List    F12=Cancel
```

Instead of inserting data from a fixed position like above, the data for the attribute or field can also be stated in the following manners:

- By stating a **line type** and **Use relative line = Y**, then data is selected from a the line where the line type was found. If a number of lines above and/or below was specified for a line type, then the topmost line counts as line one. (Refer to page **282** for details).
- The Field or attribute can also be **conditionally inserted** with an operator and a compare value. The possible values for the operator can be listed via F4. Refer to page **281** for the complete list. The compare value is written without quotes.
- Instead of values found in the spooled file you can also **assign a constant value** to the attribute or field.

- Apart from the above you can even **run up to 3 functions**. They are executed from the left to the right. The final value will be the result after running all the functions. The functions are listed below.

The Functions

When you specify a variable to be used either for the XML file name or as a field/attribute in the XML file, then you can use functions to calculate the final value.

The functions can be added, when editing the variables by pressing <Page Down>, where 3 fields are shown. The functions are executed in the sequence from left to right.

The possible functions are:

Function	Description
COMPARE	Run compare function here (only)
DATE-DMY	Date in format day, month, year
DATE-MDY	Date in format month, day, year
DATE-YMD	Date in format year, month, day
EXITPGM	Call exit program
GENUUID	Generate UUID (*1)
KEEPNUMCHR	Remove all non-numeric characters
NUMCOMMA	Same as NUMERIC, but convert "," to "."
NUMERIC	Format value as numeric (Remove all non-num chr)
RESETSEQ1	Reset sequence number 1
RESETSEQ2	Reset sequence number 2
RESETSEQ3	Reset sequence number 3
RMVNUMCHR	Remove numeric characters
SEQ1	Sequence number - 1
SEQ2	Sequence number - 2
SEQ3	Sequence number - 3
SST-FR-NUM	Substring from first numeric character (*1)
SST-TO-NUM	Substring to first numeric character (exclusive) (*1)
TRIMLEFT	Trim text to the left

*1: These functions are available in the XML+ Module only.

Each function is explained below.

COMPARE Instead of running the compare as the first thing before executing these (up to 3) functions, you can decide when to do the compare by inserting this function. You can e.g. first trim the text to left before the compare like so: TRIMLEFT COMPARE

DATE-XXX Interpret the data found as a date and include it in the XML output as YYYY-MM-DD. This function tells InterForm400, how to interpret the text found in the spooled file. If the text found in the spooled file is '17/01/11' and you state DATE-DMY, then the output will be '2011-01-17'.

EXITPGM Call the exit program defined on a previous screen (See page 278) with XEXITFNC=*DATA.

GENUUID Generate a UUID. (*XML+ Module only). A UUID is short for a Universal Unique Identifier. It generates a ramdom 128 bit data stream, which is converted into the equivalent 32 char Hex data stream. This can e.g. be used to create a unique file name.

KEEPNUMCHR Keep only the numeric characters in the data (remove any non-numeric character).

NUMCOMMA Same as NUMERIC, but convert "," to "." and vise versa.

NUMERIC Format as numeric - remove all non-numeric characters.

You can insert up to 3 'counters' in the XML file, which you can use as values for any attribute or field. The 3 'counters' are called: SEQ1, SEQ2 and SEQ3. If you want to insert an increasing sequence number (Starting with '1'), then use this function. You can reset the value to 1 with the RESETSEQx function.

RESETSEQ1 Reset SEQ1 to "1".
RESETSEQ2 Reset SEQ2 to "1".

RESETSEQ3 Reset SEQ3 to "1".

RMVNUMCHR Remove numeric characters.

SEQ1 Insert the value of SEQ1 in the current attribute or field.

SEQ2 Insert the value of SEQ2 in the current attribute or field.

SEQ3 Insert the value of SEQ3 in the current attribute or field.

SST-FR-NUM Substring from first numeric character. (*XML+ Module only).

SST-TO-NUM Substring to first numeric character (exclusive) (*XML+ Module only).

TRIMLEFT Trim the text for any leading blanks.

In the example above we are using SEQ1 to add a sequence number as attribute for the detailline node. Here is the details:

```
         Change field definition                                XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :     3
XML path . . . . . . . . :   /Root/Document//DetailLine

Field sequence . . . . . .     1
Field  . . . . . . . . . .
Attribute  . . . . . . . .   SEQ
Description  . . . . . . .

Page type(s) . . . . . . .
Line type  . . . . . . . .   DETAIL
  Use relative line  . . .     N          Y=Yes, N=No
Line . . . . . . . . . . .
From position  . . . . . .
To position  . . . . . . .
Length . . . . . . . . . .

Operator . . . . . . . . .               F4=List
Compare value  . . . . . .
                                                              More...
F3=Exit   F4=List   F12=Cancel
```

```
         Change field definition                                XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :       3
XML path . . . . . . . . :   /Root/Document//DetailLine

Constant . . . . . . . . .


Functions  . . . . . . . .   SEQ1


                                                                 End
F3=Exit   F4=List   F12=Cancel
```

Only thing missing is to reset the sequence number each time there is a new document number. That is done in the company attribute:

```
         Change field definition                                  XML361D

XML definition name  . . :   XML_DEMO
Sequence number  . . . . :       2
XML path . . . . . . . . :   /Root//Document

Constant . . . . . . . . .   _____________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________

Functions  . . . . . . . .   RESETSEQ1   __________   __________

                                                                    End
F3=Exit    F4=List    F12=Cancel
```

The definitions made above are all intended for the InterForm400 demo spooled file, which you can print out from the InterForm400 Service Menu.

The final result of the settings done above results in an XML file named:
MyFileYour new InterForm400 modules.-2011-03-29-12.50.55.411000.xml

(Where “2011-03-29-12.50.55.411000" of course will be exchanged for the exact time stamp whenever the conversion is run).

The contents of the XML file will be like shown here. Because of the use of the PAGE1 page type only one <DocumentNo> field is shown for each value - not 2 for “1001" - even though 2 pages contain this value.

```
<?xml version="1.0" encoding="utf-8" ?>
- <Root>
  - <Document Company="Herring Marine Research">
      <DocumentNo>1004</DocumentNo>
    - <DetailLine SEQ="1">
        <Product>Interword400</Product>
        <Model>510</Model>
        <i-Group>i300</i-Group>
        <SN>44A2971</SN>
        <LicenseCode>81 20 01 3A</LicenseCode>
      </DetailLine>
    - <DetailLine SEQ="2">
        <Product>PDF security</Product>
        <Model>520</Model>
        <i-Group>i100</i-Group>
        <SN>44A9032</SN>
        <LicenseCode>3F 78 66 99</LicenseCode>
      </DetailLine>
    </Document>
  - <Document Company="Florence Flowers">
      <DocumentNo>1001</DocumentNo>
    - <DetailLine SEQ="1">
        <Product>Swiftview(50)</Product>
        <Model>525</Model>
        <i-Group>-</i-Group>
        <SN>44B4011</SN>
        <LicenseCode>D0 44 A9 FF</LicenseCode>
      </DetailLine>
    - <DetailLine SEQ="2">
        <Product>InterExcel400</Product>
        <Model>515</Model>
        <i-Group>-</i-Group>
        <SN>44A3531</SN>
```

Create the XML files in AFC

If you want to convert your spooled files into XML files, then you will also need to add an X-line in Auto Forms Control (AFC) like below:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT1     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0002  X  DEMO
          Create XML file def.: XML_DEMO
 0003  6
          Hold Spooled File




Seqnbr Function     Suspend
  2.0    X               *=Suspend


         P = Send PDF email / Fax
         N = Create PDF File
         W = Print to Windows printer
         X = Create XML file
         * = Comment
F3=Exit           F13=Fold/Unfold       F11=Delete          F12=Cancel
F15=Subset        F17=Subset by Spooled File      F23=More options
```

Apart from selecting the spooled file via its attributes this screen is shown:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT1     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0002  X  DEMO
          Create XML file def.: XML_DEMO
 0003  6
          Hold Spooled File




Seqnbr Function
  2.0    X        Create XML file

                  Finish definition name . . . .  XML_DEMO

                  User profile to run job . . .   *SPLFOWNER  *SPLFOWNER,
                                                              user profile
```

Refer to the description of Auto Forms Control for details.

A Limitation of the XML generator

An example of one of the limitations of the XML generator is, that you cannot build up a structure of dynamically nested nodes on a single page - only one. If you e.g. consider a spooled file looking like below, where the number of departments and products is variable:

```
Product
----------------
Department 1
 PDF security1
 PDF security2
Department 2
 PDF security3
 PDF security4
```

Then you might want an output XML like this:

```
<Root>
    <Departments>
        <Department No=”1">
                <Product>
                   <Desc>     PDF security1</Desc>
                </Product>
                <Product>
                   <Desc>PDF security2</Desc>
                </Product>
        </Department>
        <Department No=”2">
                <Product>
                   <Desc>     PDF security1</Desc>
                </Product>
                <Product>
                   <Desc>PDF security2</Desc>
                </Product>
        </Department>
    </Departments>
</Root>
```

- but that is unfortunately not possible - unless you have a page break per department.

The InterXML Module

The InterXML Module has been developed for customers with high requirements for the XML output e.g. for electronic invoicing like: UBL XML, OIOXML, EHF, ZUGFeRD etc..

The InterXML Module also includes VANS (Value Added Network Service). The VANS support is described on page 309.

XML conversions based on this module are created as XML+ finishing definitions, contrary to simple XML finishing definitions, that has the type XML.

The module can convert input spooled files into output XML files. On the surface it might look like the similar XML classic finishing definitions, but InterXML has several advantages compared to that:

- XML+ has an extra operator, FIXCHR for the page and line types. (Details can be found on page 281)

- XML+ has the same built in functions as the classic XML, but it also includes these extra internal functions compared to XML classic: (Information is included on page 289).

GENUUID	Generate UUID
RMVBLANKS	Remove blank characters
SST-FR-NUM	Substring from first numeric character
SST-TO-NUM	Substring to first numeric character (exclusive)

- XML+ can use Xpath to do calculations and conversions.

- XML+ can combine Xpath functions with these extra, predefined Xpath-functions:
  DateAddDays:
  (Add a number of days to a date and return the new date).
  fnc:DateAddDays(/default:Invoice/cbc:IssueDate , /default:Invoice/internal:PayDays)

  NewLine:
  (Insert a new line in the resulting XML file).
  concat(../internal:paytext1, '.', fnc:NewLine(), ../internal:paytext2)

  Base64EncodeFileData:
  (Convert a file into Base64 encoding and return the new data stream).
  fnc:Base64EncodeFileData('/pcdata/temp/demo.pdf')

  PropertiesFileGetByKey:
  (Lookup in a properties file defined in InterForm400).
  fnc:PropertiesFileGetByKey('/apf3812home/xml/translation/Zugferd-DK-UOM.xml',
  ../internal:dkUOM)

- With XML+ it is possible to import an existing XML file (or parts of it), and use that as a template, when mapping the spooled file.

- Tell XML+ to repeat a set of nodes for each detail line found inside the input spooled file.

- Validate the output XML file through an XSD, and/or XSLT with Xpath test.

- The line types can handle a page break in the middle of a detail line ‘block’ via an Input line type. This is described on page 283.

The XML conversion is setup via an XML+ finishing definition, which is to be called in Auto Forms Control via option X.

Please note, that it is currently not possible to convert or copy an XML classic definition into an XML+ definition or vise versa, so you need to create the correct XML type from the start.

For new users, it is recommended first to read the previous section concerning the classic XML option starting at page 277 before continuing, as the principle of the two XML options are the same and the common details are only described for the classic XML option.

Prerequisites

In order to use XML+ these prerequisites must be met:

- The XML+ Module can only be used if you are running InterForm400 with a test licence code - or if you have bought this module.
- Java 6 (or higher) must be installed on the IBM I in order to use XML+.
- Java 7 (or higher) must be installed on the IBM I in order to validate the Norwegian EHF invoice standard.
- Other special requirement may apply in order to validate other XML output formats.

Creating an XML+ Finishing Definition

The XML+ finishing definitions are created just like the XML Classic definitions - as mentioned on page 277 - except you need to create the XML+ finishing definition as type:
09 = XML+ definition (XML module required)

The XML+ finishing definitions are called in Auto Forms Control via option X = Create XML file as shown on page 292.

If you want the data retrieved from the input spooled to be depend on the page type (e.g. to get some data only from on the first page of each document), then you can define special page types. You can also define special line types e.g. to make InterForm400 add a subtree in the output XML file for each detail line found in the input spooled file. Page types are described on page 280 and Line types are described on page 282.

Creating the XML structure

For XML invoicing there are strict rules for the output XML file layout and contents. Such rules are normally described in quite complex documents and XSD's (XML Schema Definitions). The problem with such descriptions is normally, that it is hard to 'translate' such descriptions into a real example.

It is our experience, that getting a proper XML output sample makes the process much more easy. It is possible to manually build up the complete XML file manually, but it is recommended import a sample XML file instead, and map the input spooled file data into that.

Manual build up/edit of the XML structure is described on page 283, but with XML+ there are some extra tools available to build up the output XML format. You can e.g. let InterForm400 insert a subtree for each detail line in the input spooled file via option **Line type repeats** - as described on page 304.

Below some specifics for the XML+ module are described.

The XML structure is defined via this option:

```
         Change XML definition                                    XML300D

XML definition name  . . :   AAAXML
Description  . . . . . . :   XML Demo splf to Demo XML

Type options, press Enter.
  1=Select

Opt    Definition
 _     XML output file and exit program
 _     Page type definitions
 _     Line type definitions
 1     XML structure and data
 _     Line type repeats
 _     XML file validation









F3=Exit   F12=Cancel   F13=Select spooled file
```

After selecting this option, you will see this screen:

```
         Work with XML nodes                                      XML350D

XML definition name . :   AAAXML

Position to . . . . . .   _____   Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Field definitions

Opt  SeqNbr  XML path
__        10  /Root
__        20  /Root/Document
__        30  /Root/Document/DetailLine
__        40  /Root/Document/DetailLine
__        50  /Root//Document
__        60  /Root/Document/DetailLine
__        70  /Root/Document/DetailLine
__        80  /Root/Document/DetailLine
__        90  /Root/Document/DetailLine
__       100  /Root/Document/DetailLine
__       110  /Root/Document/DetailLine
                                                                  More...
F3=Exit   F6=Create   F10=Service functions   F11=View 2   F12=Cancel
```

F10=Service functions

With **F10=Service functions** you have some extra features compared to XML classic:

```
                     Service functions

 1. Copy line(s)
 2. Import xml file from stream file in /APF3812Home/work
 3. Display imported xml file
 4. Copy from imported xml file to current definition
 5. Resequence definition

 Option
 ===> _
F3=Exit   F12=Cancel
```

Each option is described below:

1. Copy line(s)

With this you can copy nodes in the output XML structure. After selecting this you state the interval of lines to copy and the destination line number. If you e.g. have an XML file with these lines:

```
         Work with XML nodes                                        XML350D

XML definition name . :   AAAXML

Position to . . . . . .           Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Field definitions

Opt  SeqNbr  XML path
__       120  /Root/Document/DetailLine
__       130  /Root/Document/DetailLine
__       140  /Root//Document
__       150  /Root/Document/DetailLine
__       160  /Root/Document/DetailLine









                                                                      End
F3=Exit   F6=Create   F10=Service functions   F11=View 2   F12=Cancel
```

Then you can copy lines 140-160 and insert them at the end like so:

```
                         Copy line(s)

 Node sequence . . . . .   140   - 160

 Insert at node sequence   170



F3=Exit   F12=Cancel
```

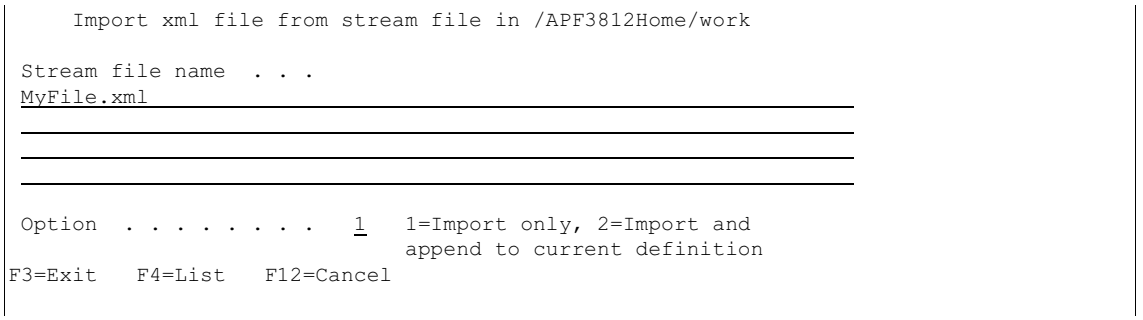
Whereby the result will look like this:

```
         Work with XML nodes                                        XML350D

XML definition name . :   AAAXML

Position to . . . . . .           Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Field definitions

Opt  SeqNbr  XML path
__       120  /Root/Document/DetailLine
__       130  /Root/Document/DetailLine
__       140  /Root//Document
__       150  /Root/Document/DetailLine
__       160  /Root/Document/DetailLine
__       170  /Root//Document
__       180  /Root/Document/DetailLine
__       190  /Root/Document/DetailLine



                                                                      End
F3=Exit   F6=Create   F10=Service functions   F11=View 2   F12=Cancel
```

2. Import xml file from stream file in /APF3812Home/work

With this option you can copy an existing XML file and use the structure from this when you are mapping data from the input spooled file into the output XML file. The XML file must be placed in the IFS inside /APF3812Home/Work.

When you select this option you will see this:



You can press F4 to view all XML files inside /APF3812Home/Work, and here select the stream file with option 1 to copy it into the screen or type in the name manually.

Here you have these options:

1=Import only
With this option you can later chose to copy fractions of the XML file instead of the complete file. The contents is on placed in 'limbo' for future copies. The fractions can be copied with option 4. Copy from imported xml file to current definition.

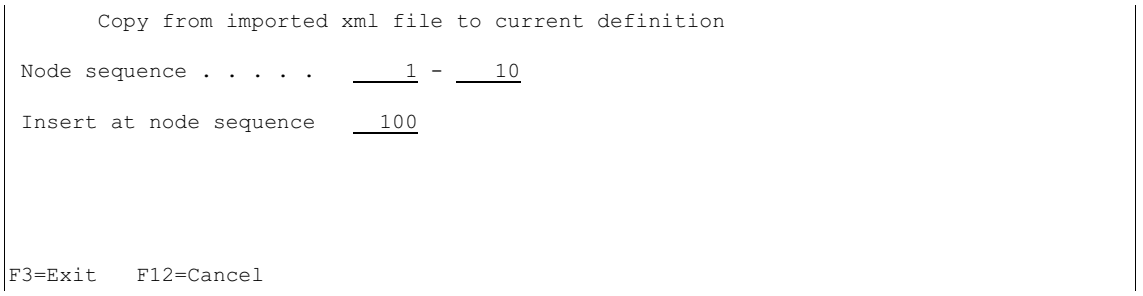
2=Import and append to current definition
This option imports the selected XML file, and copies/appends it to the current list of nodes. All contents is copied.

3. Display imported xml file

With this option you can view the original XML file, that you have previously imported. You can view the complete XML file structure, fields and contents.

4. Copy from imported xml file to current definition

Before you can use this option you need to have imported an XML file first. The import is done via option **2. Import xml file from stream file in /APF3812Home/work** as described above. You can check out the contents of the import XML file via option **3. Display imported xml file**. You specify the lines to copy and destination like so:



If the destination node sequence number already exists, then the node(s) are inserted just above this sequence number.

5. Resequence definition

With this option all line sequence numbers are changed, so that the interval is 10.

Using XPath for field/attribute values

The assignment of values to fields and attributes is generally described on page 284. However this does not describe the option to use Xpath to assign a value. If you select option 12=Field definitions for a node, then you can work with the fields/attributes in this node. If you here edit a field/attribute you will see this:

```
         Change field definition                                XML361D

XML definition name  . . :   AAAXML
Sequence number  . . . . :     10
XML path . . . . . . . . :   /Root
_____________________________________________________________________
Field sequence . . . . . .     10
Field  . . . . . . . . . .   Demo
Attribute  . . . . . . . .
Description  . . . . . . .

Page type(s) . . . . . .
Line type  . . . . . . . .
  Use relative line  . . .   _          Y=Yes, N=No
Line . . . . . . . . . . .   ___
From position  . . . . . .   ___
To position  . . . . . . .   ___
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   ______     F4=List
Compare value  . . . . . .   ____________________________________________
                                                                  More...
F3=Exit   F4=List   F12=Cancel   F13=Select spooled file
```

Press <Page Down> for this screen to appear:

```
         Change field definition                                XML361D

XML definition name  . . :   AAAXML
Sequence number  . . . . :     10
XML path . . . . . . . . :   /Root

Xpath expression . . . . .
100
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________
Decimal positions  . . . .  2

Functions  . . . . . . . .  _________  _________  _________




F3=Exit   F4=List   F10=Constant/xpath                          End
F12=Cancel   F13=Select spooled file
```

You can select between Constant and Xpath with the **F10**. In the example above a constant is defined and combined with the 'Decimal positions' option in the bottom. The result is, that the numeric value, 100 is inserted in the output XML file as '100.00', because:
a) We set the number of decimal positions to 2.
b) The decimal point is a dot in 'correct' XML format - independent of the local preferences ;-)

An Xpath expression can refer to the contents of the output XML file, but it can also refer to an internal field, which is not included in the final XML output.

If you create multiple Xpath expressions with references to other nodes, which may also use Xpath functions, then InterForm400 will automatically calculate the expressions in the correct order.

Xpath is e.g. described here:
http://www.w3schools.com/xsl/xpath_intro.asp

You can also find Xpath examples in the InterFormNG manual.

If you want to test various Xparth expressions you can use these sites:
http://www.freeformatter.com/xpath-tester.html

http://www.xpathtester.com/xpath

If you e.g. want to calculate the sum of the amounts in all detail lines in this XML file:

```
<?xml version="1.0" encoding="UTF-8"?>

<Root>
  <DetailLine SEQ="1">
    <Product>Interword400</Product>
    <Model>510</Model>
    <i-Group>i300</i-Group>
    <SN>44A2971</SN>
    <Amount>123</Amount>
  </DetailLine>
  <DetailLine SEQ="2">
    <Product>PDF security</Product>
    <Model>520</Model>
    <i-Group>i100</i-Group>
    <SN>44A9032</SN>
    <Amount>456</Amount>
  </DetailLine>
</Root>
```

Then you can use this Xpath expression:
sum(/Root/DetailLine/Amount)

Please note, that all Xpath functions must be written in lower case.

Definition of an internal field

An internal field must be defined in a namespace, which refers to http://www.interform400.com in the URI. The URI should just start with this, so e.g. http://www.interform400.com/internal is also a valid URI.The name of the namespace can be selected freely, but a suggestions could be ‘if’ or ‘internal’. With this in mind we add such a namespace in the root node of the output XML file like so:

```
        Copy field definition                                    XML361D

XML definition name  . . :   AXMLDEMO
Sequence number  . . . . :       1
XML path . . . . . . . . :   /root

Field sequence . . . . . .    1
Field  . . . . . . . . . .
Attribute  . . . . . . . .   xmlns:if
Description  . . . . . . .

Page type(s) . . . . . . .
Line type  . . . . . . . .
  Use relative line  . . .   _          Y=Yes, N=No
Line . . . . . . . . . . .   ___
From position  . . . . . .   ___
To position  . . . . . . .   ___
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   ______     F4=List
Compare value  . . . . . .
                                                              More...
F3=Exit   F4=List   F12=Cancel   F13=Select spooled file
```

Page Down shows this:

```
         Copy field definition                                   XML361D

 XML definition name  . . :   AXMLDEMO
 Sequence number  . . . . :       1
 XML path . . . . . . . . :   /root

 Constant . . . . . . . . .
 http://www.interform400.com
 _____________________________________________________________________
 _____________________________________________________________________
 _____________________________________________________________________
 _____________________________________________________________________
 _____________________________________________________________________
 _____________________________________________________________________
 _____________________________________


 Functions  . . . . . . . .


 F3=Exit   F4=List   F10=Constant/xpath                            End
 F12=Cancel   F13=Select spooled file
```

After we have defined a namespace, which refers to http://www.interform400.com, we can now create fields, that refers to this namespace in the syntax <namespace>:<field> like below:

```
        Copy field definition                                   XML361D

XML definition name  . . :   AXMLDEMO
Sequence number  . . . . :       1
XML path . . . . . . . . :   /root

Field sequence . . . . . .   ___1
Field  . . . . . . . . . .   ____________________________________________
Attribute  . . . . . . . .   if:demo______________________________________
Description  . . . . . . .   ____________________________________________

Page type(s) . . . . . . .   __________  __________  __________  __________
Line type  . . . . . . . .   __________
  Use relative line  . . .   _           Y=Yes, N=No
Line . . . . . . . . . . .   ___
From position  . . . . . .   ___
To position  . . . . . . .   ___
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   ______      F4=List
Compare value  . . . . . .   ____________________________________________
                                                                   More...
F3=Exit   F4=List   F12=Cancel   F13=Select spooled file
```

The value of the field can be set to data found in the input spooled file, an Xpath expression referring to field from either the XML and/or internal fields and constants.

When you refer to an internal field in an Xpath expression you can do it like so:

concat(/*:root/if:demo,'x')

In this Xpath expression we are adding an ‘x’ to the end of the internal field, demo with the Xpath command, concat.

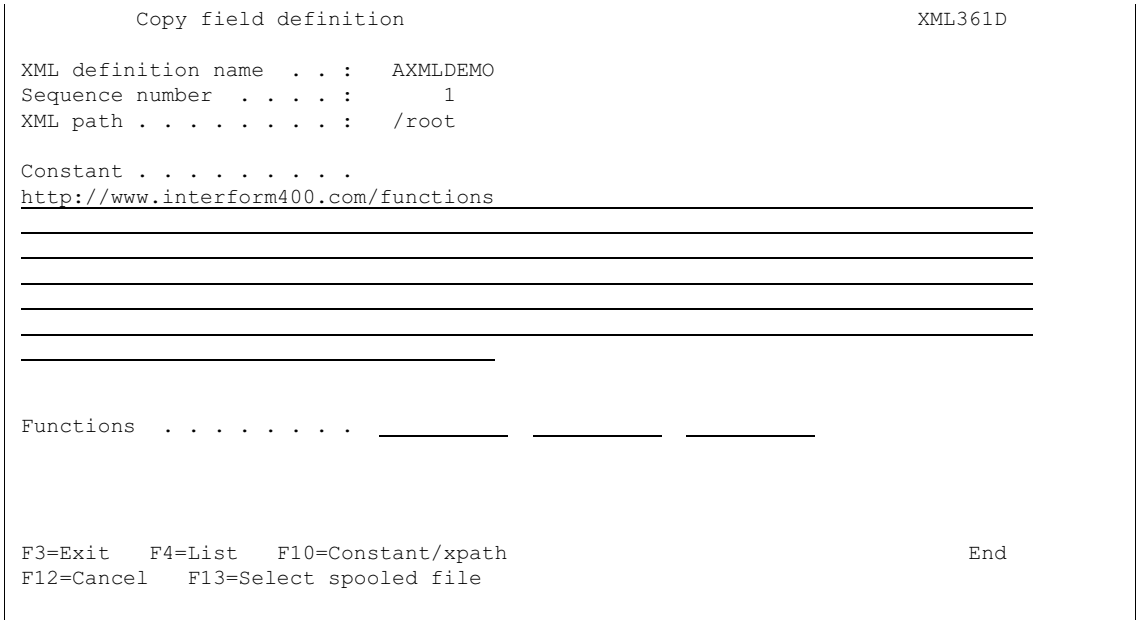
Enabling/use of internal XPath functions

InterForm400 comes with some extra, internal Xpath functions - apart from the many, normal Xpath functions. Before you can use these extra functions you need to add an extra namespace with the URI: http://www.interform400.com/functions.

The namespace should be added in the root node, and can be defined like this:

```
        Copy field definition                                   XML361D

XML definition name  . . :   AXMLDEMO
Sequence number  . . . . :       1
XML path . . . . . . . . :   /root

Field sequence . . . . . .   ___1
Field  . . . . . . . . . .   ____________________________________________
Attribute  . . . . . . . .   xmlns:fnc___________________________________
Description  . . . . . . .   ____________________________________________

Page type(s) . . . . . . .   __________  __________  __________  __________
Line type  . . . . . . . .   __________
  Use relative line  . . .   _           Y=Yes, N=No
Line . . . . . . . . . . .   ___
From position  . . . . . .   ___
To position  . . . . . . .   ___
Length . . . . . . . . . .   ___

Operator . . . . . . . . .   ______      F4=List
Compare value  . . . . . .   ____________________________________________
                                                                   More...
F3=Exit   F4=List   F12=Cancel   F13=Select spooled file
```

The screen shown with <Page Down> should be setup like this:



Above we define a namespace called fnc, but the name, fnc can be freely chosen. You just need to refer to the same namespace, when you want to use the internal functions.

These internal Xpath functions are available:

DateAddDays This function is able to add days to a specific date. The format is: DateAddDays(<Date>,<Days to add>), where the Date format is written as 'yyyy-mm-dd'.

Example:
fnc:DateAddDays(/default:Invoice/cbc:IssueDate , /default:Invoice/internal:PayDays)

NewLine This function inserts a new line in the XML output file.
Example:
concat(../internal:paytext1, '.', fnc:NewLine(), ../internal:paytext2)

Base64EncodeFileData

Converts a stream file into a Base64 data stream, which can be inserted in the XML file.

Example:
fnc:Base64EncodeFileData('/pcdata/temp/demo.pdf')

PropertiesFileGetByKey

This function can be used for getting a value by lookup in a properties file (a stream file) with a key. A properties file an be created with the command: APF3812/CRTPRPF. You can create the properties anywhere in the IFS and you need to state the full path. (The folders in the path must exist).

The properties file can be edited with e.g. Notepad or with the command: APF3812/WRKPRPFE e.g. like this:

```
APF3812/WRKPRPFE STMF('/apf3812home/xml/translation_de.xml')
```

In the command you use e.g. F6 to add new entries in the properties file.

This properties file can look like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE properties SYSTEM "http://java.sun.com/dtd/properties.dtd">
-<properties>
   <entry key="Invoice">Rechnung</entry>
   <entry key="Total_amount">Gesamtbetrag</entry>
   <entry key="VAT">Mehrwertsteuer</entry>
</properties>
```

You can retrieve a value from a property file with the command, RTVPRPFE in a program:

```
APF3812/RTVPRPFE   STMF('/apf3812home/xml/translation_de.xml')
                   KEY(Invoice) VALUE(&RETURNVAL)
```

The command above retrieves the value from the properties file, which corresponds to the 'Invoice' key, which in this example could be the german word for Invoice i.e. 'Rechnung'. The Xpath function below does the same:

Example:
fnc:PropertiesFileGetByKey('/apf3812home/xml/translation_de.xml' 'Invoice')

Please note, that the encoding of the stream file must be set as the attribute of the XML stream file is used for the lookup. You can display the encoding with this command:

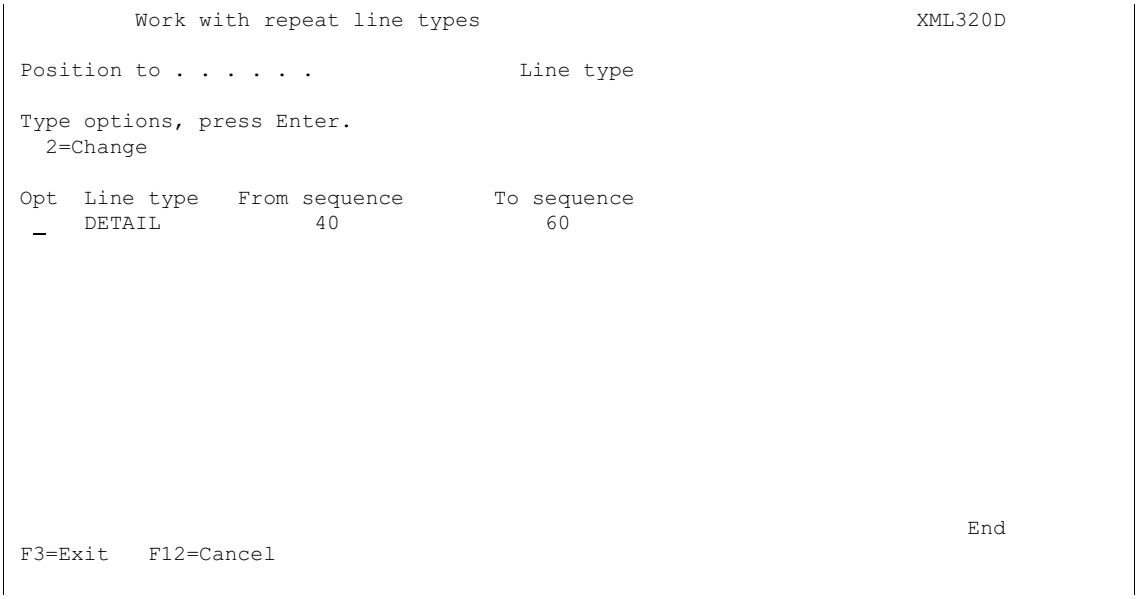
QSH CMD('attr /apf3812home/xml/translation_de.xml CCSID')

If the attribute does not fit the contents, then you can set it with either of these commands:
(In these examples the CCSID is set to 1208, which is the same as UTF-8).
CHGATR OBJ('/apf3812Home/xml/translation_de.xml') ATR(*CCSID) VALUE(1208)
QSH CMD('attr /apf3812Home/xml/translation_de.xml CCSID=1208')

Please note, that you need to precede the internal XPath commands with the namespace, that you defined yourself.

Line type repeats

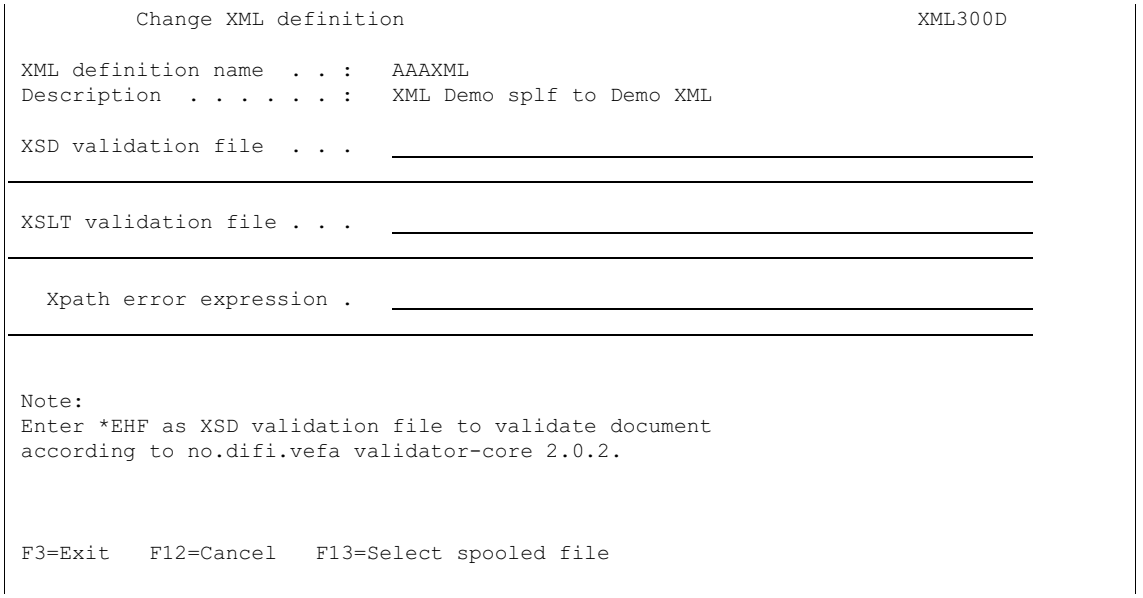
Some nodes/subtrees in the output XML file should be repeated for each detail line in the input spooled file. You define exactly which nodes/subtrees to repeat via this option:



All line types you have defined are shown in the screen above. For each of the line types, you can tell InterForm400 to repeat an interval of the sequence numbers shown in option **XML structure and data**. In the example above the sequence lines 40-60 are repeated for each DETAIL line. Line types are defined as shown on page **282**.

XML file validation

It is very important, that e.g. output invoice XML files are validated, so that you can be sure, that you have built a valid XML invoice. The validation is defined in this option:



Please note, that the *EHF option on the XSD field requires Java 7.

You can check the output file with the XSD file mentioned above. You should type the complete path and filename in the IFS here.

The XSLT file should also be stated as the full path in the IFS. The output file from the XSLT transformation is then used for the Xpath error expression, which should return a boolean (true if the validation is OK and false if the validation failed).

Tips for creating advanced XML+ files

When you build up an advanced XML file, there might be a few areas, where you might need some extra inspiration. Below a few extra tips are included.

- This is a good tip, but it cannot be guaranteed, that this will work in any future version of InterForm400: Debugging your XML+ definition is possible, if you first convert the input spooled file into the output XML file the command, APF3812/CVTSPLFXML (described on page 517). Then you can check the processing behind the scenes by checking out the contents of one of the InterForm400 work files: QTEMP/XMLLINWK. This file contains a record for every identified page type and line type and the triggered spooled file line is also included on the right like below:

```
                              Display Report
                                          Report width . . . . . :     445
Position to line  . . . . .             Shift to column  . . . . . .   26
Line    ....3....+....4....+....5....+....6....+....7....+....8....+....9....+..
        PAGTYP      LINTYP        OCCUR  RELLIN  SPLTXT
000001  FIRST_PAGE  DET_LINE          1       1         Interword400     510
000002  FIRST_PAGE  DET_LINE          2       1         PDF security     520
000003  FIRST_PAGE
000004  FIRST_PAGE                                     Herring Marine Research
000005  FIRST_PAGE                                     Seaweed Street 14
000006  FIRST_PAGE                                     9000 Battleaxe
000007  FIRST_PAGE                                     DK-Denmark
000008  FIRST_PAGE                                     ----------------------
000009  FIRST_PAGE                                     Att: Martin Merman
000010  FIRST_PAGE
000011  FIRST_PAGE                                     Re. Your new InterForm4
000012  FIRST_PAGE                                     -----------------------
000013  FIRST_PAGE                                     Congratulations with yo
000014  FIRST_PAGE                                     You are now able to ful
000015  FIRST_PAGE                                     InterForm400 with one o
000016  FIRST_PAGE                                     your customers and ease
```

- During processing of an input XML file (either via the CVTSPLFXML command or via the X-function in AFC) the job might stop with an error message: AFC5026 Error running finishing definition xxxxxx (R I). The reason can e.g. be an invalid Xpath expression, which is covered below:

  You will find more information in the joblog under the second level information for the message: Error calculating 1 xpath expression(s). The additional information will explain in details e.g.:

  Message . . . . : Error calculating 1 xpath expression(s).
  Error 'System function substring() cannot be called with one argument'
  calculating xpath expression 'substring(212123)'.

  So you need to go back to the definition and correct the errors before retrying the definition.

- In case of Xpath errors: The problem nodes in the output XML file are also marked to make it easier to find and solve the problems:

```
<?xml version="1.0" encoding="UTF-8"?>
<Root>
    <Test>
        <Field1>Herr+exit</Field1>
        <Field2>Seaw+exit</Field2>
        <Field3>9000+exit</Field3>
        <XpathError>@XPATH-EXPRESSION:  ,substring(212123)</XpathError>
    </Test>
</Root>
```

ZUGFeRD Example

One of the XML invoice formats is the german ZUGFeRD specification. This requires a valid XML file, that must be embedded in a PDF/A-3 file. So you need to build up a PDF/A-3b invoice file and combine it with an XML file created with the XML+ module. Creation of PDF/A files is described on page 457.

In order to build up a valid XML file it is recommended to first import a valid ZUGFeRD XML, and then change the contents by 'mapping' data from the spooled file into the file.
Remember to validate the resulting XML file.

On this site you can download sample files and a complete description of the ZUGFeRD standard:
http://www.ferd-net.de/front_content.php?idart=940

Validating a ZUGFeRD XML file

You can check if an XML file meets the requirement of the ZUGFeRD standard with a setup similar to this:

```
         Change XML definition                                    XML300D

XML definition name  . . :   ZUGFERD1
Description  . . . . . . :   Demo_ZUGFERD

XSD validation file  . . .   /APF3812Home/xml/xsd/ZUGFeRD1p0.xsd
_____________________________________________________________________

XSLT validation file . . .   /apf3812home/xml/schema/ZUGFeRD_1p0.xsl
_____________________________________________________________________

  Xpath error expression .   boolean(//*:text)
_____________________________________________________________________



Note:
Enter *EHF as XSD validation file to validate document
according to no.difi.vefa validator-core 2.0.2.



F3=Exit   F12=Cancel   F13=Select spooled file
```

It is your responsibility to find the needed files to validate according to the latest specifications. ZUGFeRD delivers normally an xsd file and an ISO schematron file for validation (e.g. ZUGFeRD_1p0.scmt). This file can be converted into an xsl file. The result of the transform via the xslt file is validated via an Xpath boolean expression. In this case the Xpath expression tests if there are any nodes named 'text' - if so the validation fails.

You can also do online validation of ZUGFeRD invoice PDF files on this site:

https://www.din-zugferd-validation.org

How to create a ZUGFeRD Invoice

If you use an email finish definition to create the output PDF file, then you can here refer to the ZUGFeRD definition in option **16. ZUGFeRD definition name** as mentioned on page 232.

You can also create a ZUGFeRD PDF invoice via the PDF file naming definition as mentioned on page 254.

You can also create a ZUGFeRD invoice with the APF3812/MRGSPLFPDF command:

The ZUGFeRD XML+ finishing definition is referred to in the ZUGFERDDEF field:

```
APF3812/MRGSPLFPDF KARTSET(FILESET) KLICHE(INVOICE) FILNVN(SPLFNAME)
JOB(JOBNBR/JOB_USER/JOBNAME) SPLNBR(SPLFNBR)
UNICODEOUT(*PDFA) ZUGFERDDEF(ZUGFERD)
TOSTMF('/apf3812home/work/ZUGFERD_INVOICE.PDF') REPLACE(*YES)
```

The MRGSPLFPDF command is described on page 449.

You can e.g. build the command into a program, based on the demo sources FUNKT_8 or FUNKT_8_2. Just remember to place the source and program object outside the APF3812 library. This program can then be called via function 8=Call program in Auto Forms Control.
Refer to page 166 for additional information of how to call such a program.

The XML+ Module: VANS Support

Apart from the ability to create advanced XML files, the XML+ Module also includes VANS (Value Added Network Service). VANS can be used for EDI.

Prerequisites

The following prerequisites must be met in order to use VANS with InterForm400:

- The related subsystem APF3812/INTERVANS must be started.
- An InterForm400 license code, which enables the XML+ module.
- Port 80 must be open for outgoing communication to CSC.
- Java 6 must be installed on the IBM i.
- A subscription with the VANS distributor (CSC).

Configure VANS

You use this command to configure VANS:

```
APF3812/CFGVNS TYPE(*CSC)
```

Currently only CSC is supported as the type for VANS in InterForm400.

With this command you will see this:

```
         Work with csc vans configurations                          CSC100D

Position to . . . . . .          Type

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   12=Work with CSC receivers

Opt  Type   ID               Description
__   CVR    0000026511682    Test InterForm A/S

                                                                          End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

You can add new VANS configurations with F6=Create and edit existing with 2=Change:

```
        Change csc vans configuration                              CSC110D

Type . . . . . :   CVR
ID . . . . . :   0000026511682

Description  . . . . . .   Test InterForm A/S
Polling interval . . . . .   60   30-600 seconds

User . . . . . .   mytestuser2
Password . . . . . .   mytestuser2_password

F3=Exit   F12=Cancel
```

The type and ID must be supplied by CSC. The type must be 'CVR' and the CVR number must be 13 digits with preceeding zeroes. The description is for your own use. The polling interval is the time interval between each connect to send/receive any pending file. The user/password is used when logging on to the external VANS account.

You can use option 12=Work with CSC receivers for a VAN configuration to configure the GLN/EAN numbers to receive files for:

```
         Work with csc receivers                                   CSC150D

Type  . . . . . :   CVR
ID  . . . . . :   0000026511682

Position to . . . . . .          Type

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Rename

Opt  Type   ID              Description
 _   EAN    0000000000093   Test for receive

                                                                    End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

The INTERVANS subsystem

In order to use VANS you need to start the APF3812/INTERVANS subsystem. It can be started with this command:

STRSBS SBSD(APF3812/INTERVANS)

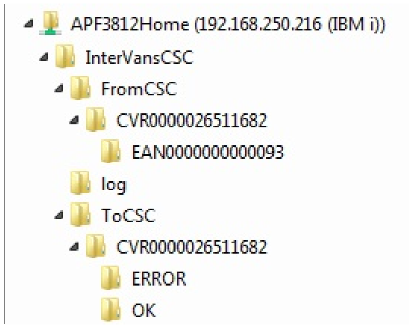
If you want to use VANS in production you need to make sure this subsystem is always running. One way to ensure that is to add these commands in the end of the startup IPL program (specified in the system value, QSTRUPPGM):

STRSBS SBSD(APF3812/INTERVANS)
MONMSG CPF0000

You need to take care, when you edit the IPL startup program. If you have any doubts, you should contact your local InterForm400 support.

Send/receive via VANS

This folder structure will be created in the IFS, when the INTERVANS subsystem has been started the first time:



Sending files
The files you want to send must be placed inside the ‘ToCSC’ folder, and inside the correct ‘yyyxxxxx’ subfolder. The subfolder is named <Type><ID> e.g. ‘CVR1234567890123', where ‘CVR’ is the type and ‘1234567890123' is the ID.

InterForm400 will check for new stream files in the ToSCS subfolders - if the INTERVANS subsystem is running. InterForm400 is checking for new files every 60 seconds. If the transmission went fine, the file is moved into the ‘OK’ subfolder. If the transmission did not succeed, then the file is moved into the ‘ERROR’ subfolder.

Receiving files
Received (stream) files will be placed inside the ‘FromCSC’ folder.

The VANS Log

A log of all transmitted/received files is available. You can view the log via the command: APF3812/WRKVNSLOG. You will see this, if you prompt the command with F4:

```
                        Work with Vans log (WRKVNSLOG)

Type choices, press Enter.

Type . . . . . . . . . . . . . TYPE > *CSC          Character value, *CSC
Combined ID  . . . . . . . . . CID    _________________________













                                                                        Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

You can prompt both the Type and the combined ID with F4 and select a valid value:

TYPE Currently the only supported type is *CSC.

CID This is the combined type and ID as specified in the VANS configuration on page 310.

The log looks like this:

```
         Work with vans log                                        VNS100D
                                                          CVR0000026511682
Position to . . . . . .   ______   DDMMYY
                          ______   HHMMSS

Type options, press Enter.
  5=Display   11=Open file

Opt  Date/time    U/D  File name                                  Status
 __   13:03        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:08        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:13        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:18        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:22        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:27        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:32        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:37        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:42        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:48        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:53        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
 __   13:58        D   e712bd12-5979-4ae2-8eb1-cc46c65814da.xml   *DUPLICATE
                                                                      End
F3=Exit   F5=Refresh   F11=View 2   F12=Cancel   F15=Subset
```

The U/D column indicates if the transfer was an upload (U) or download (D).

You can subset the list with F15 to e.g. only list entries with status *ERROR:

```
                       Subset list


Upload/Download . . . . .   _          U=Upload, D=Download

For ID  . . . . . .         ____________________
Status  . . . . . .         *ERROR     *OK, *ERROR, *NEW,
                                        *DUPLICATE
File name . . . . . .       ____________________________________


F3=Exit   F4=List   F12=Cancel
```

Sort Definitions

This function is used if pages in a spool entry for the same receiver ID are not consecutive, and there is a demand for them to be sorted this way.

The function should be used prior to an overlay merge or a prinserter or PFE MailPrinter pre-process.

Enter Menu point **5. Sort Definitions** on the menu **5. Work With Auto Forms Control**. The following screen will appear:

```
         Work with Sort Definitions                                SOR300D

Start with . . . . .     __________

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt    Name         Description
(No Sort definitions - F6 to create)

                                                                        End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

Press **F6** to create a new sorter definition.

One sorter definition is specific for one type of print job, and can be referred to by any number of queues defined in AutoFormsControl.

```
         Update Sort Definition                                    SOR310D

Definition name  . . . . :   PETER

Description  . . . . . . .   Sort IF400DEMO


Insert separator page before
start of new group . . . .   *YES     *NO, *YES

Insert separator page if
break in sort field no . .   1_       1-6









F3=Exit                                                 F12=Cancel
```

Definition name: This name will be referred to by the AFC function **D=Sort Spooled File** (hidden).

Insert Pages before start of new group:

Stating *YES will produce an extra page in the sorted spool entry with the text SEPARATOR PAGE inserted between each sorted group within the resulting spool entry. The page will include the character string which met the sort criteria.

Insert separator page if break in sort field no.:

This option defines the detail level for insertion of the separator page, e.g. stating 3 will insert a separator page if one or more characters changes within any of the intervals defined in sort field number 1 to 3. The separator page will additionally list the contents of each sort field.

Pressing **Enter** will bring up the following screen:

```
             Work with Sort Definition Details                    SOR320D

Definition name  . . . . :   PETER

Start with . . . . .     ____

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt      Seqnbr.    Description
(No sort definition details - F6 to create)









                                                                       End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

Press **F6** to create a new definition.

More definitions can be created but is only relevant if the **Page Selection criteria** is used.

```
         Create Sort Definition Details                          SOR330D

Definition name  . . . . :   DEMO

Sequence number  . . . . .   __1
Description  . . . . . . .   Sort_by_Customer_ID__________

Page selection criteria

                 Print line   Position   Oper  Compare value
                    ___       ___ - ___  ____  ________________________________
                    ___       ___ - ___  ____  ________________________________
                    ___       ___ - ___  ____  ________________________________

Find sort fields in the following positions
                 Sort field no.   Print line   Position   Ascending/Descending
                       1             ___       ___ - ___          _    (A D)
                       2             ___       ___ - ___          _    (A D)
                       3             ___       ___ - ___          _    (A D)
                       4             ___       ___ - ___          _    (A D)
                       5             ___       ___ - ___          _    (A D)
                       6             ___       ___ - ___          _    (A D)
F3=Exit          F12=Cancel      F13=Select spooled file    F18=DSPSPLF
```

The functionality of F13 and F18 is described for the split defintion, which is found on page 199.

Page Selection criteria

The page selection criteria should only be used if the same spool entry contains more than one page layout.

This could be the case if a spool entry contains invoices and credit notes, and the customer ID, intended for use as sort field, is placed in different line/column positions on the invoices than on the credit notes. In this case you should create two **Sort Definition Details**, where one compare with the text INVOICE and the other with CREDIT NOTE, and each has its own specification for the customer ID sort field.

If some of the invoices consisted of several pages of which only the first page indicate INVOICE, the successive pages will automatically follow the first page of the invoice. That means pages which are not recognized by any Page Selection criteria will in the final sort automatically succeed the last recognized page.

Print Line: The print line in the spool entry to search.

Position: The column interval to search

Oper. The boolean operator relating to the compare value.
The operators used are standard operators known from e.g. Query/400:

EQ Equal to compare value
NE Not equal to compare value
LT Less than compare value
LE Less than or equal to compare value
GT Greater than compare value
GE Greater than or equal to compare value

Compare value: The character string or numeric value which the operator should compare with. The comparison is in reality done on hexadecimal values. This means that e.g. the figure 1 which has EBCDIC value F1h is greater than the character Z which has EBCDIC value E9h.

Find sort fields in the following positions

The Sort fields indicate the detail level of the sort process. Pages will be sorted in the same order as the sort fields. Sort field no.1 is the most significant for the sort.

Print Line: The print line in the spool entry to search.

Position: The column interval to search.

Ascending/ decending: Select the way you want to order this sorting field. If you leave it blank it will default to ascending.

Examples Using Sort

The following makes use of the demo spool entry delivered with InterForm400®. You can print this from the menu **12. Service Functions**.

On all pages the Customer ID is always four digits found in line **13** position **57 - 60**:

```
                           Display Spooled File
File  . . . . . :   QPRINT                          Page/Line   1/3
Control . . . . .                                   Columns     1 - 78
Find  . . . . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
                                                                          1
       Herring Marine Research
       Seaweed Street 14
       9000 Battleaxe
       DK-Denmark
       ---------------------
       Att: Martin Merman
                                                    1004/PDC.20-02-2008
       Re. Your new InterForm400 modules.
       ---------------------------------
       Congratulations with your new InterForm400 module(s).
       You are now able to fully exploit the benifits of combining
       InterForm400 with one or more of the powerful modules to impress
       your customers and ease the workflow in your organisation.
       The following license code(s) will be needed to activate the
       module(s) permanently to your System(s):
                                                                      More...
F3=Exit   F12=Cancel   F19=Left   F20=Right   F24=More keys
```

The distinction between Document Management and Modules letters is the text “Document” or “modules.” which can be located on each page in line **15** position **34 - 41**.

Note that we must compare the same number of characters, which is the reason why we check for “modules.” (Including the “.”) in order to match the length of the word “Document”.

```
                           Display Spooled File
File  . . . . . :   QPRINT                          Page/Line   3/15
Control . . . . .   +1                              Columns     1 - 78
Find  . . . . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Re. Your new InterForm400 Document Management System.
       ----------------------------------------------------
       Congratulations with your new InterForm400 software.
       InterForm400 will enable you to print Electronic Forms and perform
       advanced data remapping and copy management of your existing SCS
       print data. InterForm 400 exploits the advanced features of
       standard HP-PCL printers and is the chosen document management
       solution for over 2000 installations.
       The following license code(s) will be needed to activate
       InterForm400 permanently to your system(s):
       Product          Model   i-Group     Serial No.     License Code
       ------------------------------------------------------------------
       InterForm400     515       i050       4449079       F2 E7 20 AA
       InterForm400     810       i100       44B2031       AA BB 01 23
       InterForm400     890       i600       44D3971       1A BC DE 44
       InterForm400     520       i100       44A1460       79 10 22 F1
                                                                      More...
F3=Exit   F12=Cancel   F19=Left   F20=Right   F24=More keys
```

Example 1. Sort by Type, “Document" letters first:

A sort definition could monitor the field with the text “Document” or “modules.”. The spool entry would then be sorted with all the **Document** letters first followed by the **modules** letters. **Document** letters will appear before **modules** letters in the resulting printout, as the sort is done alphabetically on the contents of the sort fields - with ascending (A) sort sequence..

```
Find sort fields in the following positions
  Sort field no.  Print line   Position   Ascending/Descending
        1            _15      _34 - _41         A
        2             ___      ___ - ___         _
```

Example 2. Sort by Type, “modules.” letters first:

To reverse the sequence of the letters compared to above we can just state the sequence to be Descending:

```
Find sort fields in the following positions
  Sort field no.  Print line   Position   Ascending/Descending
        1            _15      _34 - _41         D
        2             ___      ___ - ___         _
```

Example 3. Sort by Type and Customer ID:

To increase the detail level of the search we could have the groups of Document and modules letters sorted according to Customer ID. This would also be necessary if some of the letters consisted of more than 1 page, where page 2 and succeeding pages only indicate the customer ID, but not “Document” or “modules.”.
We add an extra sort definition, where we search for the customer ID:

```
Find sort fields in the following positions
  Sort field no.  Print line   Position   Ascending/Descending
        1             _15      _34 - _41         A
        2             _13      _57 - _60         A
```

Example 4. Sort by Customer ID and type:

Another approach could be to sort by customer ID’s first and then by the type being “Document” or “modules.”. This is achieved by reversing the order of the sort fields from the previous example:

```
Find sort fields in the following positions
  Sort field no.  Print line   Position   Ascending/Descending
        1             _13      _57 - _60         A
        2             _15      _34 - _41         A
```

In an AFC definition we can activate the sort definition **SORTDEMO**, by using function **B**:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT2     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData




(No functions defined)



Seqnbr Function
  1,0    D        Sort Spooled File

                            Sort definition name . . . . . .  SORTDEMO__
                            Outque for sorted print  . . . .  *INPUT____
                              Library  . . . . . . . . . . .   __________
                            Form type  . . . . . . . . . . .  SORTDONE__
```

```
F3=Exit                                                    F12=Cancel
```

This will cause the demo spool entry to have pages sorted into another SCS spool entry with form type **SORTDONE** is created and placed after the original spool entry in the same queue.

We can now merge the new spool entry with an overlay conditioned by the Form Type **SORTDONE** or by using an Overlay Selector:

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT2     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  D  DEMO
          Sort, def: SORTDEMO outq *DEFAULT &form type: SORTDONE




Seqnbr Function   Attributtes of input file for which to execute the function
  2,0    1        Form type  . . . . . . . . . . . . . . . SORTDONE__
                  Save attribute . . . . . . . . . . . . . _
                  Jobname  . . . . . . . . . . . . . . . . __________
                  Spooled file name  . . . . . . . . . . . __________
                  Device file  . . . . . . . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .    __________
                  Program that opened file . . . . . . . . __________
                    Library  . . . . . . . . . . . . . .    __________
                  User-specified data  . . . . . . . . . . __________
F3=Exit           F13=Fold/Unfold                            F12=Cancel
```

```
         Update AFC-functions attached to output queues              AFC305D

Queue:   AFC_INPUT2     Library:   APF3812

Seqnbr F. Formtyp  Save Jobname    Filename   Device file  Program  UserData
 0001  D  DEMO
          Sort, def: SORTDEMO outq *DEFAULT &form type: SORTDONE




Seqnbr Function
  2,0    1        Merge with overlay

                  Output queue for merged print  .  *DEFAULT__
                    Library  . . . . . . . . . . .    __________
                  Printer type . . . . . . . . . .  __________
                  Unicode output . . . . . . . . .  *INPUT        *INPUT, *YES
                  Merge overprint lines  . . . . .  *NO           *NO, *YES
                  Find overlay in form type table   _      (Y N)


F3=Exit           F13=Fold/Unfold                            F12=Cancel
```

The Sorted spool entry from example 4, including a definition of insertion of a separator page if break in sort field number 2 would look like this:

```
                              DISPLAY SPOOL FILE
File  . . . . . :   QPRINT                              Page/Line 1/1
Function  . . . .                                       Columns   1 - 78
Search for  . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7...
** SEPERATOR PAGE **
1001
modules.
      Florence Flowers
      Tulip Road 16
      4000 Marigold
      DK-Denmark
      ---------------------
      Att: Susan Sunflower
                                                        1001/PDC.20-02-2008
      Re. Your new InterForm400 modules.
      ----------------------------------
      Congratulations with your new InterForm400 module(s).
      You are now able to fully exploit the benifits of combining
      InterForm400 with one or more of the powerful modules to impress
      your customers and ease the workflow in your organisation.
F3=Exit     F12=Cancel     F19=Left     F20=Right     F24=More keys
```

☺ TIP ☺

You can use the sort selection criteria that is included on the separator page (in this example 1001 or InterForm400®) to have an overlay selector pick an overlay that prints the separator page to be with a special overlay or from another drawer, e.g. with coloured paper.

PDF File Bookmarks

From the InterForm400 main menu select **5. Work with Auto Forms Control** followed by **6. PDF bookmark definitions.** Here you can define how bookmarks should be inserted when you create a PDF file in InterForm400.

Note, that alternatively you can also include &&BMK commands in the *SCS spooled file you merge with to insert bookmarks. Refer to page 502 for more information.

NOTE

In order to get PDF output you need to purchase the PDF module or the classic package for InterForm400.

You can then later refer to a bookmark definition when you create a PDF file in InterForm400.

When you create a new bookmark definition you are presented with this screen:

```
          Create PDF Bookmark definition                              BMK310D

Bookmark definition name .   FIN_REPORT_

Description  . . . . . .   Bookmarks_for_financial_report___________

Display bookmarks at open.   1        0=No  1=Yes
```

Here you state a name for the bookmark definition, a description and select if the bookmarks should be displayed when the PDF file is opened or not.

When you press Enter/F3/F12 you will see this screen:

```
          Work with PDF Bookmark details                              BMK320D

Bookmark definition . :   BOOKMRK1

Position to . . . . . .   ____  Sequence number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Rename

Opt     Seqnbr.   Description
 _      000       All pages









                                                                          End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Here you can define one or more rules for when and how bookmarks should be inserted. Press F6 to add a new one:

```
         Create PDF Bookmark details                                BMK330D

Sequence number  . . . . .   000

Description  . . . . . .   ____

Type option, Press Enter.
1=Select

Opt    Definition
 _     Page selection
 _     Initial open level
 _     Level-1
 _     Level-2
 _     Level-3
 _     Level-4
 _     Level-5
 _     Level-6



F3=Exit   F12=Cancel
```

Page selection: If you want to use more than one rule (or sequence) for the bookmarks in one spooled file, you need to restrict the sequence to some of the pages only by specifying rules in 'Page selection'. Otherwise skip this part. Refer to page **315** for details.

Initial open level: You can decide if the nested bookmarks should be expanded (and to what level) or not when opening the PDF file. If you use '0' or blank for this, then all levels are expanded. Any other value will expand all levels down to the specified number.

Level 1-6: Select one of these to specify the bookmarks at a certain level:

```
         Change PDF Bookmark details                                BMK330D

Sequence number  . . . . :   000

Description  . . . . . .   All pages


Level-2

    Field    Prefix            Print line   Position
     1       Zip:___________       __8       __8 - _11
     2       City:__________       __8       _13 - _40


    Color                      __5      F4=List







F3=Exit   F12=Cancel
```

Above we have defined the second level. The fields 1 and 2 will be concatenated to make the full text of the bookmark. So you can insert fixed text (prefix) followed by text from the spooled file page to define each field. You can use any colour for the bookmark. Define your own colours if necessary by use of option '7. Work with palette colors' from the InterForm400 administration menu. Refer to page **416** for more information of how to do that.

The information used from the spooled file will be inspected by the bookmark generator. Only when this information changes a new bookmark will be generated.

NOTE

Text for bookmarks must be placed in a fixed position on the page. If you want to search for a certain text and insert bookmarks if found you could consider to use the APF3812/CRTPBSPLF command to do copy the floating information into a fixed spot of a new *SCS spooled file before merging. This could be called from an AFC user exit program.

Getting familiar with PDF Bookmarks

In order to demonstrate how to insert PDF bookmarks we will go through the process necessary to insert these bookmarks when creating a PDF file based on the InterForm400 demo spooled file:

The idea is, that the first level contains information of the customer number. Each customer could have subsidaries in different cities, so level 2 refers to each zipcode and city. Level 3 finally points out each contact person for each subsidary. Refer to page 433 for information of the demo spooled file and how to create it.

From the InterForm400 main menu select **5. Work with Auto Forms Control** and **6. PDF bookmark definitions** followed by **F6=Create** to start creating a new PDF bookmark definition:

```
          Create PDF Bookmark definition                              BMK310D

Bookmark definition name .   DEMOSPOOL_

Description  . . . . . .   Bookmarks for the Demo Spooled File

Display bookmarks at open.   1        0=No  1=Yes
```

Above we have stated a name and description for the definition and decided, that the bookmarks should be visible when opening the PDF file later. Press Enter to proceed. Here you will see a list of bookmark detail lines, that is empty. Press F6=Create to create a new sequence line:

```
         Create PDF Bookmark details                                BMK330D

Sequence number  . . . . .   000

Description  . . . . . .   All_pages_____________________________

Type option, Press Enter.
1=Select

Opt    Definition
 _     Page selection
 _     Initial open level
 _     Level-1
 _     Level-2
 _     Level-3
 _     Level-4
 _     Level-5
 _     Level-6



F3=Exit   F12=Cancel
```

Through **Page selection** we could have inserted conditions so we could handle bookmark differently for some of the pages, but as this spooled file is the same for all pages, this will not be used here.

Initial open level tells to what degree the bookmarks should be expanded. Here we use '**1**' as we want this display when we open the PDF file:

The definitions for the individual levels are shown below:

```
Level-1

    Field    Prefix            Print line   Position
     1       Cust._No._______     _13       _57 - _60
     2       ________________     ___       ___ - ___


    Color                      _3      F4=List
```

```
Level-2

    Field    Prefix            Print line   Position
     1       Zip_____________     __8       __8 -  11
     2       City____________     __8       _13 -  40


    Color                      _5      F4=List
```

```
Level-3

    Field    Prefix            Print line   Position
     1       _______________      _11       __8 - _35
     2       _______________      ___       ___ - ___


    Color                      _8      F4=List
```

When done defining the levels you just press Enter several times and the bookmark definition has been saved.

As the final thing we want to use the PDF Bookmark definition. You can do it in this manner:

- Create the demo spooled file as described on page **433**.
- With the same interactive job you go to a command line and type the command:

```
APF3812/MRGSPLFPDF KARTSET(SAMPLE) KLICHE(IF400DEMO) FILNVN(QPRINT)
SPLNBR(*LAST) BMKDEF(DEMOSPOOL) OUTTYPE(*VIEW)
```

This will create a pdf file with the same name as your user ID in the /APF3812Home/VIEW directory. If you have access to this directory from your PC and you have associated .PDF with Acrobat Reader it will show you the result automatically.

Go through the setup described in **Appendix L** if Acrobat Reader does not start or does not show the PDF file.

7. User Output Queue

This feature offers the possibility to move any spooled file to a user dependent output queue. It can be reached from the InterForm400 Main Menu by first selecting **5. Work with Auto Forms Control** and then **7. User output queue**.

```
         Work with user output queues                                AFC315D

Position to . . . . . . _____________    User profile

Type options, press Enter.
  2=Change   3=Copy   4=Delete

Opt   User profile       Output queue       Library        Printer type
 _    KSE                HP5SI              QUSRSYS        HP4D
 _    HVE                PRT01              QUSRSYS        HP4500
 _    SR                 IMA7000            QUSRSYS        HP4

                                                                      End
F3=Exit    F5=Refresh    F6=Create    F12=Cancel
```

Here you state a preferred output queue and the printer type used for merges for each user profile. You distribute spooled files depending on the spooled file owner by use of **1=Merge with Overlay** or **5 = Move Spooled File** line in AFC.
Refer to page 158 and 164 for details.

If the spooled file owner is not included in the list above, then the two Auto Forms Control options will react differently:

1=Merge with overlay

If the user profile is not found, the AFC job will use the default output queue of the job and that is also blank it will halt with a message (MSGW) informing you, that the spooled file owner is not in this list. You can then add the user and answer R-Retry or ignore the merge element with I-Ignore.

5=Move spooled file

If the spooled file owner is not found, then the move element will be ignored and the spooled file will remain on the same output queue.

General Description of OSC (Output Schedule Control)

Output Schedule Control (OSC) is a sub-system in InterForm400® which main purpose is to optimize the daily mail procedures in an organisation and thereby reduce the postage costs significantly. The key element with this function is that rather then sending 10 envelopes to the same customer, all documents should be sent together.

OSC will handle multiple spool files, independently of document type and produce a new single spool file in *SCS format, sorted e.g. according to the recipient name.

OSC jobs works differently than Auto Forms Control jobs. OSC jobs are not running at all times. OSC jobs wake up at specific times of the week and will merge all spool files waiting at a specific output queue into one large SCS spool file. This new spool file can be sorted and distributed and then merged using Auto Forms Control. When all waiting spool files have been handled, the OSC job goes into 'sleep mode' again, and awaits the next 'wake up call'.

Output Schedule Control can help you print out in these situations:

1. You have large spool files to print. It is not necessary to print them out immediately after they are created. You want to (automatically) print them out during the night, when the printers are idle.

2. You are going to print out very large spool files and you want to automatically distribute the workload on several printers.

3. You have 2 or more spool files, that are to be distributed to the same customers. For easy and low cost distribution, you want to merge all the spool files to one and sort it, so pages for the same customer are collected and printed together.

4. You have the situation as described in example **3**, but the customer information is placed on differently on the page depending on the type of spool file.

5. You want to use the solution described in example **3**, but you are sending out letters to customers, and these letters have only customer information on the first page for each customer.

6. The command, STROSCJOB (Start OSC Job) is able to select only specific spooled files, that are merged in this way. The filter can use the spooled file attributes: Job name, user profile, job number and user data. This can be used for e.g. for selecting spooled files for a specific insurance policy or other documents that are build up of smaller spooled files.

The setup of the primary functions of Output Schedule Control is managed by selecting menu option 6. from the main menu. The same menu can be entered directly by the program call:

```
CALL APF3812/OSCADM
```

The menu appears like this:

```
InterForm 400  -  Output Schedule Control          System.......: INTER02
                                                   Workstn ID...: IF400_PDC2
Select one of the following options:               User ID......: POULD

 1. Functions attached to Output Queues




10. Start OSCCTL subsystem / server
11. End OSCCTL subsystem and server
12. Work with OSCCTL subsystem




Option: __



F3=Exit                    F6=Display messages            F12=Cancel
```

Notice, that as default the name for the related subsystem is OSCCTL and placed in the APF3812 library. This can be changed in the configuration option. If you change the subsystem name and/or the library, the commands below should of course reflect this change.

10. Start OSCCTL subsystem

Output Schedule Control is running as an ordinary System i sub-system, and therefore has to be started as such. It is a good idea to let the sub-system start automatically at IPL. This is done by inserting the following command in your startup program:

```
STRSBS SBSD(APF3812/OSCCTL) MONMSG CPF0000
```

Of course, you can always start the sub-system manually, by the command:

```
STRSBS APF3812/OSCCTL
```

11. End OSCCTL subsystem

Before making upgrades the OSCCTL subsystem should be ended.

This can be done in the menu or by the command:

```
ENDSBS SBS(OSCCTL) OPTION(*IMMED)
```

12. Work with Active Subsystem OSCCTL

This menu item is a shortcut to the command:

```
WRKACTJOB SBS(OSCCTL)
```

If the subsystem is started, it will look like this:

```
Opt   Subsystem/Job  User        Type  CPU %  Function        Status
      OSCCTL         QSYS        SBS      .0                  DEQW
        OSCSERVER    AFCOPER     ASJ      .0  PGM-OSC500C     MSGW
```

Note that the status MSGW (message waiting) is normal, and does not indicate an error (as it usually does).

Describing the OSC definition lines

If you from the InterForm400® main menu choose **6. Work with Output Schedule Control** and then **1. Functions attached to Output Queues**, then the screen below is shown:

```
         Work with OSC definitions                                  OSC100D

Position to . . . . . .   __________   Output queue

Type options, press Enter.
  1=Run OSC   2=Change   3=Copy   4=Delete   5=Display   6=Print definition
  12=Work with output queue   15=Hold output queue   16=Release output queue


Opt   Output que  Library     Description                              Sts
 __   AFC_INPUT2  APF3812     Merge several spoolfiles to one          RLS
 __   BATCH       QUSRSYS     Batch printing.                          RLS









                                                                        End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

Press **F6** to add a new OSC definition, enter the output queue to be monitored by OSC, a description of the job and press **Enter**.

Now this screen is presented:

```
         Create OSC definition                                      OSC300D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . . :     APF3812

Type options, press Enter.
  1=Select

Opt    Definition
 _     Specify input spooled file priority
 _     Specify placement of input spool file attributes at output
 _     Define sort fields
 _     Specify grouping and separator page
 _   R Define resulting output queues
 _     Specify automatic start scheduling
 _     Specify automatic start options
 _   R Specify output queue for processed spooled files
 _     Specify job priority




F3=Exit   F12=Cancel
```

The ‘R’ (required) indicates the lines, which must be filled out before this OSC definition can be used.

The various definition lines does the following:

Specify input spooled file priority:

This definition line is only used for defining what spool file attributes to sort on, if no sorting fields are selected. Normally it is not necessary to fill this out.

Specify placement of input spool file attributes at output:

If you decide to sort on the spool file attributes in combination with text of each spool page (e.g. customer number), you can do this using this function. This places the attributes on each page.

Define sort fields:

Here you state where to find the sorting keys (e.g. customer number) on each page. You also refer to positions, where the attributes have been inserted. If all spool files have the sorting fields in the same positions, you only need one sequence line. If the placement of the sorting fields varies, it is necessary to have more sequence lines and to use the page selection criteria. For a description of the page selection criteria see page 315.

Specify grouping and separator page:

Here you decide how many sorting fields, that should change in order for creating a new group. You can also specify to insert a separator page, when changing groups.

A group is dealt with as an undividable number of pages. If you choose to distribute the workload on several output queues a group will not be broken up.

Define resulting output queues:

Specifies on which output queue(s) to place the resulting SCS spool file including all the pages. You can decide, that OSC should balance the workload between several output queues. Using the workload factor. Note that groups defined above are kept together.

Specify automatic start scheduling:

Specifies weekdays and times, when the OSC job is to autostart and process all waiting spool files.

Specify automatic start options:

Specify whether or not to send a message when starting or/and when finished. It is also possible to decide to start or not to start the OSC job, if it could not be started at the scheduled time (e.g. because of an IPL).

If you e.g. select this:

```
        Specify automatic start options                          OSC300D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . :     APF3812

Type choices, press Enter.

Send message . . . . . .   1             1=Do not send message
                                         2=Before processing output queue
                                         3=After processing output queue
                                         4=Both before and after

Delayed auto start                       1=Start job
option . . . . . .   2                   2=Send inquiry message
                                         3=Skip delayed jobs

Message queue  . . . . . .   QSYSOPR
  Library  . . . . . .      QSYS

Delayed auto start can occur if Output Schedule Control (OSC)
- or the entire system - is ended and later restarted.

F3=Exit   F12=Cancel
```

Then you will get an inquiry message on message queue QSYSOPR the next time the OSCCTL subsystem is started - if the OSC job was scheduled to be run (via option **Specify automatic start scheduling**) at a time when the OSCCTL subsystem was down. In such cases you will see this message on the specified message queue when the subsystem is started later:

```
                      Additional Message Information

Message ID . . . . . :   OSC1001       Severity . . . . . :   00
Message type . . . . . :   Inquiry
Date sent  . . . . . :   27/09/07      Time sent  . . . . . :   10:41:25

Message . . . . :   Start time for OSC job APF3812/AFC_INPUT1 exceeded (C G)









                                                                      Bottom
Type reply below, then press Enter.
Reply  . . . .  ____________________________________________________________

F3=Exit   F6=Print   F9=Display message details   F12=Cancel
F21=Select assistance level
```

If you answer '**C**' (Cancel) the OSC job will not run now. Answer '**G**' (Go) to start the OSC job now.

Specify output queue for processed spooled files:

Specify an output queue for placing the incoming spool files or specify *DELETE for deleting them, when processed by OSC.

Specify job priority:

Specify the priority of the OSC job.

Principle of OSC (Output Schedule Control)

In short OSC merges all spool files into one and sorts the pages by spool file attributes and/or text on each spool page. This merge can be done at certain times of the week, and it can also be initiated by choosing option **1=Run OSC** from the OSC menu.

The merged SCS spool file can be distributed to one or more output queues, using a workload factor. These output queues should be monitored by Auto Forms Control and then merged. For this merge an overlay selector is recommended.

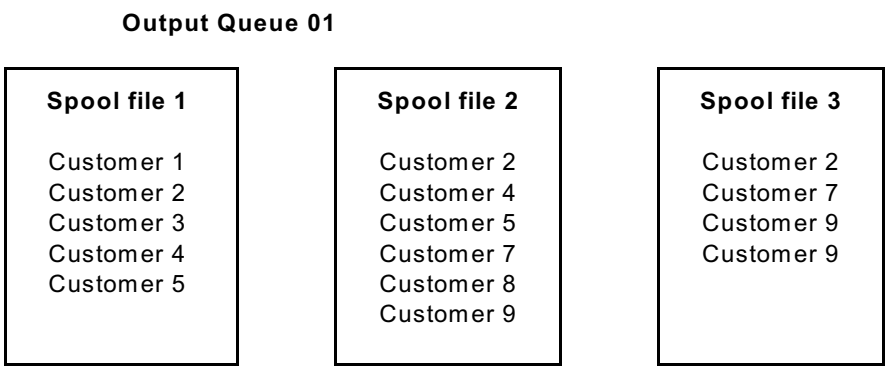
The incoming spool files can after the merge be either deleted or moved to another output queue.

In the following example, the output queue controlled by OSC, has 3 spool files.

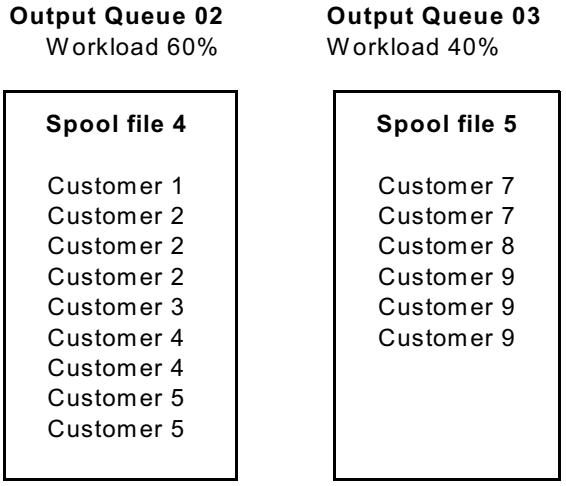
In output queue 01, **Spool file 1** has 5 pages (first page is for customer 1, next for customer 2 etc), the second spool file (**spool file 2**) has 6 pages and **spool file 3** has 4 pages.

We have defined that the resulting print job(1 spool file) should be shared by 2 printers, with a workload factor of 40% for output queue 02 and 60% for output queue 03. As we have 15 spool pages in total to process, the resulting two spool files 4 and 5 will be as per below:

Contents of a Output Queue being monitored by OSC:



Contents in the OSC defined Resulting Output Queues:



The resulting two spool files are now ready to be used as Input for Auto Forms Control.

Getting Familiar with OSC (Output Schedule Control)

When selecting option **1. Functions Attached to Output Queues** in the menu **6. Work with Output Schedule Control** on the main menu we get the screen below:

```
         Work with OSC definitions                                  OSC100D

Position to . . . . . .               Output queue

Type options, press Enter.
  1=Run OSC   2=Change   3=Copy   4=Delete   5=Display   6=Print definition
  12=Work with output queue   15=Hold output queue   16=Release output queue


Opt   Output que  Library     Description                               Sts
_2    OSC_OUTQ01  APF3812     Output Schedule Control DEMO definition   RLS









                                                                        End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

Press **F6** to create a new OSC definition. When created press **F5** to have it updated in the above screen.

```
         Create OSC definition                                      OSC110D

Output queue . . . . . .  OSC_OUTQ01

  Library  . . . . . .    APF3812___

Description  . . . . . .  Output Shedule Control DEMO definition
```

To update and change an OSC definition enter 2 in front of the OSC output queue. The following OSC definitions will appear. Enter 1 in front of the OSC entries you wish to change.

```
         Change OSC definition                                      OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . :     APF3812

Type options, press Enter.
  1=Select

Opt    Definition
 1   > Specify input spooled file priority
 _   > Specify placement of input spool file attributes at output
 _   > Define sort fields
 _   > Specify grouping and separator page
 _   > Define resulting output queues
 _   > Specify automatic start scheduling
 _   > Specify automatic start options
 _   > Specify output queue for processed spooled files
 _   > Specify job priority


F3=Exit   F12=Cancel
```

Specify input spooled file priority:

```
         Specify input spooled file priority                          OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Type choices, press Enter.

                           Sorting-
Input spooled file         priority
Form type  . . . . . .       _10
Job name . . . . . . .       ___
Job number . . . . . .       ___
Spooled file . . . . .       ___
Spool file no. . . . .       _20
Device file  . . . . .       ___
  Library  . . . . . .       ___
Program that opened file .   ___
  Library  . . . . . .       ___

This sort sequence will be used for pages (defined at "Define sort fields")
having identical sort values. Lowest number have highest priority.

F3=Exit   F12=Cancel
```

In the above entry screen we define which sort values should be used and what priority they have. Above we have selected that the FORM TYPE of the document, have highest sort priority and following the SPOOL FILE NO. should be used.

Specify placement of input spool file attributes at output:

```
         Specify placement of input spool file attributes at output   OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Type choices, press Enter.

                           - Insert into --
Input spooled file         Line    Position
Form type  . . . . . .     __1      110
Job name . . . . . . .     ___      ___
Job number . . . . . .     ___      ___
Spooled file . . . . .     ___      ___
Spool file no. . . . .     __1      120
Device file  . . . . .     ___      ___
  Library  . . . . . .     ___      ___
Program that opened file . ___      ___
  Library  . . . . . .     ___      ___

The same placement will be used for all pages.
Use a area that is blank for all pages in the input output queue.

F3=Exit   F12=Cancel
```

In the above entry screen we define where the sort criterias should be inserted in the spool files, that will be used in the OSC output queue.

> **WARNING**
>
> The positions selected above must be positions where now other information will be stated. If the original spool data are in the same positions as specified above, they will be over written.

Define Sort Fields:

```
         Work with OSC sort definitions                              OSC330D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Position to  . . . . .          Sequence

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Change sequence

Opt   Seqnbr.  Description
 2          1  Find inserted sort fields




                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Press F6 to create a new Sort Definition. Enter 2 in front of an existing sort definition to change.

```
         Change OSC sort definition                                  OSC335D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Sequence . . . . . . . :     1
Description  . . . . . .   Find inserted sort fields

Page selection criteria
                 Print line   Position   Oper  Compare value
                     ___      ___ - ___  ____  ________________________________
                     ___      ___ - ___  ____  ________________________________
                     ___      ___ - ___  ____  ________________________________


Find sort fields in the following positions
                 Sort field no.   Print line   Position
                        1             __1      110 - 119
                        2             __1      120 - 129
                        3             ___      ___ - ___
                        4             ___      ___ - ___
                        5             ___      ___ - ___
                        6             ___      ___ - ___
F3=Exit   F12=Cancel
```

In the above entry screen we define in which positions OSC will find the SORT fields, which we previously defined. An extra feaure is the **Page selection criteria**, where we can define which spool pages should be sorted, based on the spool data contents. For further information about the page selection criteria see page 315.

Specify Grouping and separator page:

```
         Specify grouping and separator page                          OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Type choices, press Enter.

Group by number of
sort fields  . . . . . .   1   1-6

Insert separator page before
start of new group . . . .   Y   Y=Yes, N=No









A new group occurs when the content of one or more sort fields
(from sort field one to "Group by number of sort fields") changes.
All pages of a group will always be sent to same the output queue.

F3=Exit   F12=Cancel
```

A group is a number of successive pages having identical values in one or more sort fields. In the above entry screen specify how many sort values should be included in a group. Furthermore, specify if you wish a separator page between groups.

Define resulting output queues:

```
         Work with OSC resulting output queues                        OSC350D

Output queue . . . . . :   AFC_INPUT1
  Library  . . . . . . :     APF3812

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

      ---- Destination -----  Workload
Opt   Output que  Library     factor
__    AFC_INPUT1    APF3812          40
__    AFC_INPUT2    APF3812          60









                                                                       End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

In the above entry screen we define one or more resulting output queues for OSC to send the resulting spool file. As the resulting spool file could be quite big, it is possible to define more output queues to share the resulting spool file. Furthermore, we can define which workload factor the resulting output queues should have.
Above we have defined two resulting output queues to share the resulting OSC spool file. The workload have been set to be 40% for output queue AFC_INPUT1 and 60% for output queue AFC_INPUT2.

Specify automatic start scheduling:

```
         Specify automatic start scheduling                          OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Type choices, press Enter.

Monday   Tuesday  Wed.day  Thursday Friday   Saturday Sunday
15:00    15:00    15:00    15:00    14:00    _____    _____
_____    _____    _____    _____    _____    _____    _____
_____    _____    _____    _____    _____    _____    _____
_____    _____    _____    _____    _____    _____    _____
_____    _____    _____    _____    _____    _____    _____


F3=Exit   F12=Cancel   F20=Sort by time
```

In the above entry screen we can define a scheduled start time of each day of the week, if an automatic run of the OSC job is required. As an alternative to a scheduled start of a OSC job, the job could be started manually by the option 1. Run OSC in 1. Functions attached to output queues.

Specify automatic start options:

```
         Specify automatic start options                             OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . . :     APF3812

Type choices, press Enter.

Send message . . . . . .   4             1=Do not send message
                                         2=Before processing output queue
                                         3=After processing output queue
                                         4=Both before and after

Delayed auto start                       1=Start job
option . . . . . . . . .   1             2=Send inquiry message
                                         3=Skip delayed jobs

Message queue  . . . . . .   QSYSOPR___
  Library  . . . . . . . .     QSYS______

Delayed auto start can occur if Output Schedule Control (OSC)
- or the entire system - is ended and later restarted.

F3=Exit   F12=Cancel
```

When the hour has come for OSC to start a OSC job, we can define some options, in connection with the OSC job. First we define when or if we wish to be notified about an OSC job. In addition we can define what should happen in the event that there has been taken back-up of the System i, IPL has been performed or any other reason for the OSC job not being able to run at the scheduled time.
Finally we define where possible messages are to be sent.

Specify output queue for processed spooled files:

```
         Specify output queue for processed spooled files             OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . :     APF3812

Type choices, press Enter.

Output queue . . . . . .   ARCHIVE        Output queue, *DELETE
  Library  . . . . . .     APF3812









All input spooled files will be moved to the specified output queue,
or will be deleted if *DELETE is specified.

F3=Exit   F12=Cancel
```

When the OSC jobs have been executed we can define what should happen with the original spool files, taken from the OSC output queue. As per above entry screen, we can define if we wish to delete the spool files or we could enter an output queue for archiving purposes.

Specify job priority:

```
         Specify job priority                                         OSC300D

Output queue . . . . . :   OSC_OUTQ01
  Library  . . . . . :     APF3812

Type choices, press Enter.

Job priority (RUNPTY)  . .   50   11-99

Form type  . . . . . .   *OSC______




F3=Exit   F12=Cancel
```

Above we enter the desired run priority of the OSC job, and the form type used for the merged spool files.

The OSC definition has now been completed and upon exit from the OSC definitions we will be asked to save the definition.

Now you only have to setup Auto Forms Control jobs to monitor the output queues AFC_INPUT1 and AFC_INPUT2.

Configuration and licenses

If you want to setup the InterForm400 configuration and/or licenses (e.g. inserting the license code), then you first select option '70. Configuration and licences' on the InterForm400 Main Menu:

```
InterForm 400  -  CONFIGURATION                      System.......: PMK11
                                                     Workstn ID...: QPADEV000H
Select one of the following options:                    CCSID ....: 00037
                                                     User ID......: KSE
 1. Appoint administrator
 2. Configure InterForm 400
 3. Configure email
 4. Configure WinPrint
 5. Configure signature pad
 6. Configure maillog http server




50. Licence Information
51. SwiftView Users

60. Display InterForm400 End User License Agreement


Option: __


F3=Exit                F6=Display messages                F12=Cancel
```

Here you can setup the administrators, configure InterForm400, insert license codes and register the Swiftview users:

1. Appoint Administrator

When you choose the option 1. Appoint administrator on the configuration menu, you get the following screen:

```
         Appoint InterForm 400 Administrator                        APF100D

Choose a user to be administrator of the InterForm 400 system, or enter *ALL
to indicate that all users are given authority to the administration menu.


User profile KSE          Kim S. Egekjaer

   Vice administrators
Type options, press Enter.
  1=Add    4=Delete
Opt     User         Description

 _      HVE          Henrik V. Erikson
 _      KSE          Kim S. Egekjaer
 _      KSE2         Kim S. Egekjaer









F3=Exit                                                  F12=Cancel
```

It may be wise to appoint a frequent user of the InterForm400® system to be administrator. You may also choose a person in your computer department.

Once you have specified an administrator, and exit the system, only the appointed administrator will be given access to the administration menu.

The administrator may later pass on the authority to another user or re-open the administration menu to everyone (*ALL).

Viceadministrators have the same access as the administrator, except that viceadministrators are not able to add/remove administrators.

2. Configure InterForm 400

When you choose option **2. Configure InterForm 400** on the Configuration menu, you get the following screen:

```
          Configure InterForm 400                                  APF101D
                                                                      1/23

Specify default output queue for users with no individual output queue.

Users may override value when using the system.

        Output queue   __________
          Library        __________


Specify default printer type
   Printer type . . .  __________   HP4, HP4D, HP4_PJL, HP4D_PJL,
                                    HP5C, HP4500, HP4500D,
                                    ZEBRA203, ZEBRA300, QLZPL203,
                                    IPL203, IPL300


Allow users to override standard printer type ?     Y   (Y N)


F3=Exit                                                  F12=Cancel
```

If you are only using one laser printer for manual merges (option 3 in the main menu), you can specify it here.

If you have more than one laser printer, you may wish to assign printers to users individually. This is done under Work with InterForm400® users.

The advantage of operating with standard output queues is, clearly, that users avoid having to select an actual output queue each time they enter the InterForm400® system.

The system supports a number of different printers. Besides the types mentioned in the above screen, the system supports all other laser printers which emulates an HP printer. If your printer is not mentioned, you should specify HP4 in the field Printer type. Refer to page 478 for detailed information on supported printers.

If you have more than one printer type connected to System i, you should allow users to override the default printer type. Press Enter and the next screen is displayed.

```
          Configure InterForm 400                                  APF101D
                                                                       2/23

Specify default form type for the InterForm 400 system.

Users may override value when using the system.


        Form type     *STD_____



Select paper size     4  1 = LETTER      5 = COM-10      A = LEDGER
                         2 = LEGAL       6 = MONARCH     B = A3
                         3 = EXECUTIVE   7 = C5          C = A5
                         4 = A4          8 = DL

Do you want to define paper size on the individual overlays          Y (Y N)


 F3=Exit                                                  F12=Cancel
```

The specified type of forms will be used throughout the system unless you state Y to allow individual paper size definitions for different overlays.

Note that the Paper size selection on the Design overlay menu (see screen with Global overlay settings on page 59) will only appear if Y has been stated in this screen. If N is inserted all overlays throughout the system will use the default paper size stated here.

```
          Configure InterForm 400                                  APF101D
                                                                       3/23



Number to be added to the macro numbers the system works with . . .   ____0


The reason to add a number can be, that printers are equipped with
flash-simm cards, that does not correspond to the HP standard saying,
that a macro in the printers internal memory should be selected,
even if it has the same number as a macro in the flash-simm.









F3=Exit                                                  F12=Cancel
```

The next screen is a possibility of defining an offset to the macros generated by InterForm400®.

InterForm400® will always load the overlay as a macro prior to the spool data for performance reasons. The macro ID can in some rare cases conflict with resident macros installed in the printer.

This default value of zero should normally not be touched.

```
          Configure InterForm 400                                APF101D
                                                                    4/23


Do you want to use DDM to InterForm files
on other AS/400

        Use DDM . . . . . .   _     (Y N)









F3=Exit                                                F12=Cancel
```

This screen will allow InterForm400® to copy overlays from an installed InterForm400® on another System i using DDM (Distributed Data Management). When applying Yes to this option, the function key **F10** will be available from the design menu, when copying from another overlay (see page 58)

```
         Configure InterForm 400                                 APF101D
                                                                    5/23


The Name that is used for this AS/400
under "Other computers" on PC's.

    Networkname  . . . . . .  222.2.1.247_______________

    Sharename  . . . . . .  APF3812Home


Public authorisation to files that are created in the /APF3812Home/VIEW directory.

                               1   0 = *EXCLUDE
                                   1 = *ALL


 Install SwiftView at drive
                               C   A - Z



F3=Exit                                                F12=Cancel
```

This screen is used to define the network name of the System i when accessed by TCP/IP connected Windows PCs. This name is the IP-address or the System i system name (e.g. QS4449079), but can be changed when configuring the iSeries Access TCP/IP connection. You can verify this name in the “iSeries Access Connections” on the PC. Note that all users using the InterForm400® PCL viewer function, must have the same system name configured in their iSeries Access TCP/IP connection.

If you want to install Swiftview on another drive than C: on the PCs, then you can define the alternative drive above.

This feature is used for the PCL and PDF viewer. Refer to page 37 for more information of the parameters above.

```
          Configure InterForm 400                                  APF101D
                                                                      6/23


Select primary language.


        Language code  . . . .  EN      DE=Deutsch, DK=Dansk, EN=English,
                                        ES=Españoles, FR=Français, PT=Português









F3=Exit                                                  F12=Cancel
```

This menu sets the primary language for the InterForm400® menus. This can be overwritten for each individual user.

```
          Configure InterForm 400                                  APF101D
                                                                      7/23
Do you want to use the APF3812/STRWTRCHK program as validity checking program
for the STRPRTWTR and STRRMTWTR commands, to avoid a writer to be started with
FORMTYPE(*ALL) on one of the output queues defined in Auto-Forms-Control, and
if yes, what formtype has to replace *ALL when a writer is started on one of
these output queues.



    Use APF3812/STRWTRCHK as a validity checker    N   (Y N)

    Formtype to replace *ALL . . . . . .  __________

This option is especially useful, if you are using the same output queue
for both input to AFC-functions and for output to a printer, as a writer
never should be started with FORMTYPE(*ALL) on such an output queue.




F3=Exit                                                  F12=Cancel
```

If you want Auto Forms Control to monitor output queues with printers attached, you now have the option to state a specific Form Type the writer should process only.

The next screen is this:

```
        Configure InterForm 400                                       APF101D
                                                                          8/23


Do you want to be able to use UCS2 (unicode) in your spooled files.


        Use UCS2 . . . . . . . .  Y      (Y N)












F3=Exit                                                     F12=Cancel
```

If you activate unicode in this screen it will make InterForm400 do this:

1. Unicode options on the InterForm400 menues will be made visible.

2. The spooled files that are merged are inspected to search for a user defined option (USRDFNOPT) that is 'IF-UCS2'. If that is found the spooled file is considered to be unicode. Alternatively you can also use normal AFPDS unicode spooled files as input. Refer to **Appendix D** on page **482** and page **52** for more information.

```
        Configure InterForm 400                                       APF101D
                                                                          9/23


Auto Forms Control subsystem


   Subsystem description  . .  AUTO_FORM_
     Library  . . . . . . . .    APF3812___












F3=Exit                                                     F12=Cancel
```

The screen above shows the current subsystem description and the library of it, that is used for Auto Forms Control. Here you can chose a different name or library if wanted. If you select a description that does not exist InterForm400 will suggest to copy the default objects used to the new library:

```
               Create AFC subsystem description

Subsystem description  . .  AUTO_FORM2
  Library  . . . . . . . .    APF3812

Press Enter to create the subsystem description or
press F3 or F12 to cancel.

Note:
The following objects will also be created or updated in
the subsystem library:

Object     Type   Description
AUTO_FORM  *JOBQ  Auto Forms Control job queue
AUTO_FORM  *CLS   Auto Forms Control class
AUTO_FORM  *JOBD  Auto Forms Control job description
AFCSTART   *JOBD  Auto Forms Control startup job description

F3=Exit              F12=Cancel
```

Just like for the AUTO_FORM subsystem above InterForm400 will ask if you want to change the other subsystems on the next screens:

Output Schedule Control	(Default subsystem: APF3812/OSCCTL)
Email recovery	(Default subsystem: APF3812/MAILINTER)
Card reader terminal	(Default subsystem: APF3812/TERMINTER)

(The Card reader terminal is used for the Digital signature/PDF Security module only).

The remaining screens are explained on page 41 and onwards.

3. Configure email

With this option (within the configuration menu) you setup how InterForm400 should send e-mail if needed. It offers the possibility so use normal OS400 SMTP or InterForm400 SMTP:

(The contents of the screen depends on the e-mail mode you select. Here all possible texts are displayed.)

```
         Configure email                                          SMP400D

Email recovery subsystem :   MAILINTER
  Library  . . . . . :         APF3812

Email mode . . . . . .   2       1=IBM SMTP, 2=InterForm SMTP
                                 3=InterForm SMTP (register only)
Automatic recovery
Delay before retry . . . .   __3     1-120 minutes
  Number of retries  . . .   _1      0-99
Delay before retry . . . .   _30     1-120 minutes
  Number of retries  . . .   _1      0-99

Email gateway                        blank=no email gateway
Host or ip address . . . .   ________________________________________________
Port . . . . . .   ______    1-65535, blank=default port (25/465/587)
BlueSeries integration
Use when possible  . . . .   N       Y=Yes, N=No

Note:
Subsystem MAILINTER must be active to enable automatic recovery.

F3=Exit   F8=Gateway security   F12=Cancel   F20=Alternative gateways
```

The options are these:

Email mode

1=IBM SMTP: This is the default value and will make e-mailing from InterForm400 to run as in pre 2007 versions. This makes InterForm400 send out via OS400 SMTP and MSF servers. This requires that the SMTP and MSF servers are setup correctly and are running. Refer to **Appendix N** on page 582 for more information of how to do that.

2=InterForm SMTP: Use the InterForm400 SMTP instead of the IBM SMTP. It requires that the **MAILINTER** subsystem is running and that the System i is able to reach internet to e-mail itself or via the E-mail gateway.

3=InterForm SMTP (register only): All e-mails sent from InterForm400 are not sent immediately but only registered. This can e.g. be used for testing. You can then at a later time (e.g. at night where the bandwidth is most probably not used) send all pending e-mails with the command **APF3812/SNDMAILS**. You can view the registered mails via the **APF3812/WRKMAILLOG** command.

Automatic recovery

This is only relevant for InterForm SMTP. Here you setup the delay to use for the first retries (if the receiving mail server e.g. cannot be found) and the delay for additional retries.

With the setup above InterForm400 will try to send the e-mail and then retry twice with a 3 minute delay. Then wait 30 minutes and then try once again. If still not found the e-mail will end up with status ***FAILED** in the mail log.

Email Gateway

This is only used for InterForm400 SMTP. If you state a gateway this will be used as an external mail server for InterForm400. If you leave this field blank the System i must be able to reach the internet itself.

Port If you want to access the external mail server above through another port number than the default (25), then you can type it here.

BlueSeries Integration

If you have BlueSeries installed on the same System i and you want to email through BlueSeries, then you can activate that here. Please notice, that some email options are not supported for BlueSeries Mail, so if any of these options are used, then BlueSeries Mail will **not** be used - even if you activate this option (and the normal InterForm400 mail setup is used instead).

The email options **not supported** by BlueSeries Mail are:
***HTML** and *HTMLRAW (html and raw html commands in email contents).
Center or **right alignment** of the email contents.
Unicode output.
Only one receiver is supported by BlueSeries Mail. **Multiple receivers** are not supported by BlueSeries Mail.
CC and BCC receivers are not supported by BlueSeries Mail.
The **Confirmation of delivery** option is not supported.
Indexing (archiving) of email is not supported.
Use of **variables in** an **html** stream file is not supported.

Note, that the **APF3812/MAILINTER** subsystem must run in order to make automatic retries possible (only available for InterForm400 SMTP). You should consider to start this subsystem during IPL e.g. via the **QSTRUPPGM** program if you use InterForm400 SMTP. Refer to the commands APF3812/ENDMAILSBS and APF3812/STRMAILSBS on page **523** and **529** for details.

F8=Gateway Security
In the bottom of the screen above you might see the message:
Error D/202 occured starting secure environment.
This message indicates that you have not setup any SSL or STARTTLS preferences and setup **DCM (Digital Certificate Manager)**. That can be used for InterForm SMTP (if you have setup an email gateway) by pressing **F8=Gateway security**:

```
         Configure email                                          SMP400D

Email recovery subsystem :   MAILINTER
  Library  . . . . . :         APF3812

Email gateway security
User . . . . . .   interformng@gmail.com
Password . . . . . .   xxxxxxxxxxx

Connection type  . . . . .   2   0=Clear text,
                                 1=SSL, 2=STARTTLS
SSL/STARTTLS security
Certificate validation . .   0   0=Check certificate issued by a trusted CA
                                 1=Trust ONLY the retrieved certificate

Press Enter to retrieve a new SSL/STARTTLS certificate

Last retrieved gateway server certificate
Email gateway  . . . . . :   smtp.gmail.com
Common name  . . . . . :   smtp.gmail.com
Serial number  . . . . . :   3b:74:ff:7b:00:00:00:00:68:a8
Valid to . . . . . :   2013-06-07 21:43:27

F3=Exit   F10=Display retrieved certificate   F12=Cancel
```

Notice, that this is only used if you have selected InterForm SMTP and typed in an Email gateway in the previous screen.

The user and the password is used for signing on to the mail server. The **connection type** sets the format via which InterForm400 will communicate with the mail server. If you set the

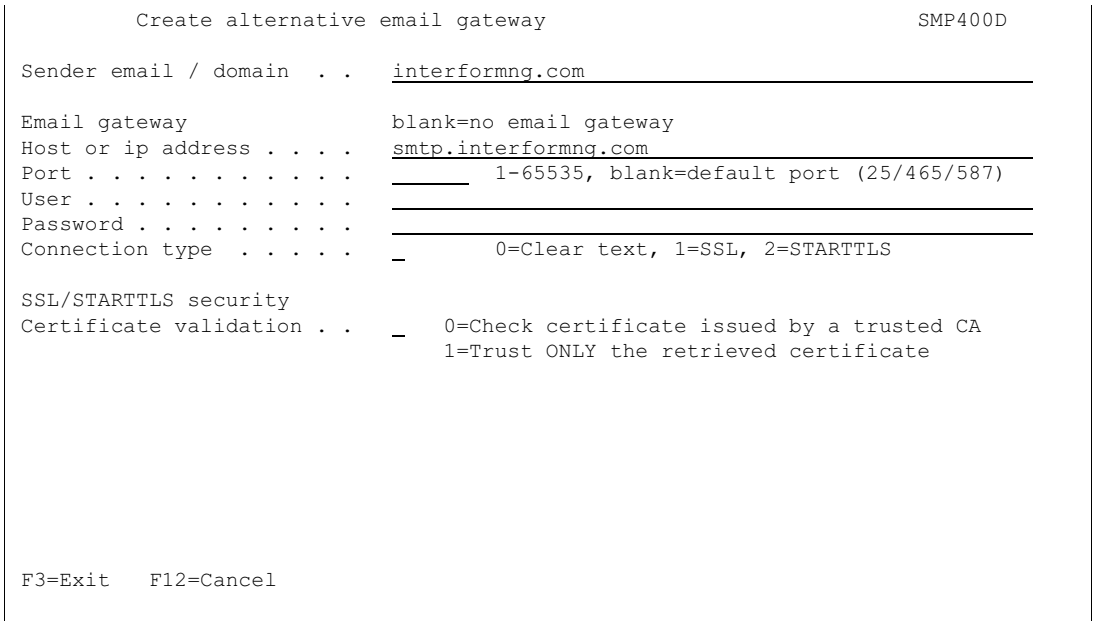
connection type to be either SSL or STARTTLS, then you should also consider to set the **certificate validation** to decide how to validate the certificate.

Certificate validation:
0=Check certificate issued by a trusted CA: Use this option to accept any certificate issued by a trusted CA in DCM. If you select this, then the emailing will still work after the current certificate runs out.
1=Trust ONLY the retrieved certificate: If you select this option, then only the current certificate is used/trusted. When it runs out you will need manually to install a new certificate.

With **F10=Display retrieved certificate** you can view the certificate, that is used.

Appendix U on page 673 describes how to setup Digital Certificate Manageer (DCM) and how to install the necessary certificates.

F20=Alternative gateways
You can define multiple SMTP gateways if one mail server/account is not enough. You define the additional gateways via this function. You press F6 to add a new gateway:



Sender email / domain
This is the 'trigger' for using this gateway. In the example above this gateway will be used if the senders email address has the domain interformng.com. Instead of a domain you can also specify a specific email address.

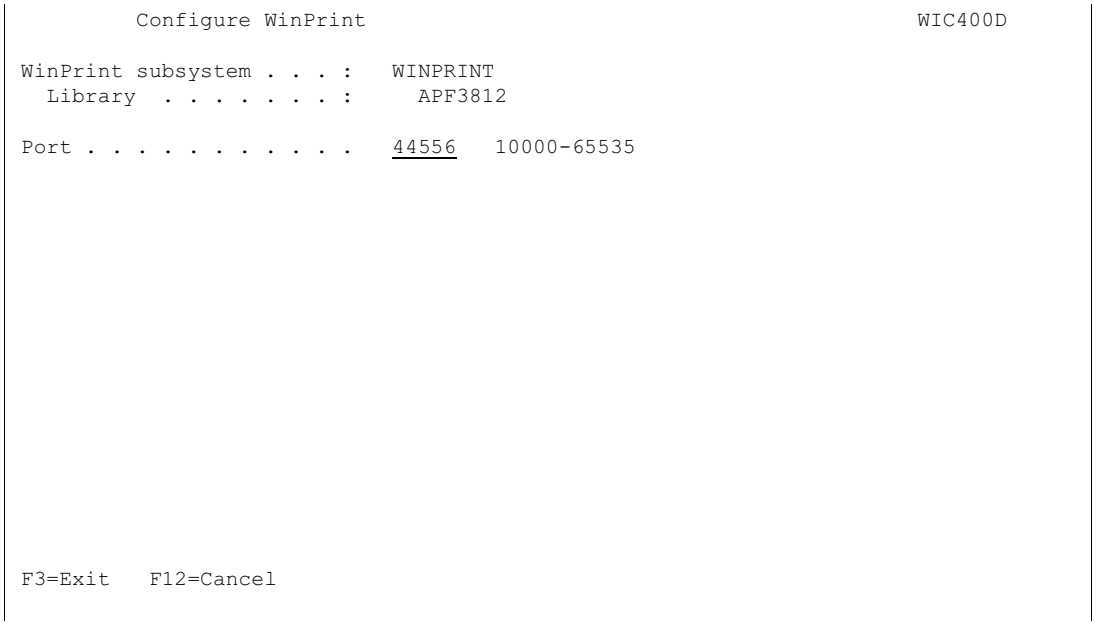
Use the **APF3812/WRKMAILLOG** command to see a log of all sent e-mails.

NOTE
Remember to run the command **APF3812/CLRMAILLOG** regularly to prevent a build up of old emails in the /APF3812mail/Outbox directory. This command is described on page 523.

4. Configure WinPrint

WinPrint is a module for InterForm400 which enables printing on any printer connected to a windows PC (e.g. via USB), if the printer driver installed can print normal PDF files. WinPrint require that a WinPrint client is installed on the PC. For details refer to the WinPrint manual.

This option sets the port number via which InterForm400 will communicate with the WinPrint clients:



5. Configure signature pad

You can make Interform400 insert a real-time signature into an output PDF file. This requires a signpad and a license code, which includes support for the signpad module.

The complete signpad module and it functionality is described in **Appendix V** on page **685**.

6. Configure maillog http server

With this option on the InterForm400 configuration menu you set the options for the mail log http server:

```
         Configure Maillog http server                                IFM400D

Server http subsystem  . :   QHTTPSVR
  Instance . . . . . . . :     IF400MAILW

Port . . . . . . . . . . .    7375   6000-65535

Changing the port, issues a restart of the IF400MAILW instance, if active.

Start automatic when AUTO_FORM is started ?  Y   Y=Yes, N=No









F3=Exit   F12=Cancel
```

Above you set the port number to use for the mail log service. A changed port number is immediately used - without the need to restart the mail log service.

The mail log service is automatically started with the AUTO_FORM subsystem (if enabled), so it is required, that the auto_form subsystem is running in order to use the mail log service.

Refer to page 432 for the use of the mail log web interface.

Administering InterForm400® Environment and Users

When the InterForm400® system is installed for the first time, the option Administering InterForm400® is open to everyone.

Once an administrator of the system has been appointed, this person is the only one who can select this option.

When you choose option 80 from the main menu you will enter a menu with the following contents:

```
 InterForm 400  -  ADMINISTRATION                    System.......: INTER01
                                                     Workstn ID...: QPADEV0003
Select one of the following options:                 User ID......: PETER

 1. Work with InterForm 400 users
 2. Work with file sets
 3. Connect users with overlay file sets
 4. Work with fonts
 5. Work with images
 6. Work with PCL-files
 7. Work with palette
 8. Work with paper control options
 9. Work with AFPDS copy spooled file CPI & LP

10. Maillog http server administration
20. Certificate administration
30. WinPrint administration
40. Email administration
50. Work with Designer job overlay locks

Option: __

F3=Exit                F6=Display messages                F12=Cancel
```

The menu items 1 to 3 regards setup of the environment. Option '20. Certificate administration' can only be used if you have a license code for the Digital Signature/PDF security module of InterForm400.

The options are described individually in the following paragraphs.

1. Work with InterForm400® Users

When you choose the option 1. Work with InterForm400® users on the administration menu, you get the following screen:

```
         Work with InterForm Users                                  APF220D

Position to . . . . . _____________    User profile

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display    9=File set access


Opt   User        Description
 _    JEC         JEC
 _    JENSP       Jens
 _    PETER       Peter Hansen

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

You can see other informations of the users by pressing F11-View2, and you can add/remove access to file sets with option **9=File set access**.

When adding a user profile by pressing F6 you will be prompted to enter language and printer information for the user:

```
         Create InterForm user                                      APF102D

User profile . . . . . .  KSE_______

Language of user . . . . .  EN              DE, DK, EN, ES, FR, PT
Users output queue . . . .  PRT01_____
  Library  . . . . . .        QUSRSYS___

Printer type . . . . . .  HP4D_PJL__        HP4, HP4D, HP4_PJL, HP4D_PJL,
                                            HP5C, HP4500, HP4500D,
                                            ZEBRA203, ZEBRA300, QLZPL203,
                                            IPL203, IPL300

Designer code page . . . .    ___37         blank = system default
  When to use code page  .    ________      *SPLFATR, *ALWAYS

DBCS code page . . . . . .    _____         blank = system default
  When to use code page  .    ________      *SPLFATR, *ALWAYS



F3=Exit     F12=Cancel
```

The language of the user will affect the menus in InterForm400®. If left blank, the default language of the installation, as entered in **2. Configure InterForm 400** (on the configuration menu), will be used. (Refer to page 344)

It is not necessary to define an output queue and a printer type. If left blank the definitions from **2.Configure InterForm 400** described on page **341** will be used.

If this user want to type in text in another code page than the system code page in the graphical designer you can state it here. If you intend to use InterForm400 with DBCS you must type in the **DBCS codepage** used above for the individual users.

When to use code page: ***SPLFATR** - Spooled file codepage will be used if it contains a specific one.
***ALWAYS** - Ignore any spooled file codepage - even if there is a specific codepage on the spooled file attribute.

2. Work with file sets

The files in which overlay and report definitions are kept are subdivided into members. The idea is to enable individual users or user groups to maintain their own file-sets.

It is not possible to operate on more than one file set at a time in the system. This means, for example, that all overlays to be used in a particular report must be saved in the same file set as the report definition.

The program starts with the following screen:

```
          Work with File sets                                        APF410D

Position to . . . . . .  __________   File set

Type options, press Enter.
  2=Change 3=Copy  4=Delete 7=Rename 9=User access
  12=Overlays in file set

Opt   File set    Description                                        Type
 __   A           Files for A                                        Laser DPX
 __   BALT        File Set Balt Test                                 Laser DPX
 __   BE          Be                                                 Laser
 __   BROCK       Brock                                              Laser DPX
 __   CARMEN      Rot file set                                       Laser DPX
 __   CERDO       Cerdo                                              Laser DPX
 __   COLOR       Test of color fileset                              Laser DPX
 __   CONCORDE    Overlays for concorde print                        Laser DPX
 __   DEMO        demo                                               Laser DPX
 __   EURO        Overlay for euro                                   Laser DPX
 __   EX          EX                                                 Laser DPX
 __   FARBEN      Farbe druck                                        Laser DPX
 __   ZEBRA       Zebra Garden                                       Zebra
                                                                    More...
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

You can now use the normal options for changing, copying, deleting or renaming file sets. You can change the list of users that are allowed to work with a file set as well via option 9=User access.

> ☺ **TIP** ☺
> *If you want to change access to many file sets for a specific user, it is easier to first select '1. Work with InterForm400 users' and then '9. File set access' instead of option 9 above.*

Since the file-sets in the system are file members, they must meet the requirements to member names, i.e. the first character must be within the range A-Z. The succeeding characters can be A-Z, "_" (underscore), 0-9 or blanks, with the restriction that blanks may only appear at the end of the name.

If you press F6=Create, you get the following screen:

```
          Create File set                                          APF411D


File set name  . . . : TST_______

Description  . . . . . _____________________________________________

Printer class  . . . . _    1 = Black/White laser
                            2 = Color laser
                            3 = Label printer

Do you want to use duplex print                _ (Y N)
(only active for HP4D and HP4500D)



F3=Exit                                                    F12=Cancel
```

If you have chosen a file set which already exists you may delete it or change the descriptive text associated with it. If you have chosen a new name you must also enter text. The purpose of the text is primarily to ease the management for users with access to more than one file.

The Printer Class specifies the type of printers, which this file set should include overlays for. Depending on this selection, the menus and available functions will change throughout the program. Note that screen shots in this manual correspond to a selection of 1=Black/White.

Note: When choosing printer class 1 instead of 2, you are restricting the overlay definitions in this file set from using any colour resources e.g. colour images and selecting colours with the INK lines. Printer class 3 are used for file sets for Label printers e.g. Zebra printes.

Only if you answer **Y** to duplex, screens related to design of overlays will include queries about duplex (e.g. back page overlay).

If you select option '12=Overlays in file set ' on the work with file set screen, then you can work with the overlays within the selected file set:

```
          Work with overlays                                       APF420D

File set  . . . . . :   SAMPLE
Position to . . . . .   __________   Overlay

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Rename   31=Rotate 90 deg
  32=Rotate 180 deg   33=Rotate 270 deg

Opt  Overlay     Overlay description             Paper Size
__   BLANK       Blank overlay                   DEFAULT
__   FORM1       Prinserter sample DK envelopes  DEFAULT
__   FORM2       Prinserter sample DE envelopes  DEFAULT
__   IF400DEMO   InterForm 400 Demo Form         DEFAULT
__   JOBLOG                                      DEFAULT
__   PATTERNS    Pattern IDs                     DEFAULT
__   POSITIONS   Print SPLF with positions A4    DEFAULT
__   RULER       Ruler                           DEFAULT
__   TEST                                        DEFAULT


                                                                    End
F3=Exit   F5=Refresh   F12=Cancel
```

With the work with overlays screen you can now change, copy, delete, display, rename and even rotate the overlays. The rotation is counter clockwise.

3. Connect Users with Overlay File Sets

The system may contain any number of file sets. With this option you can specify which file sets the individual users may operate on.

> ☺ **TIP** ☺
> *Even though you can add/remove user access via this option (which is a bit old), it is normally much easier and faster to do that by first selecting '2. Work with file sets' and then select option '9=User access' for the file sets in question - or by selecting '1. Work with InterForm400 users' and select '9=File set access' for the user - if e.g. a new user should be given access to multiple file sets.*

The program starts with the following screen:

```
         Connect users with overlay and report file sets

A user can be connected with one or more specific file sets
Several users may be connected with the same file set.

User profile __________









F3=Exit                F4=List InterForm users                    F12=Cancel
```

Enter the user profile of the user in question, and you will get this screen:

```
         Connect users with overlay and report file sets

A user can be connected with one or more specific file sets
Several users may be connected with the same file set.

User profile PETER      Peter Hansen

This user is connected with the following file-sets:







Specify name of file-set to be connected with / disconnected from user:

        __________


F3=Exit           F4 = List InterForm 400 file-sets           F12=Cancel
```

If the user had already been connected with one or more file-sets these would have appeared in the sub-file at the centre of the screen. However, in this case we are looking at a new user, and the sub-file is blank. Once you enter the name of an existing file-set, you will get the following screen:

```
         Connect users with overlay and report file sets

A user can be connected with one or more specific file sets
Several users may be connected with the same file set.

User profile PETER      Peter Hansen

This user is connected with the following file sets:









Specify name of file-set to be connected with / disconnected from user:

        TEST       Peter Hansen's personal test file set
Connect file set with user  (Y N)                   _

F3=Exit                                                 F12=Cancel
```

The text which now appears to the right of the file set name is the one that was specified when the file set was created.

Answer **Y** to confirm that the chosen file set should be connected with the user. The display changes as you can see here:

```
         Connect users with overlay and report file sets

A user can be connected with one or more specific file sets
Several users may be connected with the same file set.

User profile PETER      Peter Hansen

This user is connected with the following file sets:

       TEST       Peter Hansen's personal test file set









Specify name of file set to be connected with / disconnected from user:

       __________
Connect file set with user  (Y N)                   _


F3=Exit                                                         F12=Cancel
```

Press **F3** when all required file sets have been assigned.

Working with Fonts

InterForm400® exploits resident and down loaded PCL fonts of HP compatible printers independent of their attachment to the System i.

InterForm400® has a built-in conversion table between IBM font ID's, known from the IBM 3812 page printer, and the substituted "look-alike" PCL fonts of the HP4 (PCL5e) compatible printers.

This means that the native font conversion tables of interfaces, the iSeries Access printer sessions, or other protocol converter functions, are NOT used for selection of fonts in the forms (overlays) or the spool entries being used for filling of the forms.

RESIDENT FONTS

Appendix F (refer to page 489) displays a list of the emulated IBM font ID's which are selectable in InterForm400® as default.

Note, that font outlines might vary between the different printer models attached to your system, depending on their HP compatibility and their PCL emulation level.

It is therefore advisable to print a font reference on all the different printers in your System i environment, and base your corporate standard on fonts that looks the same on all of your printers.

You can also define new font numbers based on typefaces known by the printers using option **1. Description of additional fonts**.

SOFT FONTS

Should you require to use fonts which are not currently available among the resident fonts of your printers, you can choose to import fonts to InterForm400® from your PC environment.

InterForm400® supports import of True Type Font files (TTF). These can be converted to a soft font by InterForm400®.

You need to install/create the soft font for each kind of possible output, that you want to use i.e. PCL, PDF and ZPL (for Zebra printers).

4. Work with Fonts

```
         Work with Fonts                                              FNT001D

Select one of the following options:
Work with PCL and PDF fonts
 1. Description of additional fonts
 2. Work with universal fonts

 4. Work with soft fonts for PCL
 5. Work with TrueType font for PDF
 6. Work with TrueType font for UCS2 (unicode)

 8. Auto download soft fonts

Work with ZEBRA fonts
11. Description of ZEBRA fonts
12. Work with ZEBRA soft fonts
13. Work with fonts in ZEBRA flash memory
14. Substitution ZEBRA internal fonts
19. Initiate ZEBRA flash memory and reload fonts and images

Option:

F3=Exit                 F6=Display messages                     F12=Cancel
```

Selecting option **4. Work with fonts** enables to you define new fonts, to work with soft fonts for PCL (including download to flash SIMM modules), to specify soft fonts to be automatic downloaded, to extract a soft font from a PC-print, to create a barcode soft font and to install a True Type Font for PDF.

Each of the options are described below.

1. Description of Additional Fonts

This function gives you the possibility of using all fonts available on HP-printers or compatibles.

```
         Work with Fonts                                              APF360D

Position to . . . . . .   ____   Font

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Assign new font number
  8=Display overlays referring to font

Opt   Font        Description
 _    7001        Copy font
 _    9901        Sample - Universe 7 pt
 _    9902        Sample - Universe 8 pt
 _    9903        Universe - 10 pt
 _    9904        Sample - Universe 12 pt
 _    9905        Sample - Universe bold 9 pt
 _    9906        Universe - Sample 18 pt
 _    9910        Sample - Universe 7 pt



                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

NOTE

Commitment control is used in InterForm400 when you rename fonts in InterForm400 via option '7=Assign new font number' as shown above. This is the only function in InterForm400 using commitment control. This is important to notice if you are running an iASP installation: The ASP group must be set prior to font renumbering.

Pressing F6 to add a new font brings up the following screen:

```
         Create Font                                              APF370D

Font  . . . . . . . . . . . .  ____  4200-9999

                                     4200-4299 QR Bar Code - Model 2
                                     4300-4399 Data Matrix Bar Code - ECC200
                                     4400-4499 PDF417 barcode
                                     4500-4599 EAN8/EAN13/UPC-A soft fonts
                                     4600-4699 Code 39 soft fonts
                                     4700-4799 Code 128 soft fonts
                                     4800-4899 IDA bar codes
                                     4900-4999 Interleaved 2 of 5 soft fonts
                                     5000-9999 Other fonts

F3=Exit    F12=Cancel
```

Additional fonts must have a font ID in the interval 5000-9999, i.e. you can define up to 5100 fonts in addition to the standard fonts. (refer to page 489). The other areas are reserved for bar code soft fonts (refer to the Bar code section on page 381).

In order to define a new font, we could for instance enter 9990 and we would get the following screen:

```
         Description additional fonts                             APF360D

Font  . . . . . . . . . . . .  9990  Other fonts

Description . . . . . . . . .  ________________________________________

Spacing . . . . . . . . . . .  _       0=Fixed, 1=Proportional
Pitch . . . . . . . . . . . .  _0,00   0,10-49,99
Height  . . . . . . . . . . .  __0,00  1,00-792,00
Style . . . . . . . . . . . .  0       0=Upright  1=Italic  4=Condensed
                                       5=Condensed italic
Stroke weight . . . . . . . .  0_      (-7 - +7) 0=Medium <0=Light >0=Bold
Typeface  . . . . . . . . . .  ____0   0-65535
Symbol set  . . . . . . . . .  _____   blank=standard

Override spacing  . . . . . .  _____   blank=standard

F11 = Delete              F4 = Prompt                        F12 = Cancel
```

The description text will appear on overviews of fonts (prompt with **F4**).

The following information for your specific font can be collected by printing out a font list from your printer. This is a facility of the HP printers, and is common for many other compatible printers also. Alternatively, you can consult your printers technical reference for information on the resident fonts.

Spacing:
Indicates whether the font is mono spaced (fixed pitch) or proportional spaced.

0=monospaced 1=Propotional spaced

Pitch: This field is only of importance if you have chosen fixed spacing. Then enter e.g. 10,00 for 10 CPI. If you have chosen proportional spacing, just enter a value within the valid interval, as the width of the individual letters is relative to the height of the font.

Height: The height of a font is expressed in typographical points. A point is 1/72 of an inch. A font height of 1/3 of an inch therefore has to be specified as 24,00. The height of a font is slightly greater than the distance from the top of a capital letter to the bottom of e.g. the letter "g".

Style: Style has the following meaning:

0=Upright *1=Italic*

Stroke weight: This describes the thickness of the characters:

0=Medium **3=Bold**

Typeface:
This field has to be filled in with an ID-number of the typeface to be used. There is a lot of possible typefaces (refer to the font list or the technical reference of the printer). Here a few of the scalable typefaces of the HP4 (PCL5e) are shown:

```
   05  = CG Times Roman
   52  = Univers (PCL5)
 4148  = Univers (PCL5e)
16602  = Arial
16901  = Times New Roman
```

For other typefaces refer to page **493**.

Symbol Set:
The symbolset of the font. Entering a symbolset here is normally for selecting special symbol character sets.

Override spacing:
Here you can override the spacing for fixed width fonts. If you e.g. use a 10 CPI courier font and override to 5 then the 10 CPI font is written with a spacing of 5 CPI.

Note that changing the above parameters does not change the appearance of the font unless a font matching the changes can be found in the printer. Print out a font list from the printers front panel to get an overview of available resident PCL fonts.

Example of Defining a Resident Printer font

We want to define a 70 point Univers Bold Italic for use in our overlay definitions. We know this font is available as a resident scalable font in HP4 compatible printers.

First we must print out a Font List from the printer's front panel. Refer to the User's Guide of your printer.

Univers Bold Italic is listed on a HP4 Font List with the following PCL Escape Sequence:

<Esc>(s1p__v1s3b4148T

If we break it up, we have the following information:

1p	= Proportional (Spacing)
___v	= Empty field for point size (Height)
1s	= Italic (Style)
3b	= Bold (Stroke Weight)
4148T	= Univers (Typeface)
“Blank”	= Use the default

We now only need to define the font ID which will be used to select the font when designing forms. By pressing **F4** we will get a list of the font ID’s between 5000 and 9999 which are already occupied.

In the following we have chosen font ID 7001 to represent our 70 point Univers font:

```
         Description additional fonts                                APF360D

 Font  . . . . . . . . . . . .  7001  Other fonts

Description . . . . . . . . .   Univers Bold Italic 70 Point


Spacing . . . . . . . . . . .   1      0=Fixed, 1=Proportional
Pitch . . . . . . . . . . . .  _0,10   0,10-49,99
Height  . . . . . . . . . . .  _70,00  1,00-792,00
Style . . . . . . . . . . . .  1       0=Upright  1=Italic  4=Condensed
                                       5=Condensed italic
Stroke weight . . . . . . . .  3_      (-7 - +7) 0=Medium <0=Light >0=Bold
Typeface  . . . . . . . . . .  _4148   0-65535
Symbol set  . . . . . . . . .  _____   blank=standard

Override spacing  . . . . . .  _____   blank=standard









F11 = Delete              F4 = Prompt                          F12 = Cancel
```

Now font 7001 and the description Univers Bold Italic 70 point will appear in the list of available fonts (prompted by **F4**) anywhere in the InterForm400® system where you can insert a font ID.

If you press **F4** in this menu you will get a list of the user defined fonts and bar codes only.

Printing “HELLO” with Font 7001 will now give this result:

HELLO

2. Work with universal fonts

It is possible to create individual font numbers, and link them manually to an installed soft font, but it can be some tedious work, if you e.g. want to define multiple sizes of the same font. The work becomes even more, if you want to use the same soft font (True Type Font) for codepages, that belong to different ASCIII codesets, because then you need to install the soft font for each ASCII codeset, that you want to generate.

The quick, efficient shortcut is to define a new universal font for all outputs: PCL, PDF, IDP and ZPL. With this you refer to a True Type Font, select a font range, and then InterForm400 will create the same font in many different sizes and prepare the Type Type Font for any ASCII codeset, which means you can immediately start to use the new fonts without any additional configuration.

Installation of universal fonts

To install a new universal font you first need to upload the True Type Font in question to the IFS inside /APF3812Home/Work. Now you select these options work with the universal fonts:

80. Administering InterForm400
4. Work with fonts
2. Work with universal fonts
Then you see this screen:

```
          Work with universal soft fonts                              FNT350D

Position to . . . . . .  ___________  Font name

Type options, press Enter.
  2=Change   4=Delete   5=Display   8=Dsp. attributes   9=Where used

Opt  Font name   Description
 _   COMIC       Comic Sans MS

                                                                          End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

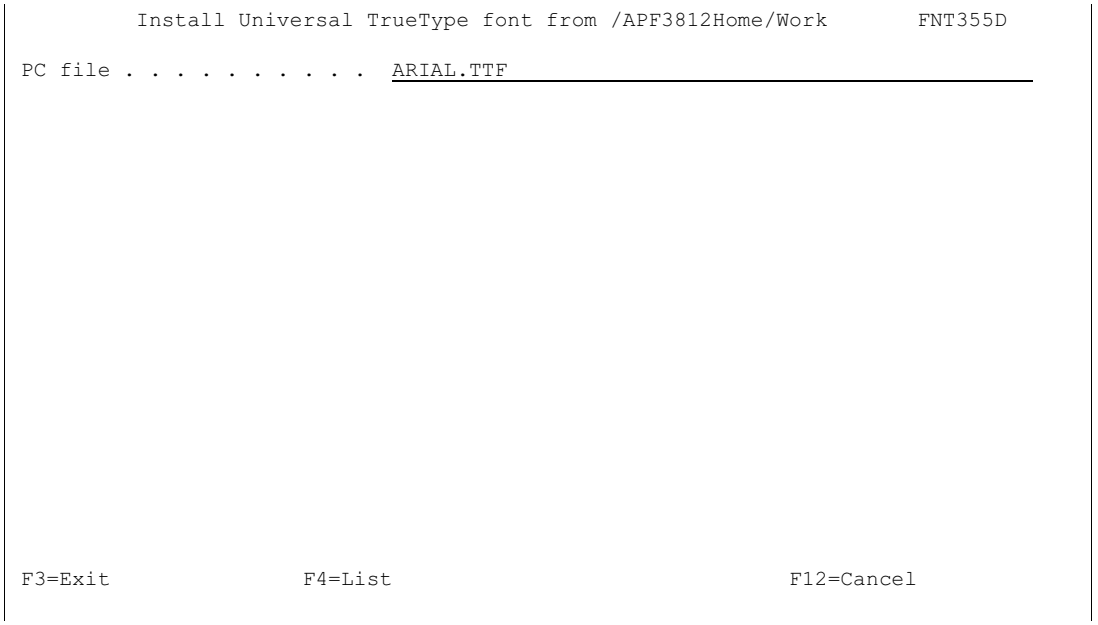
If you select option 4=Delete for a universal font, then InterForm400 will delete:

- The related font number for PCL/PDF and label file sets.
- The related soft fonts for PCL/PDF and label file sets.
- Entries in auto download for printer groups *PCL and *PDF.

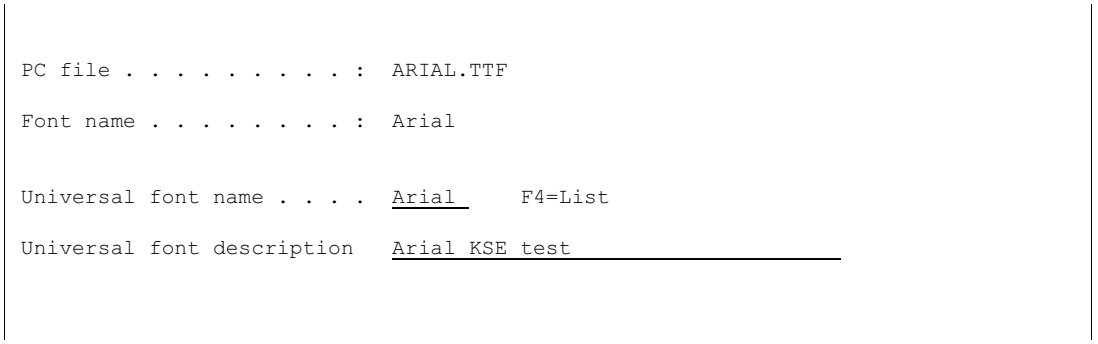
You can use option **9=Where used** to display a list of all overlays, that are using one of the related font numbers for a universal font.

If e.g. InterForm400 refuse to delete a universal font with the message:
Universal font in use. Use the where used option to find out where.
- then you can use option 9=Where used to identify the involved overlays, and even the line numbers in the overlay, where the fonts are used.

To install a new soft font (True Type Font), you press F6=Create:



Here you can press F4 to select the TTF file with '1' or type the name of the file. Press Enter to proceed:



Please note, that there are only 6 characters available for the universal font name. That limit is necessary as InterForm400 will create multiple soft fonts - one for each ASCII codeset, and each need a unique name. You can press F4 to view the list of fonts already taken. You need to select a (new) name, that is not listed here.

The **description** is retrieved from the soft font, and will be used for both the soft font descriptions and descriptions for the font numbers, that will be created. You can change it now before proceeding. The changed description will be used for the font numbers.

When you hit Enter, InterForm400 will find list the possible font ranges (a complete font range xx00-xx99 must be free for both PCL/PDF and Label/Zebra file sets in order to be listed):

```
         Available intervals for universal font numbers              FNT357D

Select font interval to be used for new universal font.

  1=Select
Opt      Interval
 _       59nn
 _       65nn
 _       68nn
 _       69nn
 _       72nn
 _       73nn
 _       74nn
 _       75nn
 _       76nn
 _       77nn
 _       78nn
 _       79nn
 _       81nn
 _       83nn                                                            +

F3=Exit                                                  F12=Cancel
```

Select the font range, that you want to use with '1=Select' and press Enter.

Now InterForm400 lists the font sizes, that will be created. You can edit this list, if needed:

```
         Define sizes for universal font                             FNT358D


  2=Change   4=Delete
Opt    Fontnbr     Height   Description
 _      9704          4,00   Arial KSE test  4 Pt
 _      9705          5,50   Arial KSE test 5.50 Pt
 _      9706          6,00   Arial KSE test  6 Pt
 _      9708          7,92   Arial KSE test  8 Pt
 _      9710         10,08   Arial KSE test 10 Pt
 _      9712         12,00   Arial KSE test 12 Pt
 _      9713         12,96   Arial KSE test 13 Pt
 _      9714         13,92   Arial KSE test 14 Pt
 _      9715         15,12   Arial KSE test 15 Pt
 _      9716         16,08   Arial KSE test 16 Pt
 _      9717         17,04   Arial KSE test 17 Pt
 _      9718         18,00   Arial KSE test 18 Pt
 _      9719         18,96   Arial KSE test 19 Pt                        +

Press F3 or F12 to leave creation of universal font.
Press F16 to accept sizes and continue creating universal font.

F3=Exit                              F6=Add              F12=Cancel
```

The size of the fonts are rounded to the nearest 0.24 point, to ensure the same size in both PCL and PDF. As default the font numbers are named xxyy, where:

xx is the font range selected earlier.
yy is the size of the font.

The size is as default also included as a part of the description, but you can change the descriptions with 2=Change.

You can delete one or more of the suggested font numbers with option 4=Delete and create additional font numbers with F6=Create.

When/if you are happy with the settings, you can start the process, that creates all the soft fonts, font numbers and auto download specification by pressing **F16**. Have patience as this is a longer running function.

You can also abandon the process now with **F3** or **F12**.

The result

After adding a new universal soft font like described above, the font numbers are immediately available for use in any codepage in any kind of output in InterForm400.

After creating the new universal font, you will see these changes:

- The input soft font has been installed for all supported ASCII codesets, where the last 3 characters indicate the ASCII codeset e.g.:
  ARIALAR Arial Arabic
  ARIALBA Arial Baltic
  ARIALCE Arial Central Europe
  ARIALCEE Arial Central Europe with Euro
  ARIALCY Arial Cyrilic
  ARIALCYE Arial Cyrilic with Euro
  ARIALGR Arial Greek
  ARIALTY Arial Turkey
  ARIALWE Arial Western
  ARIALWEE Arial Western with Euro
  ARIALX Arial Unicode

- The soft fonts above have been installed for PCL, PDF and for Label file sets.
- The font numbers have been created with the requested descriptions:
  9704 Arial KSE test 4 Pt
  9705 Arial KSE test 5.50 Pt
  9706 Arial KSE test 6 Pt
  9708 Arial KSE test 8 Pt
  Etc..

- The auto download configuration has been prepared, so that all the font numbers are linked with all the soft fonts created - for the PCL,PDF printer groups:

```
          Soft Fonts to be downloaded automatic                    PGR330D

Printer group name . . . :  *PCL

Start with . . . . . .  _____

Type option, Press Enter.
  2=Update   4=Delete

Opt  Font number  Symbol set                Font member
        9704      Greek                     ARIALAR
        9704      UCS2 unicode              ARIAL
        9704      Roman-8                   ARIALWE
        9704      PC-8                      ARIALCE
        9704      Western w/o Euro          ARIALBA
        9704      Central Europe w/o Euro   ARIALWEE
        9704      Baltic                    ARIALCY
        9704      Western with Euro         ARIALCYE
        9704      Cyrillic w/o Euro         ARIALTY
        9704      Cyrillic with Euro        ARIALGR
        9704      Turkish                   ARIALCEE
                                                                  More...
F3=Exit            F5=Refresh          F6=Add             F12=Cancel
```

```
         Soft Fonts to be downloaded automatic                          PGR330D

Printer group name . . . :  *PDF

Start with . . . . . .

Type option, Press Enter.
  2=Update   4=Delete

Opt  Font number  Symbol set               Font member      Font embedding
        9704      UCS2 unicode               ARIALX           *ALLWAYS
        9704      Western                    ARIALXWE         *ALLWAYS
        9704      Central European           ARIALXCE         *ALLWAYS
        9704      Baltic                     ARIALXBA         *ALLWAYS
        9704      Turkish                    ARIALXTY         *ALLWAYS
        9704      Cyrillic                   ARIALXCY         *ALLWAYS
        9704      Greek                      ARIALXGR         *ALLWAYS
        9704      Arabic                     ARIALXAR         *ALLWAYS
        9704      Hebrew                     ARIALXHE         *ALLWAYS
        9705      UCS2 unicode               ARIALX           *ALLWAYS
        9705      Western                    ARIALXWE         *ALLWAYS
                                                                    More...
F3=Exit            F5=Refresh          F6=Add              F12=Cancel
```

- The Label/Zebra fonts created are also linked with the installed Label soft fonts:

  Soft fonts:

ARIALAR	Arabic	TrueType Arial
ARIALBA	Baltic	TrueType Arial
ARIALCE	Central European	TrueType Arial
ARIALCY	Cyrillic	TrueType Arial
ARIALGR	Greek	TrueType Arial
ARIALHE	Hebrew	TrueType Arial
ARIALTY	Turkish	TrueType Arial
ARIALWE	Western	TrueType Arial

  The soft fonts are linked to each font number:

```
         Change zebra font                                              ZEB370D

Font  . . . . . :  9704  Other fonts

Description . . . . . .  Arial KSE test  4 Pt

Height  . . . . . .  _4,00  1,00-792,00
Relative width  . . . . .  1,00    0,20-5,00
Replace 0 with Ø  . . . . .  _       0 = No, 1 = Yes
Special EBCDIC codepage . .  _____

Soft font member name per symbolset                Note:
  Western . . . . . .  ARIALWE___             Intermec printers does
  Central European  . . . .  ARIALCE___       not support relative
  Baltic  . . . . . .  ARIALBA___             width.
  Turkish . . . . . .  ARIALTY___
  Cyrillic  . . . . . .  ARIALCY___
  Greek . . . . . .  ARIALGR___
  Arabic  . . . . . .  ARIALAR___
  Hebrew  . . . . . .  ARIALHE___
  Special . . . . . .  _____
  UCS2 unicode  . . . . . .  ARIALX___
F3=Exit   F4=Prompt   F12=Cancel
```

4. Work with soft fonts for PCL

This function gives you the possibility to work with soft fonts, create soft fonts from TTF files and to download soft fonts to printers.

```
         Work with PCL Soft Fonts                                    FNT310D

Position to . . . . . .   __________   Font member name

Type options, press Enter.
  2=Change   4=Delete   5=Display   6=Print   8=Dsp. attributes   9=Download

Opt   Member      Font description
 _    TTFFONT     TrueType TTFFONT
 _    BARCODE39   Code 39,  HPIII      7.69CPI  72.0 Heigh
 _    BAR128      Code 128, Portrait   9.09CPI  72.0 Heigh
 _    CODE128     Code 128, Portrait   9.09CPI  48.0 Heigh
 _    CODE128_0   Code 128, Portrait   6.81CPI  42.48Heigh
 _    CODE39      Code 39,  Portrait   5.76CPI  48.0 Heigh
 _    EAN8_MICRO  EAN 8/13, UPC-A, PCL5      14.28CPI  41.76Heigh
 _    EAN8JJ      EAN 8/13, UPC-A, Portrait  10.71CPI  79.68Heigh
 _    FONT2501    Interleaved 2 of 5, HPIII      4.68CPI  32.4 Heigh
 _    IF_OCRA     OCRA             PC-850
 _    IF_OCRAEXT  OCR A Extended   PC-850
 _    IF_OCRB     InterForm 400 - OCRB portrait
 _    IF_OCRB_L   InterForm 400 - OCRB landscape
                                                                   More...
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Here you can specify :

2=Change:
The description of a soft font can be changed. You cannot change the size of the barcode here - even though it might seem so!

4=Delete:
Delete a soft font. This will also delete the corresponding member from the apf3812/font file. Note that you cannot delete a soft font, if it is specified to be auto downloaded.

5=Display:
Displays a soft font. This will prompt you for what code page to use, and then open up the PCL Viewer, SwiftView on a PC showing a sample of the soft font. Note, that the current version of SwiftView does not support True Type Fonts.

6=Print:
Prints out a sample of the soft font. You are prompted for which code page, output queue and form type to use.

8=Dsp. Attributes:
Shows the attributes of the soft font e.g. pitch and height. For True Type Fonts it will also show you the type face used. The type face should be referred to, when creating font numbers using this soft font.

9=Download:

This function gives you the possibility of downloading soft fonts to HP-printers or printers emulating a HP-printer via System i spool entries.

The following screen is shown:

```
         Create spool entry to download of soft font                FNT700D


Font member  . . . . . .  __________

Font-id  . . . . . .  . .          (0001-9999)

Description:              __________

Place into Flash Memory . .   _    0 = No
                                   1 = HP Flash memory option
                                   2 = Lexmark Flash memory option
                                   3 = File system for HP5, HP4000 ..




F3=Exit      F4 = Prompt
```

Font member: Type the file member name from the APF3812/FONT file in the field Font member.

Font-id: Must be given a number in the interval 0001-9999. It is used to manage more than one soft font in the printer simultaneously. I.e. if you download a font with an ID that is already used by another down loaded font in the printer, it is replaced with the new font. Otherwise there are no restrictions to the id-number.

Description: The text you enter in this field is used as user data on the spool entry that is output from this program.

Place into flash memory: This feature works on any HP laser printer or Lexmark laser printer (4039 and Optra) equipped with an optional Flash SIMM module or Harddisk (contact your local printer supplier for further information). When using this method the font will not disappear when powering off the printer.

Output from this program is a spool entry with HOLD(*YES) and SAVE(*YES).

Every time you want to download the font to the printer, all you have to do is to release the spool entry. The font will then be available on the printer until the printer is switched off or cleared from the printer's operator panel, unless your printer is equipped with a flash card and Place Into Flash memory has been filled in.

In order to select the soft font from an overlay is has to be described to the system in 1. Description of additional fonts (page 360).

Import a True Type Font

From the **Work with PCL Soft Fonts** menu you can also import a True Type Font uploaded from a PC to the /APF3812Home/Work directory in the IFS.

If you press **F6-Create**, you get this screen:

```
        Install TrueType font to PCL from /APF3812Home/Work            FNT431D

Document name . . . . . . .  ____________    F4=List









F3=Exit                                                    F12=Cancel
```

Now you can either specify the name of the uploaded TTF file or press **F4** to get an overview of all files in the /APF3812Home/Work directory, and then select the TTF file.

Press Enter and this screen is presented:

```
        Install TrueType font to PCL from /APF3812Home/Work          FNT431D

PC file . . . . . . . . . :  arial.ttf

Font name . . . . . . . . :  Arial

Font name PCL . . . . . . .  Arial

Symbol set  . . . . . . . .  2             1 = Western w/o Euro
                                           2 = Central Europe w/o Euro
                                           3 = Baltic
                                           4 = Western with Euro
                                           5 = Cyrillic w/o Euro
                                           6 = Cyrillic with Euro
                                           7 = Turkish
                                           8 = Greek
                                           9 = Central Europe with Euro
                                           A = Arabic

Member name in FONT file  .  ARIAL870      F4=List


F3=Exit                                                    F12=Cancel
```

Here you fill in the symbol set, a type face and a member name for the FONT file. Use **1=Western w/o Euro** as default (used for e.g. EBCDIC codepages 37, 273, 277 etc.). Use **2=Central Europe w/o Euro** if you intend to use the font for the **codepage 870** and use **4=Western with Euro** if you intend to use it for a western europe euro codepage (EBCDIC codepages in the range 1140 - 1164), .

💣 WARNING 💣

Note, that the type face specified should not be the same as any type face of the resident fonts on the printer. In order to avoid this, it is recommended to use type faces with the number 32768 or above.

Finally specify what to call the soft font. This is the same as the member name. Before you can use the soft font you need to create font number (Refer to page 360) that fits the soft font attributes and specify autodownload of the soft font. (Refer to page 374 for information of autodownload.)

☺ **TIP** ☺

Use of an imported True Type Font requires that a font number with the same type face is created, and that the font file member corresponding to the font number is specified to be automatic downloaded.

File transfer HP SFP Font files from a PC

If you have HP PCL fonts in the DOS format *.SFP these can be file transferred to InterForm400® as they are.

The file on the System i to receive the PC-file is: APF3812/FONT

The SFP file is stored as a file member in this file. The rules for the file transfer is the same as described in the previous section.

5. Install True Type font for PDF

This option enables you to install a True Type Font to be used in PDF output.

```
         Install TrueType font for PDF from /APF3812Home/Work        FNT451D

Document name . . . . . :  PDFFONT.TTF

Font name . . . . . :  True Type Font for PDF


Member name PDF font file .  __________    F4=List
```

F3=Exit F12=Cancel

First specify the document name to be installed i.e. the name of the TTF file in the /APF3812Home/Work directory. Press F4 to see available documents. Select with option 1.

Enter a member name to contain the soft font. After pressing **Enter** the soft font can be referred to in option **8. Auto download soft fonts**, where you have to add the soft font and a connected font number to the printer group *PDF. The font number is created by using option **1. Description of additional fonts**.

☺ **TIP** ☺

*Even if you upload a bold and/or italic True Type Font you still have to specify bold and/or italic when defining font numbers using this soft font in **1. Description of additional fonts**.*

6. Work with TrueType font for UCS2 (unicode)

If you want to merge overlays with unicode spooled files you also need to install at least one unicode true type font.

The TTF files you install here does not need to be unicode. It will of course only be possible to print/output in the characters included in the soft font. Most fairly new TTF files will include as good as any character in SBCS (Single Byte Character Set) code pages.

To print DBCS (Double byte Character Set) characters you will normally need a real unicode TTF font.

To install a TTF font place the ttf file in the IFS inside: /APF3812Home/Work and press F6, then press F4 to select the TTF file or type the name in the screen below:

```
          Install TrueType font for UCS2 from /APF3812Home/Work          FNT355D

Document name . . . . . : FONT.TTF

Font name . . . . . : Font name


UCS2 font name  . . . . . Font           F4=List

UCS2 font description . . . Arial









F3=Exit                                                    F12=Cancel
```

The screen now asks for a UCS2 font name. You can press F4 for that to view the font names already used. This is the name you refer to later for auto download. Refer to page 374 for setup of auto download.

Use 5=Display to view the layout of a installed font:

```
         Display TrueType font for UCS2 (unicode)                  FNT360D

Font name       FONT       Font

Position to . . . . . ____   Unicode character in hex

Character   Description
  1E80                                                          477  1933
  1E81                                                          478  1479
  1E82                                                          479  1933
  1E83                                                          480  1479
  1E84                                                          481  1933
  1E85                                                          482  1479
  1EA0                                                         1188  1366
  1EA1                                                         1189  1139
  1EA2                                                         1190  1366
  1EA3                                                         1191  1139
  1EA4                                                         1192  1366
  1EA5                                                         1193  1139
  1EA6                                                         1194  1366

                                                                       More...
F3=Exit                                                F12=Cancel
```

In order to use the installed unicode font you need to link the soft font with one or more font numbers. That is done via option **8. Auto download soft fonts**.

8. Auto download Soft Fonts

This menu enables you to create groups of printers and fonts which should have ordinary soft fonts and bar code soft fonts downloaded automatically when the font numbers are addressed in an overlay.

Auto download for PCL soft fonts

The printers are defined for auto download according to their System i printer queue names.

The soft fonts will be downloaded as temporary fonts in the beginning of a spool entry and deleted after the job is printed.

It is recommended to keep the amount and size of downloaded fonts to a minimum in order to reduce the traffic on the network and the workload on the System i.

For each printer group you define a number of printer queues and a number of fonts to be downloaded automatically. For PCL is it recommended to create only 1 printer group and add the output queue ***ALLPCL** via option **6=Update output queues**. Only PCL printer groups with *ALLPCL can be exported/imported. Refer to **Appendix P** on page 627 for details about export/import.

> **WARNING**
>
> *The queue you define for automatic download must be the one with the physical printer device attached. I.e. when using Auto Forms Control the Auto download queue is the AFC output queue, not the AFC input queue.*

Refer to section **Getting familiar with soft-fonts and barcodes** and page 391, **Define auto download of fonts** for an example of how to define the underlying menus.

Please note this, when adding printers to a printer group: You can specify either of these values instead of an output queue:

***ALLPCL**: Download the soft fonts in a printer group (if used) to any printer or file (if merging to *OUTDOC with the command APF3812/APF3812). Use this if in doubt.

***OUTDOC**: Download the soft fonts in a printer group (if used) to all files, if merging to *OUTDOC with the command, APF3812/APF3812.

```
          Work with auto download soft fonts                        PGR300

Start with . . . . . .   __________

Type option, press Enter
  2=Change  3=Copy  4=Delete   6=Update output queue 8=Update fonts

 Opt     Printer group   Description
  _       *PDF           Output to PDF files
  _       *PCL           All PCL output (*ALLPCL)









F3=exit         F5=Refresh            F6=Add              F12=Cancel
```

In order to select the soft font from an overlay, it has to be described to the system in **1. Description of additional fonts** (page 360).

Auto Download for PDF output

If it is required to use True Type Fonts in PDF output, the TTF file has to be installed by using option **5. Work with TrueType font for PDF**. Following you can specify, if a certain font number is used when creating PDF output, then a specific PDF soft font member should be used.
You add a new font to be used in PDF, by using option **8-Update fonts**. If you then press **F6** to add a new font, you get the screen below:

```
         Add Auto download Soft Font                                PGR332D

Printer group name . . . :  *PDF

Font number  . . . . . .  ____        F4=List
Symbol set number  . . . .  _         1 = Western
                                      2 = Central European
                                      3 = Baltic
                                      4 = Turkish
                                      5 = Cyrillic
                                      6 = Greek
                                      7 = Arabic
                                      8 = Hebrew
                                      U = UCS2 unicode

Font member name 0°  . . .  __________  F4=List

When to embed font . . . .  *ALWAYS___  *ALWAYS *PRI *SEC *NEVER


F3=Exit             F4=Prompt                          F12=Cancel
```

The font number must have the same characteristics as the soft font (bold, italic, condenced, proportional/fixed). With '**When to embed font**' you can state when you want to download the font. ***PRI** will download the soft font only when you do a primary merge and ***SEC** will download the soft font only when you do a secondary merge.

In this manner you can include the soft font only in PDF files, where it is needed and save the space if the soft font is already installed on the PC's that are to open the PDF files.

> ☺ **TIP** ☺
> *Even though the same font member can not be used for both PCL and PDF output, you can associate one font number to a PCL font member and a PDF font member. Therefore if you install a TTF as a PCL font member and a PDF font member you can get the same output on both PDF and PCL using one font number.*

Auto Download for InterWord400 PDF output

If you use InterWord400 and you want to use soft fonts for the PDF output you need to install the soft fonts in InterForm400 (and InterWord400) and setup auto download for this printer group via option **8=Update fonts** for the ***IWPDF** printer group:

```
         Soft Fonts to be downloaded automatic                        PGR330D

Printer group name . . . :  *IWPDF

Start with . . . . . .

Type option, Press Enter.
  2=Update   4=Delete

Opt   IW-fontnbr       Symbol set         Number of fonts      Font embedding
 _       9999          1 Western               4               *ALWAYS









                                                                        End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

Press F6 to add new soft fonts to the list:

```
         Add Auto download Soft Font                                  PGR332D

Printer group name . . . :  *IWPDF

InterWord font number  . .  9998        F4=List
Symbol set number  . . . .  1           1 = Western
                                        2 = Central European









Font member normal . . . .  FONT_NM     F4=List
Font member bold . . . . .  FONT_BD     F4=List
Font member italic . . . .  FONT_IT
Font member bold italic  .  FONT_BD_IT
When to embed font . . . .  *ALWAYS     *ALWAYS *PRI *SEC *NEVER


F3=Exit             F4=Prompt                           F12=Cancel
```

InterForm400® Predefined Soft Fonts

Besides the predefined fonts ID's which selects resident fonts in the printer, InterForm400® includes some pre-defined softfonts.

MICR Soft Font (Font ID 3998)

The MICR E-13B font is used for check printing in USA, and exist per definition only in one size.

The font include the decimal digits 0-9 plus four special characters. The fours characters will be printed when the following characters is included in the text:

A=Amount symbol
D=Dash symbol
O=On us symbol
T=Transit symbol

It is therefore predefined in InterForm400® and does not need to be generated.

It can be used immediately by Remap Window, a Tabulator and Text constant commands within the overlay design window by selection of font ID **3998**. The font will to the user function as a resident printer font.

InterForm400® will automatically add start and stop codes and check digits.

OCRA Soft Fonts

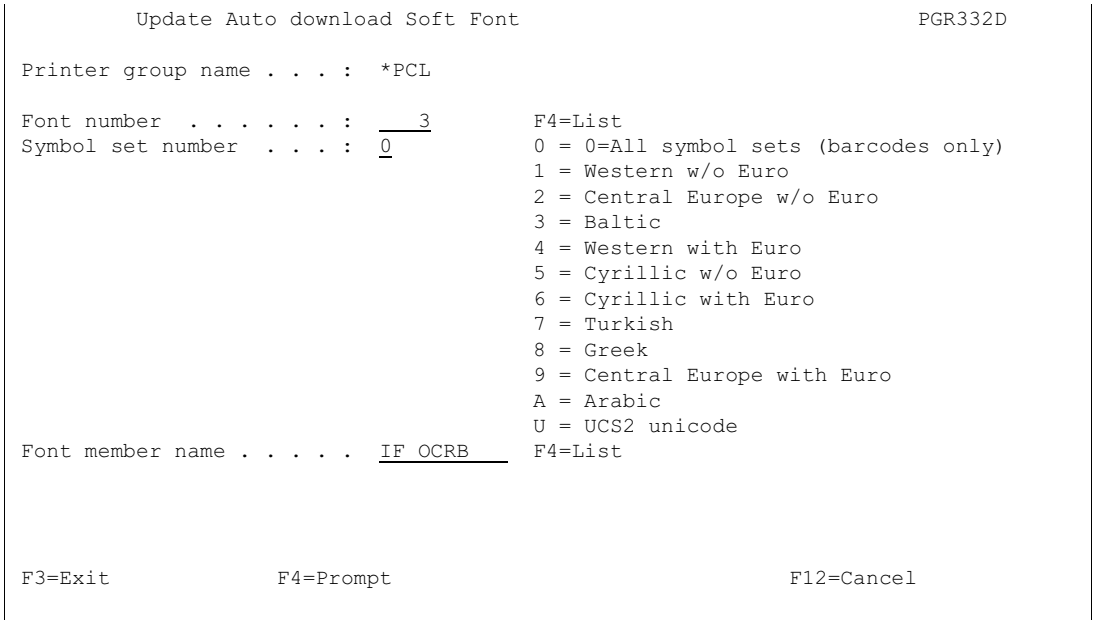
Two soft fonts, **IF_OCRA** and **IF_OCRAEXT** are distributed with InterForm400®. IF_OCRA is BMP based and IF_OCRAEXT is based on a True Type Font. IF_OCRAEXT contains some extra characters compared to IF_OCRA. Font number **19** is intended to be used with these soft fonts. Remember to specify (automatic) download the soft font in option 3 of the fonts menu.

OCRB Soft Font (Font ID 0003)

OCRB is predefined in InterForm400® with font ID 3, but the soft font is not automatically downloaded to the printer when selected. The font will need to be downloaded to the printer according to the description on page 374 (8. Auto Download Soft Fonts).

Two font members **IF_OCRB** and **IF_OCRB_L** represent the OCR-B in portrait and landscape. PCL5 printers will automatically rotate a soft font, so you should just select IF_OCRB.

The selection field when adding the OCRB font to an Auto Font Download definition should for an PCL5e compatible printer always state font number 3:



The selection of Symbol set should be 0 to enable this for any code page.

The section **Getting Familiar with Soft-fonts and Barcodes** includes download of the OCRB font.

Barcode Support

InterForm400® currently support generation of the following barcodes in any size:

- Interleaved 2 of 5,
- Code 128
- Code 39
- Code 39 Extended
- EAN128
- GS1-128
- Postnet
- EAN13
- EAN8
- PDF417
- UPC-A
- QR Bar Code - Model 2
- Data Matrix Bar Code - ECC200
- GS1 / RSS-14
- USPS Inteligent Mail Barcodes
- Aztec (for ZPLII only)

The barcodes created by InterForm400® are automatically stored as members in the physical file **APF3812/FONT**.

When printing a bar code, it appears to be placed a little to the right of the specified location. It is because the start code is as wide as 2 digits and has the two thin lines that form the start code placed in the right side of the symbol.

If you want a number to appear below the bar code you must specify your overlay definition to read the number from the data with a 9=Remap Window and place it on the desired position.

USPS Intelligent Mail Barcode, MICR E-13B and POSTNET

The barcodes USPS (United States Postal Service) Intelligent Mail barcode, the MICR E13-B (Magnetic Character Recognition) font and the POSTNET barcode are all predefined in InterForm400. So if you want to use them you just refer to the specific font number when you want to present text as this relevant barcode in the output. The specific font numbers are:

Barcode/Font	**Font number for PCL/PDF**	**Font number for ZPL/IPL**
USPS	3997	1999
MICR E-13B	3998	N/A
POSTNET	3999	N/A
UPS MaxiCode Bar Code	N/A	1998

Setup of two-dimensional and GS1 / RSS-14 barcodes

InterForm400 supports the two-dimensional barcodes: PDF417, QR Bar Code - Model 2 and Data Matrix Bar Code - ECC200.

The two-dimensional and GS1 barcodes differ from the other barcodes supported (when we are considering PCL output) in the ease of which you can define them. If you want to define a two-dimensional barcode (for PCL or PDF output) you simply create a new font number via this selection (from the InterForm400 main menu):
80. Administering InterForm 400, then **4. Work with fonts** and **1. Description of additional fonts** and press F6 to create a new font number.

Barcodes in PDF output

All the barcodes in InterForm400 are also supported for PDF output. Note however that there is a difference to the way that the barcodes for PDF are generated compared to PCL output:

The barcodes appearance in PCL output are based on the soft font only. The appearance in PDF output is based on the specifications in the used font number. Normally that will not be a problem, but if you manually have created the font number you should make sure, that the pitch and height of the font number are exactly the same as stated in the description of the barcode soft font.

Barcodes in ZPL output

It is very easy to define barcodes that are to be used for ZPL output (supported by Zebra printers). You do not need any soft font and simply create a new font number via option **11. Description of ZEBRA fonts** on the font menu. When defining the height of a ZPL barcode the height is stated in the measurement 1/72 inch i.e. a height of 72 equals 1 inch.

The Aztec barcode (ZPLII output only)

Aztec barcodes can be created for Zebra (ZPLII) output only. Such font numbers must be defined in the 40xx range (via option 11. Description of ZEBRA fonts).

```
         Change zebra font                                          ZEB370D

Font  . . . . . . . . . . . :  4000  Other barcodes

Barcode type  . . . . . . . :        Aztec
Note: Aztec is not supported on Intermec printers.
Description . . . . . . . . .  Aztec size 4/6

Symbol element size in dots
  ZEBRA203  . . . . . . . . .  _6    (1-10)
  ZEBRA300  . . . . . . . . .  _4    (1-10)

Error correction / format :   _0   0        default 23 % error correction
                                   1-99     % error correction minimum
                                   101-104  1 to 4 layer compact symbol
                                   201-232  1 to 32 layer full range symbol
                                   300      a simple Aztec "Rune"

Line separator  . . . . . .  _4    1=A blank, 2=CR, 3=CRLF, 4=None,
                                   5=Fixed, 6=Fixed (trim last line)

Hex byte prefix . . . . . .  _^    Blank=Input does not contain hex bytes
F3=Exit   F12=Cancel
```

The line separator and Hex byte prefix are explained for the PDF417 barcode on page 383.

Support for UPS MaxiCode

The UPS MaxiCode is supported for Zebra and Intermec printers.
The font number for UPS Maxi code is 1998. There is only one definition for this barcode, so it is not possible to change anything in the font definition.

There are 5 modes the barcode:
2 - Structured Carier Message with numeric postal code 9 digits (USA)
3 - Structured Carier Message alphanumeric postal code (Non USA) 6 characters
4 - Standard Symbol
5 - Full EEC
6 - Reader Programming

Font number 1998 can be used with remap window, with tabulators and with text constants. The text must start with the mode number followed by a colon. After that the message to be in the barcode.

For mode 2 and 3, there are very strict rules for the beginning of the message called ”high priority message”
In mode 2 the the high priority message begins with a 9 digit postal code, then a 3 digit contry code (840 for USA), and now a 3 digit class of service code.

In mode 3 the high priority message must start with a 6 character postal code (truncated to 6 if longer, padded with blanks if shorter), then a 3 digit contry code followed by a 3 digit class of service.

For mode 2 and 3 the high priority message is followed by a ”low priority message”, normally starting with [)> (there is a description of the low priority message available from UPS).

For mode 4 – 6 there is no division between high and low priority message, whatever data you send will be encoded.
In all modes there will be control characters outside the printable area. They has to be entered like this <GS> for group seperator with hex value X'1D'. The following values can be used:

<NUL> null
<SOH> start of heading
<STX> start of text
<ETX> end of text
<EOT> end of transmision
<ENQ> enquiry
<ACK> acknowledge
<BEL> bell
<BS> backspace
<HT> horizontal tabulation
<LF> line feed
<FF> form feed
<CR> carriage return
<SO> shift out
<SI> shift in
<DLE> data link escape
<DC1> device control 1 or X-ON

Calculating barcode height

The height of the font is entered in dots (1/300 of an inch). The following relations will assist you when entering the barcode height in dots.

Inches and dots: 1 inch(240 pels) = 300 dots

Centimeters and dots: 1 cm(95 pels) = 118 dots

Create barcode fonts

The barcodes are created like any other font number via option **1. Description of additional fonts** on the font menu for PCL and PDF output and option **11. Description of ZEBRA fonts** for ZPLII and IPL output. The barcode fonts are restricted to specific ranges of numbers.

Regarding PCL output: The line barcodes (Code39, Code128 and Interleaved 2 of 5) are defined in 600 DPI (Dots Per Inch). If you however stick to an even number of dots, then the

barcodes are generated in 300 DPI, which is necessary if you are printing on older printers. If a 600 DPI barcode is sent to a 300 DPI printer, then the barcode will be printed as a black box.

1. Code 39

This bar-code can consist of the alphanumeric characters 0-9, A-Z (Capital letters) and some special characters (e.g. * $ / + - . %). You can define if a Checksum should be calculated and if unrecognized (or unprintable) characters should be replaced with blanks.

Extended code 39

The extended code 39 is a general purpose code which can code any ASCII character(any character you can enter from the keyboard by normal means). This code is double the size of the standard code 39, as it uses two code 39 characters for each of the 128 ASCII characters. To enable extended code 39, enter **YES** for **Full ASCII mode**.

2. Code 128, EAN-128 and GS1-128

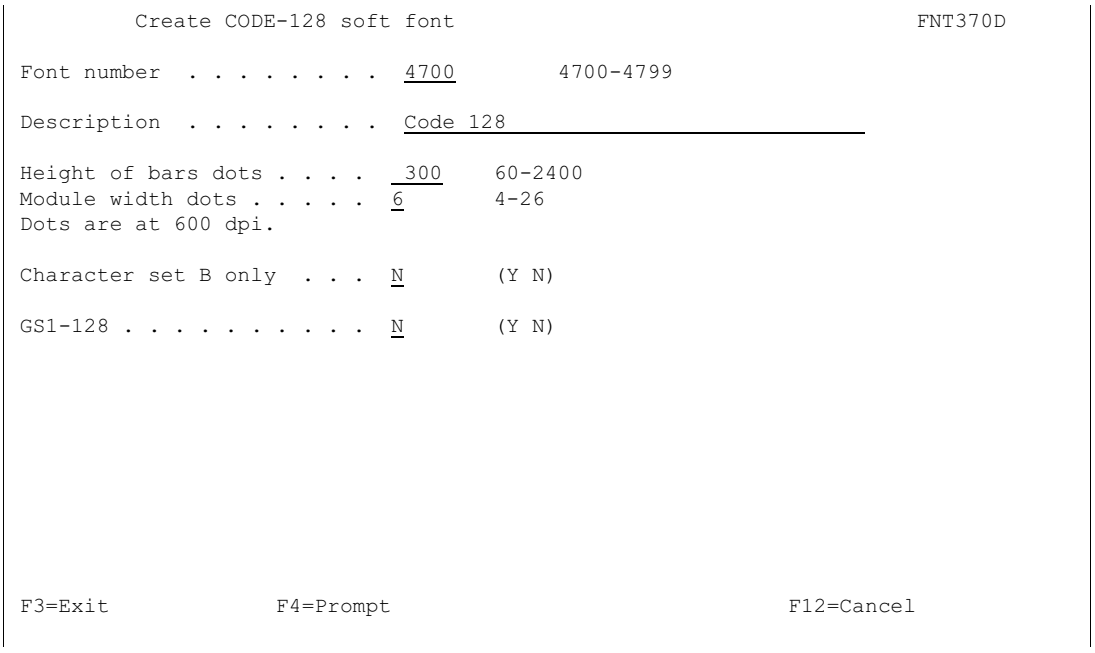
These barcodes can consist of all alphanumeric characters.

You are asked wether the barcode should be written as ‘character set B only’. Normally InterForm400 will use character set A, B and C in order to compress the barcode as much as possible. However VERY few barcode scanners cannot read character set C (compressed numeric characters). For those scanners you should state ‘Y’. Use ‘N’ for all other scanners in order to make the barcode as efficient as possible. For a description of character sets A,B and C refer to the documentation of your scanner.

If you need to insert the character **FNC1** in the Code128 barcode you should insert the character '**|**' (with the hexadecimal value **BB** in EBCDIC) in the text, that you convert into the barcode.

The FNC1 character is needed in the GS1-128 (EAN-128), but you only need to insert it as a delimiter for fields, that can vary in length. You do e.g. not need to insert FNC1 as the first character of a GS1-128 barcode.

When you create the code128 barcode for PCL and PDF output you will see this screen:



Notice, that the height and width for the Code128 barcode is measured in 600 dpi.

Refer to section **assigning font ID’s to barcode soft fonts** page **?** for details on how to define wether the barcode should be printed as Code128 or EAN128 (GS1-128).

3. Interleaved 2 of 5 and ITF-14

This bar-code consists of the digits 0-9 only. There can be blanks before or after the digits if the figure contains an odd number of digits, the system will add a preceding zero. The system also adds start and stop codes before and after the number.

If you try to use Interleaved 2 of 5 with non-numeric data, the contents will be printed with IBM font-id 0011 (10 pitch courier).

> **NOTE**
>
> The Interleaved 2 of 5 barcode must consist of an even number of digits. If you activate the checksum digit, then InterForm400 might insert a '0' in front of the checksum digit, if necessary to have an even number of digits.

ITF-14 Barcodes should be defined as an interleaved 2 of 5 barcode - except you need to add a box around the edges of the barcode. The size of ITF-14 barcode is fixed, so once you have setup the size of the barcode itself (with a valid sample input), you can adapt the box to the size of the barcode.

4. EAN8, EAN13 and UPC-A

When a character string contains 8 digits, it will be printed as EAN8. A character string of 13 digits will be printed with EAN13 and 12 digits will be printed as UPC-A.
Using these barcodes with a number of characters other than 8, 12 or 13 or with non-numeric data results in no barcode to be printed. This barcode also supports texts, that ends with '-' followed by 2 or 5 digits. For PCL/PDF there is a **checksum** field. Activate this if you want InterForm400 to add the checksum digit.

Postnet Barcode

The Postnet barcode exists, per definition, only in one size. It is therefore predefined in InterForm400® and does not need to be generated.

It can be used immediately by Remap Window, a Tabulator and Text constant commands within the overlay design window by selection of font ID **3999**. The font will to the user function as a resident printer font.
InterForm400® will automatically add start and stop codes and check digits.

Generel Information for 2D barcodes

This is a two dimensional barcode widely used in e.g. the automotive industry. No soft font is used for this barcode, which means it is not required to auto download the font. The barcode is solely defined as a font number in the option **1. Description of additional fonts**. The 2D barcodes can only be used for the remap function in design overlay.

Line separator
With this you can state how line breaks of the spooled file text should be handled:

1=A Blank: Any trailing blanks of any line is trimmed and a space/blank is added for each line break.
2=CR: Like 1=A Blank except a Carriage Return (Hex 13) is added for each line break.
3=CRLF Like 2=CR except that both Carriage return and a Line Feed (Hex 0A) is added.
4=NONE: Any trailing blanks of any line is trimmed and the line breaks are not reflected in the scanned result.
5=Fixed: Any trailing blanks of each spooled file line are also included in the barcode.
6=Fixed (trim last line):
All trailing blanks of all lines are also included in the barcode, except for the last line of the remap, where the trailing blanks are trimmed.

Hex byte prefix
This parameter has been included in order to make it possible to insert specific ASCII characters specified by the hexadecimal value. State a special character here and when this is

found in the text to be printed as PDF417 barcode the next two characters are interpreted as the hexadecimal value for the ASCII character to be inserted instead. If you e.g. use ‘]’ as the escape code character, the text ‘]0A’ will be printed as the ASCII character having the hexadecimal value <0A>. This option make it possible to print PDF417 barcodes for e.g. the GM-1724-A/B/C Label standard used in the automotive industry.

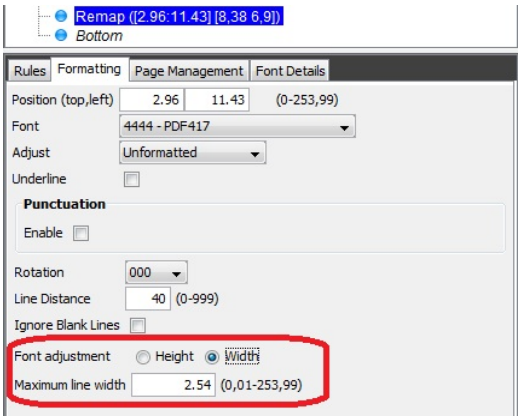
PDF417 barcodes

The PDF417 barcodes are created as a font number (via options: 80. Administering InterForm400, 4. Work with fonts, 1. Description of additional fonts) as font numbers with a number in the 44xx range.

When using a PDF417 barcode in overlay design, you will be prompted for the maximum width of the barcode.

When you create a PDF417 font number (range 4400-4499) you are prompted for these parameters (apart from the parameters specifying the actual size and security level):

You use the PDF417 font number by remapping a window of text. When you specify a PDF417 font number you are prompted for a ‘Maximum line width’ and ‘Maximum line height’. You are expected to specify only one of them. Normally you would probably use a **maximum line width** and let the height vary with the variable amount of characters to be converted, but a **maximum line height** has been added to meet requirements of the automotive industry:



Datamatrix barcodes

Refer to the generel information of 2D barcodes on page 383.

Size of a Datamatrix barcode

The size of the datamatrix barcodes are setup in 300 DPI (Dots Per Inch) for PCL/PDF file sets, and in the printer resolution for label file sets (ZPL and DP).
In 300 DPI a dot is 1/300 inches= 0.003333 inches = 0.008466 cm.
In 203 DPI a dot is 1/203 inches= 0.004926 inches = 0.012512 cm.

The module size sets the size of each small dot/box in the datamatrix barcode. The final size of the module (or box) is the number of dots selected times the size of a single dot.

So in 300 DPI a module size of 4 means:
4*0.003333 inches = 0.01333 inches = 0.033866 cm.

The rows to encode and columns to encode can be left blank to create the smallest possible barcode (with the module size selected). You can also set a fixed number of rows and columns in the barcode. The number of rows sets a fixed height and the number of columns sets a fixed width. The number of rows/columns is simply the number of modules (or small boxes) in each direction of the barcode, so if you set the number of rows and columns to 40, then the height and width of the barcode is 40 times the size of a module - as a fixed size.

Notice however: If you set a fixed size of the datamatrix barcode, then the barcode is not a allowed to grow (if needed), and can now contain less information compared to an unlimited barcode (where the number of rows/columns is left blank).

C40 encoding in Datamatrix barcodes
For the Datamatrix barcode (for PCL/PDF output only) you can specifically specify, that the encoding of the data should be in C40 encoding only. This is necessary for special UK Royal Mail barcodes. Normally InterForm400 will automatically switch between encodings in the barcode to reduce the barcode size as much as possible, but with a special setting you can force InterForm400 to use C40 encoding only - as required by UK Royal Mail:

```
         Change font                                                APF370D

Font  . . . . . . . . . . . :  4343  Data Matrix Bar Code - ECC200

Description . . . . . . . .  Datamatrix C40 only

Module size . . . . . . . .   4    1-10

Rows to encode  . . . . . .        8-144, blank=as small as possible
Colums to encode  . . . . .        10-144, blank=as small as possible

Line separator  . . . . . .  4     1=A blank, 2=CR, 3=CRLF, 4=None,
                                   5=Fixed, 6=Fixed (trim last line)

Hex byte prefix . . . . . .  ^     Blank=Input does not contain hex bytes

UCC/EAN . . . . . . . . . .  N     (Y N)

Character set C40 only  . .  Y     (Y N)



F3=Exit   F12=Cancel
```

QR Barcodes

The QR barcodes are created as a font number (via options: 80. Administering InterForm400, 4. Work with fonts, **1. Description of additional fonts** for PCL/PDF or **11. Description of ZEBRA fonts** for label file sets) as font numbers with a number in the 42xx range:

```
         Change font                                                APF370D

Font  . . . . . . . . . . . :  4200  QR Bar Code - Model 2

Description . . . . . . . .  QR size 10

Module size . . . . . . . .  10    1-99

Version . . . . . . . . . .   5    1-40, blank=as small as possible
Error correction level  . .  L     L, M, Q, H

Line separator  . . . . . .  1     1=A blank, 2=CR, 3=CRLF, 4=None,
                                   5=Fixed, 6=Fixed (trim last line)

Hex byte prefix . . . . . .  _     Blank=Input does not contain hex bytes

UCC/EAN . . . . . . . . . .  N     (Y N)



Version 5 has 37 x 37 modules. Max capacity 154 alfanumeric chars.
Height/Width inches 1,23
F3=Exit   F12=Cancel
```

The options are:

Module size
The size of the QR barcodes are setup in 300 DPI (Dots Per Inch) for PCL/PDF file sets, and in the printer resolution for label file sets (ZPL and DP).
In 300 DPI a dot is 1/300 inches= 0.003333 inches = 0.008466 cm.
In 203 DPI a dot is 1/203 inches= 0.004926 inches = 0.012512 cm.

The module size sets the size of each small dot/box in the QR barcode. The final size of the module (or box) is the number of dots selected times the size of a single dot.

So in 300 DPI a module size of 4 means:
4*0.003333 inches = 0.01333 inches = 0.033866 cm.

Version
The versions can be used for setting a specific size of the QR barcode independently of the amount of data, that is inserted. If the version option is blank, the size of the barcode will be as small as possible with the specified module size and the specific input data, that is remapped.

Error correction level
This can be used for setting up how robust the QR barcodes should be when it comes to damages. The levels are listed in order, where L is the lowest error correction level and H is the highest error correction level. The higher the level, the larger the barcode will be.

Line separator and Hex byte prefix
The explanation for these options are listed on page 383 .

UCC/EAN
Option to tell InterForm400 to create UCC/EAN barcodes.

When you enter the specifications of the QR barcode the final size of the barcode is calculated if possible. The limit of supported alphanumeric character is also displayed in the bottom - if known. An example is shown above, where the barcode size is 1.23 Inches in both directions, and the supported alphanumeric characters, that be included in the barcode is 154.

Additional information of the QR barcode can be found here:
http://www.qrcode.com/en/about/version.html

MICR E-13B

This font is normally used for cheque printing. Just insert text or remap windows functions in the overlay using font number 3998.

Example of editing a font ID for Code39 barcode

Code39 can be defined in the font ID interval 4600-4699.

```
        Change Font                                              APF370D

Font  . . . . . . . . . . . :  4622  Code 39 soft fonts

Description . . . . . . . .  Code 39 (2.75 CPI, 96.00 points)

Height of bars dots . . . .   600     30-2400
Width narrow bar dots . . .   6        6-26
Width wide bar dots . . . .   12      12-78
Dots are at 600 dpi.

Checksum  . . . . . . . . .  N        (Y N)

Replace unprintable
with blank  . . . . . . . .  N        (Y N)

Full ASCII mode . . . . . .  N        (Y N)

Print characters
beneath bar code  . . . . .  N     (Y N)


F3=Exit   F12=Cancel
```

Getting Familiar with Soft-fonts and Barcodes

This example will bring us through all the menu items under **4. Work With Fonts**.

At the end of this section we will have made the following:

1. Installed the TrueType Font ARIAL from the PC environment and stored it as a resource (soft font member).
2. Created a Code128 bar code.
3. Created a font number (5001) to be used with the arial soft font.
4. Defined that the OCR-B soft font delivered with InterForm400® is to be downloaded to any printer queue automatically when the font number **3** is used in overlays, and defined that ARIAL soft font is to be downloaded whenever font number 5001 is used.

In order to get the exact result as described in the following it would require you to have a PCL5 compatible printer assigned to printer queue AFC_OUT1.

Step 1. Installing the Arial True Type Font

In the following we install the True Type Font directly from the /APF3812Home/Work directory:
Note: This procedure is describing how to install a TTF file to be used for printing (PCL). If the TTF file is to be used for PDF output, the procedure is different (see page 372).

1. Upload the TTF file to the /APF3812Home/Work directory.
2. From the InterForm400® main menu select option **80. Administering InterForm 400**, **4. Work with fonts** and **4. Work with Soft Fonts for PCL**. Press **F6=Create**.

   This screen is presented:

```
        Install TrueType font to PCL from /APF3812Home/Work            FNT431D

Document name . . . . . . .  ____________    F4=List












F3=Exit                                                     F12=Cancel
```

   You can either write the name of the TTF file to be installed or prompt with F4, to get a list of all files in the /APF3812Home/Work directory. Select the TTF file here with option '**1**'. Press **Enter**.

3. A description is retrieved from the TTF file and displayed as the font name. Following you are prompted for the code page, Type Face number and what to call the font member.

```
         Install TrueType font to PCL from /APF3812Home/Work          FNT431D

PC file . . . . . . . . . :  arial.ttf

Font name . . . . . . . . :  Arial

Font name PCL . . . . . . .  Arial

Symbol set  . . . . . . . .  1             1 = Western w/o Euro
                                           2 = Central Europe w/o Euro
                                           3 = Baltic
                                           4 = Western with Euro
                                           5 = Cyrillic w/o Euro
                                           6 = Cyrillic with Euro
                                           7 = Turkish
                                           8 = Greek
                                           9 = Central Europe with Euro
                                           A = Arabic

Member name in FONT file  .  ARIAL         F4=List


F3=Exit                                                    F12=Cancel
```

Select a symbol set (help can be found on page 369 and onwards) and type a member name for the new soft font. When finished you will return to the **Work with PCL soft fonts** menu. Press **F3** to go back to the **Work with fonts** menu.

Step 2. Creating the Code128 Barcode

1. Select option '4. Work with fonts' in the InterForm400® administration menu and then select '5. Create bar code soft font'. We select **Code 128.**

```
         Create font                                                FNT370D

Font number  . . . . . .  4700        4700-4799

Font height dots . . . . .  80        60-2400
Module width dots  . . . .  6         6-26
Dots are at 600 dpi.

Character set B only . . . .  N       (Y N)

GS1-128  . . . . . . . . . .  N       (Y N)









F3=Exit            F4=Prompt                          F12=Cancel
```

2. We have now defined our bar code: The font number to use in design is 4700, the barcode is 80 dots high, with a narrow bar width of 6 dots. Each dot is 1/600 inch wide/high, which equals 0,0423 milimeters.

Step 3. Create font ID for the Arial soft-font

1. Before we can use the arial font in an overlay we must describe the font to the system. We select option '4. Work with fonts' in the InterForm400® administration menu and then option '1. Description of additional fonts'. We will define a font number for our Arial font.

2. We enter **5001** and get the following screen:

```
         Create Font                                              APF370D

Font  . . . . . . . . . . .  5001  Other fonts

Description . . . . . . . .  Arial 24 point Italic/Bold_____________

Spacing . . . . . . . . . .  1       0=Fixed, 1=Proportional
Pitch . . . . . . . . . . .  _1.00   0.10-49.99
Height  . . . . . . . . . .  _24.00  1.00-792.00
Style . . . . . . . . . . .  1       0=Upright  1=Italic  4=Condensed
                                     5=Condensed italic
Stroke weight . . . . . . .  3       (-7 - +7) 0=Medium <0=Light >0=Bold
Typeface  . . . . . . . . .  33000   0-65535
Symbol set  . . . . . . . .  _____   blank=standard

Override spacing  . . . . .  _____   blank=standard









F3=Exit   F12=Cancel
```

First we state the Font-ID 5001, which has the highest priority after the Symbol set which was defined as CodePage850 under step 4. Then we state proportional spacing, '1' for the Pitch (Pitch is not used for Proportional spaced fonts), 24 point Height, Italic style and Stroke weight bold (=3).

For the typeface we use any number in the interval 32769-65535. We select 33000 in this case.

Step 4. Define auto-download of fonts (Arial and OCRB)

Finally, we need to add download information for the Arial and OCRB fonts to our printer group.

1. We select option 4. Work with fonts in the InterForm400® administration menu and then option 8. Auto download soft font.

```
             Work with auto download soft fonts                      PGR300

Start with . . . . . .

Type option, press Enter
  2=Change  3=Copy  4=Delete   6=Update output queue 8=Update fonts

 Opt     Printer group   Description
  _       *IWPDF          Output to InterWord PDF files
  _       *PCL           Automatically created by auto download
  _       *PDF           Output to PDF files









F3=exit         F5=Refresh            F6=Add              F12=Cancel
```

If you do not have any other printer group for PCL you must create one with 'F6-Add' and create a new printer group.

2. Enter 6=update output queues for the Printer group (*PCL):

```
            Work with auto download soft fonts                    PGR300

Printer group name . . . : *PCL

Start with . . . . . _____________
                     _____________
Type option, press Enter
  2=Change   4=Delete

 Opt     Output queue    Library
  _      *ALLPCL




F3=exit         F5=Refresh            F6=Add              F12=Cancel
```

Here we add output queue *ALLPCL if not already there.

Note, that you can specify either of the values below instead of a specific output queue:

***ALLPCL**: Download the soft fonts in this printer group (if used) to any printer or file (if merging to *OUTDOC with the command APF3812/APF3812)

***OUTDOC**: Download the soft fonts in this printer group (if used) to all files, if merging to *OUTDOC with the command, APF3812/APF3812.

3. Now we must specify which fonts should be down loaded automatically. In the screen Work with auto download soft fonts we select option '8=Update fonts' for printer group *PCL and we press **F6** to add a download font to our printer group.

```
         Update Auto download Soft Font                           PGR332D

Printer group name . . . :  *PCL

Font number  . . . . . :  5001        F4=List
Symbol set number  . . . :  1         0 = 0=All symbol sets (barcodes only)
                                      1 = Western w/o Euro
                                      2 = Central Europe w/o Euro
                                      3 = Baltic
                                      4 = Western with Euro
                                      5 = Cyrillic w/o Euro
                                      6 = Cyrillic with Euro
                                      7 = Turkish
                                      8 = Greek
                                      9 = Central Europe with Euro
                                      A = Arabic
                                      U = UCS2 unicode
Font member name . . . . .  ARIAL     F4=List




F3=Exit             F4=Prompt                          F12=Cancel
```

Here we enter our Arial font ARIAL. Note that if the font is stored as a file member for the western non-Euro codepages.

Now we will define the OCRB font. This font is delivered with the system and IBM font number 3 is already reserved for these fonts, which means we do not have to describe this font to the system as we did with the Arial font in step 9.

4. Like in step 12 we press F6 to add a font.

```
         Update Auto download Soft Font                              PGR332D

Printer group name . . . :  *PCL

Font number  . . . . . :  ___3        F4=List
Symbol set number  . . . :  0         0 = 0=All symbol sets (barcodes only)
                                      1 = Western w/o Euro
                                      2 = Central Europe w/o Euro
                                      3 = Baltic
                                      4 = Western with Euro
                                      5 = Cyrillic w/o Euro
                                      6 = Cyrillic with Euro
                                      7 = Turkish
                                      8 = Greek
                                      9 = Central Europe with Euro
                                      A = Arabic
                                      U = UCS2 unicode
Font member name . . . . .  IF_OCRB   F4=List



F3=Exit             F4=Prompt                           F12=Cancel
```

Note that the OCR-B font must have font number 3.

Step 5. Testing the Barcodes in an Overlay

1. We can now try to create an overlay with text constants using the fonts 0003, 5001 and 4700. The following example is testing the OCRB font (font 3) and the barcode (font 4700) only. The spool entry used for testing will be the demo spool entry delivered with InterForm400® (Refer to section **1. Create Demo Spool Entry** on how to print it. See page 433)

2. Enter 1. Design Overlay on the main menu, and type the name FONTTEST.

```
         Design InterForm 400 overlay                                APF300D

Overlay name          FONTTEST__

Overlay text          ________________________________
Line spacing          040       in 1/240 of an inch (*INPUT, 1-720)
Rotation              000       (*INPUT, 0, 90, 180, 270)
Extra left margin
       positions      _0        (0-99)
Maximum number of
  print positions     378       (1-378)
Extra blank lines
          on top      _0        (0-99)
Font                  0003      *INPUT, fontnumber     F4=List
Extended page def.    N         (Y N)
Drawer / Papertype    *PRINTER  (*INPUT, *PRINTER, 1-256, Name)   F4=List
Paper Size            0         F4=List
Copy management       N         (Y N)
Duplex print          N         (N=no  S=short edge margin  L=long edge margin)
Duplex margin         __0       in 1/240 of an inch (1-720)
Back page overlay     __________  Code for placement _ (B=back page F=front)
```

```
F3=Exit      F4=Prompt          F9=Copy from another overlay     F12=Cancel
F13=Set view/print parameters   F14=PCL-view
```

3. The only thing we change on this screen is the default font. We set this to OCRB (Font 3). This means the entire spool entry will be printed with OCRB.

4. Before we start defining the barcode we will make a printout of the overlay in OCRB. We press **F3** to exit to the **main menu**, and we enter menu **3. Merge spool entry with overlay:**

```
         Merge Spooled File with Overlay                              APF730D

Overlay name             TESTFONT__
or Overlay Selector      ________
Primary/Secondary set    _   1=Primary, 2=Secondary
Spooled file:
   Job name              __________
   User                  __________
   Job number            ______
   File name             __________
   Spool file no.        ______       (no. / *ONLY / *LAST)
Code page                *INPUT       Number, *INPUT
Unicode output           *INPUT       *INPUT, *YES
Merge overprint lines    *NO          *NO, *YES
Form type                *STD______
Copies                   __1          (1-255)
Drawer / Papertype       *PRINTER     (*PRINTER, *INPUT, *OVERLAY, 1-256, Name)


Name of output queue to search if spooled file is unknown:

   Output queue . . . . AFC_INPUT1
     Library  . . . . .   APF3812___

F3=Exit                       F4=Prompt                      F12=Cancel
```

TESTFONT is already filled in because it was the last overlay active in the design menu.

Now go to the lower part of the screen and fill in queue **AFC_INPUT1** and library **APF3812**. Here we will select the spool entry created by option **1. Create demo spool entry** as described on page **433**.

We press **Enter** to look at entries in queue AFC_INPUT1:

```
                          Work with Output Queue

       Queue:  AFC_INPUT1     Library:  APF3812

Type option, Press Enter.
  1=Select 2=Change 3=Hold 4=Delete 5=Display 6=Release 8=Attributes

Opt  File        User        User Data   Sts  Pages  Copies   Form Type   Pty
 1   QPRINT      PETER       SMP001      HLD      4       1   DEMO        5









Parameters for option 2, 3 or command
===> ____________________________________________________________________________
F3=Exit   F11=View 2   F12=Cancel   F21=Description   F24=More keys
```

We select the file with option **1** and press **Enter**

```
        Merge Spooled File with Overlay                          APF730D

Overlay name            TESTFONT__
or Overlay Selector     ________
Primary/Secondary set   _   1=Primary, 2=Secondary
Spooled file:
   Job name             DSP010700_
   User                 PETER_____
   Job number           073534
   File name            QPRINT____
   Spool file no.       0005        (no. / *ONLY / *LAST)
Code page               *INPUT      Number, *INPUT
Unicode output          *INPUT      *INPUT, *YES
Merge overprint lines   *NO         *NO, *YES
Form type               *STD______
Copies                  __1         (1-255)
Drawer / Papertype      *PRINTER    (*PRINTER, *INPUT, *OVERLAY, 1-256, Name)


Name of output queue to search if spooled file is unknown:

   Output queue . . . . __________
     Library  . . . . .   __________

F3=Exit                      F4=Prompt                    F12=Cancel
```

All the spool file attributes have now been inserted, and we can now press **Enter** to print the Overlay TESTFONT merged with this spool entry and we will automatically be returned to the **main menu**.

5. We now re-enter our overlay TESTFONT. Here we want to create a tabulator line for replacing the “Serial No” information as a barcode. But first we press **F18** to determine the column and line interval for the “Serial No information”.

```
                          DISPLAY OUTPUT FILE
File . . . . . : QPRINT                                 Page/Line 1/28
Function . . . . +1_____                                Columns   1 - 78
Search for . . . ________________________________
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Product          Model   i-Group     Serial No.     License Code
       ---------------------------------------------------------------
       Interword400     510       i300       44A2971       81 20 01 3A
       PDF security     520       i100       44A9032       3F 78 66 99
       Should you have any questions regarding the modules, you are
       welcome to contact our technical support via:
       support@interform400.com
       Or download the latest documentation from the Internet on:
       www.interform400.com
       Regards
       InterForm A/S
                                                                      1
       Florence Flowers
       Tulip Road 16
       4000 Marigold
       DK-Denmark
                                                                    END
F3=Exit     F12=Cancel      F19=Left       F20=Right       F24=More keys
```

Here we find the Serial numbers to be in position 46 to 52 in line 30 to 42.

6. We now create a tabulator:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name: FONTTEST    Overlay text:

Seqnbr. Type  Overlay definition
 0001    8    Tabulator lin.030-042 pos 46-052 left 3,200L font 4700









Seqnbr. Type
   1,0   8    Tabulator
                Input:     Line           _30 - _42
                           Position       _46 - _52
                Print:     From left edge _3,200 Adjustment L (U L C R N +)
                           Font           4700      F4=List
               Condition: Position        ___ - ___
                          Is > = < N      _ ________________________
                          Blank after     _  B = Blank condition after
F3=Exit      F4=Prompt          F18=DSPSPLF   F11=Delete    F12=Cancel
```

Here we define the characters which should be printed as barcode data, and define our barcode font.

7. Now exit the forms design window and make a printout using option **3. Merge spool entry with overlay.** A part of the printout is illustrated in the following figure:

Product	Model	i-Group	Serial No.	License Code
Interword400	510	i300		81 20 01 3A
PDF security	520	i100		3F 78 66 99

Work with Zebra fonts

Fonts and soft fonts which are created/installed for PCL or PDF output cannot be used for Zebra output. You need to create/install special (soft) fonts for zebra. The options below are reached through **4. Work with fonts**, which can be reached from the InterForm400 Administration Menu.

Note that the Zebra font menu options are only shown if you have defined a Zebra (=Label) file set in InterForm400.

You may notice, that the resident fonts on the Zebra printers are limited to 2 different typefaces (CG Triumvirate Bold Condenced and Dot Matrix).

NOTE

You can type text in several different codepages on one label. You can specify a specific codepage on a font number.

NOTE

Creation of ZPL output (for Zebra) requires the purchase of the ZPL module for InterForm400.

Autodownload of soft fonts for Zebra printers works differently than for PCL printers. Soft fonts for a font number are automatically downloaded unless the soft font is registered as already downloaded into the flash memory of the printer in '**13. Work with fonts in ZEBRA flash memory**'.

11. Description of Zebra fonts

```
           Work with Zebra fonts                                    ZEB360D

Position to . . . . . .  _____  Font

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Rename


Opt          Font  Description
 _           2000  CG Triumvirate   H= 10.00/W= 5.00
 _           3001  Dot Matrix 11x7  H=  5   /W= 5
 _           4450  PDF417 EC=1 Lsep=CR Esc=§ H=3 W=3
 _           4545  EAN8 Narrow bar width=4 H=100.00
 _           4600  CODE39 Width=4, H=100, YYYY
 _           4700  CODE128  Width= 4 Height=100
 _           4900  I2of5 Width=4 Height=100 Rel.=2.5









                                                                    End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

With this option you can define fonts used for Zebra printers in addition to the fonts, that are already known by the printers. For the standard fonts delivered with the printers see page 492.

Press **F6=Create** to create a font or barcode:

```
         Create ZEBRA font                                          ZEB370D

Font  . . . . . . . . . . .  ____  2000-9999

                                   2000-2999 CG Triumvirate Bold Condensed
                                   3000-3999 Dot Matrix fonts
                                   4200-4299 QR Bar Code - Model 2
                                   4300-4399 Data Matrix Bar Code - ECC200
                                   4400-4499 PDF417 barcode
                                   4500-4599 EAN8 / EAN13 / UPC-A Barcode
                                   4600-4699 Code 3 of 9 barcode
                                   4700-4799 Code 128 barcode
                                   4900-4999 Interleaved 2 of 5 barcode
                                   5000-9999 Other fonts









F3=Exit   F12=Cancel
```

Note, that you cannot use any fonts already defined for PCL. You need to create fonts especially for Zebra printers. Below are descriptions that can help you understand the specifications of the fonts and barcodes:

CG Triumvirate

```
         Change ZEBRA font                                          ZEB370D

Font  . . . . . . . . . . . :  2000  CG Triumvirate Bold Condensed

Description . . . . . . . .  CG_Triumvirate___H=_10.00/W=_5.00



Height  . . . . . . . . . .  _10.00  1.00-792.00
Relative width  . . . . . .  5.00    0.20-5.00

F3=Exit   F12=Cancel
```

Here you define the size of the font in Height, but you can even change the width of the font relatively to the standard width e.g. a relative width of 2 creates a font twice as wide as the standard font with the same height.

Dot matrix

```
         Change ZEBRA font                                          ZEB370D

Font  . . . . . . . . . . . :  3001  Dot matrix font

Description . . . . . . . . .  Dot Matrix 11x7  H=  5   /W= 5

Font source . . . . . . . . :  2       1 = 9x5 dot matrix
                                       2 = 11x7 dot matrix
                                       3 = 18x10 dot matrix
                                       4 = 26x13 dot matrix
                                       5 = 60x40 dot matrix
                                       6 = OCRA dot matrix
                                       7 = OCRB dot matrix
Height factor . . . . . . . :   5      1-10
Width factor  . . . . . . . :   5      1-10









F3=Exit   F12=Cancel
```

The height and width of dot matrix fonts can only be defined as a whole (integer) factor times the standard width/height.

Defining barcodes for Zebra printers

Barcodes for Zebra printers are defined as barcodes for PCL printers with these deviations:

a) Barcodes are interpreted directly on the printers making soft fonts unnecessary for this purpose. You just specify a font number and use that for remap windows in overlay design. (Use option '11. Description of ZEBRA fonts' on the font menu).

b) For most barcodes you are prompted for a barcode with in dots. This is to be specified for both Zebra203 (200 DPI = 200 Dots Per Inch) and Zebra300 (300 DPI). If you want a barcode to have the same width in both 200 DPI and 300 DPI you should define the width for Zebra203 to be 2/3 of the value for Zebra300. The width is measured in dots. See page 381.

c) The height of the barcodes are measured in 1/72 inch i.e. a height of 72 equals 1 inch.

The Datamatrix barcode:

Via the screen below you insert the setup of the barcode:

```
         Create ZEBRA font                                          ZEB370D

Font  . . . . . .  4344  Data Matrix Bar Code - ECC200

Description . . . . . .  Datamatrix_demo_barcode_________________

Symbol element size in dots
  ZEBRA203  . . . . . .  4__   (1-999)
  ZEBRA300  . . . . . .  6__   (1-999)

Colums to encode  . . . .   __    (10-48) or Blank = Based on data length
Rows to encode  . . . . .   __    (10-48) or Blank = Based on data length

Line separator  . . . . . .  _     1=A blank, 2=CR, 3=CRLF, 4=None

UCC/EAN . . . . . .  _     (Y N)




F3=Exit   F12=Cancel
```

Columns/Rows to encode You can optionally insert a number of spooled file columns (positions) and/or rows (lines) to be used for the barcode. If inserted they must be an even number. In this manner you can fix the size of the barcode in the horizontal or vertical direction in this manner to a maximum value.

UCC/EAN Like EAN128/GS1-128 it requires, that the data to be converted into the barcode fits with this standard.

For general descriptions of barcodes see page 381.

Using soft fonts for printing on Zebra

When you create fonts in the range 5000-9999 this screen is shown:

```
         Create ZEBRA font                                          ZEB370D

Font  . . . . . .  5655  Other fonts

Description . . . . . .  Arial 12_____________________________________

Height  . . . . . .  _12.00  1.00-792.00
Relative width  . . . . . .  1.00    0.20-5.00

Special EBCDIC codepage . .  _____

Soft font member name per symbolset
  Western . . . . . .  ARIAL_____
  Central European  . . . .  __________
  Baltic  . . . . . .  __________
  Turkish . . . . . .  __________
  Cyrillic  . . . . . .  __________
  Greek . . . . . .  __________
  Arabic  . . . . . .  __________
  Hebrew  . . . . . .  __________
  Special . . . . . .  __________

F3=Exit   F4=Prompt   F12=Cancel
```

Height: The height of the font.

Relative width:

The relative width of the font i.e. 1 equals the standard width and 2 equals a font twice as wide as the standard font.

Special EDCDIC codepage:

The EBCDIC codepage to use when printing using this font - if the default codepage is not to be used. In this manner you can print text in several different codepages on one label.

Soft font member:

Specify previously installed soft fonts for each symbolset, that you want to use.

NOTE

If you install and use a **fixed** soft font you may notice, that the font size should also be specified in height even though pitch or CPI would be the normal way to measure it. Examples: A height of 10 equals a CPI of 12 and a height of 12 equals a CPI of 10.

12. Work with ZEBRA soft fonts

When you select this option all installed soft fonts for Zebra printers are shown:
(You reach this option from the InterForm400 Menu if you select **80. Administering InterForm 400**, followed by **4. Work with fonts**, and finally **12. Work with ZEBRA soft fonts**.)

```
         Work with ZEBRA soft fonts                                    FNT461D

Position to . . . . . .   __________ Member name

Type options, press Enter.
  2=Change   4=Delete   5=Display   6=Print

Opt   Member    Symbolset          Description
 _    FRUTBOCE  Central European   TrueType  Frutiger-Bold
 _    FRUTBOWE  Western            TrueType  Frutiger-Bold
 _    LOGOFONT  Special            TrueType  Company Logo

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

5=Display
You can choose option **5=Display** to display a sample of the font in SwiftView (if installed). You are prompted for the codepage to use. State the codepage with preceding zeroes.

6=Print Some few characters in some soft fonts cannot be printed on a Zebra printer. To make sure, that an installed soft font can be used it is recommended always to do a test print before using the soft font in production.

Press **F6** to install a True Type Font file as a new soft font for Zebra:
(Make sure that you do not violate any copyrights when installing the font).

```
         Install TrueType font to ZEBRA from /APF3812Home/Work          FNT465D

Document name . . . . . :  FONT.TTF

Font name . . . . . :  Font

Font name PCL . . . . . .  Font___________

Symbol set  . . . . . .  1             1 = Western
                                       2 = Central European
                                       3 = Baltic
                                       4 = Turkish
                                       5 = Cyrillic
                                       6 = Greek
                                       7 = Arabic
                                       8 = Hebrew
                                       9 = Special

Member name in FONT file  .   Font______   F4=List



F3=Exit                                                  F12=Cancel
```

When installing you are prompted for what symbol set to use. Use the symbol set, that you want to use this soft font for. If the font is a specially designed font including e.g. the company logo you should use **9 = Special**.

13. Work with fonts in ZEBRA flash memory

As opposed to PCL output the soft fonts used for Zebra output are always downloaded when used. You can however decide to download soft fonts or images into the printers flash memory.

InterForm400 use the table below to find out which soft fonts are already loaded in the flash memory of the printer and therefore does not need to be downloaded when used.

```
         Work with fonts in Zebra flash memory                      FNT481D

Position to . . . . . .   __________   Outq
                          __________   Library
                          ________     Fontmember

Type options, press Enter.
  4=Delete

Opt    Outq         Library      Fontmember     Flash drive
 _     ZEBRA        QUSRSYS      COURIER        E









                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Download a soft font into flash memory

Press **F6=Create** to download a soft font into the flash memory of a Zebra printer:

```
         Create spooled file with soft font download                FNT482D

Outq . . . . . . . . . . .   ZEBRA_____
Library  . . . . . . . . .   QUSRSYS___
Fontmember . . . . . . . .   ARIAL___       F4=List
Flash drive  . . . . . . .   E              (E, B)




                ------------------------------------------------
                |                                              |
                |    Output queue . . . .   ZEBRA_____         |
                |                             QUSRSYS___       |
                |                                              |
                |    Form type  . . . . .   *STD______         |
                |                                              |
                ------------------------------------------------



F3=Exit   F4=Prompt   F12=Cancel
```

This will create an entry in the list above, that InterForm400 will use for remembering NOT to download this soft font when used on this output queue.

This will also create a spooled file on the specified queue (which should be the one, where the printer is attached). The spooled file name will be 'ZEBRAFONT' and the user data field of the spooled file will be named the same as the downloaded. This spooled file will do the actual install of the soft font in the flash memory as well as print a sample of the soft font.

Delete a soft font from flash memory

If you use option 4=Delete for an installed soft font you will be asked to confirm and to specify the form type of the spooled file, that will do the delete from the flash memory:

```
         Confirm delete of fonts                                    FNT481D


Press Enter to confirm your choices for (4=Delete).
Press F3 or F12 to return to change your choices.



Opt    Outq
 4     ZEBRA
                  ------------------------------------------
                  |                                        |
                  |  Output queue . . . .   ZEBRA          |
                  |                           QUSRSYS      |
                  |                                        |
                  |  Form type  . . . . .   *STD_____      |
                  |                                        |
                  |  F3=Exit           F12=Cancel          |
                  |                                        |
                  ------------------------------------------
                                                                        End
F3=Exit   F12=Cancel
```

The entry of this soft font in the list above will be removed and a spooled file will be generated on the assigned output queue. This spooled file has the name 'DLTZEBFONT' and a user data field containing the flash drive and the soft font that will be deleted.

> ☺ **TIP** ☺
> *See description of option '**19. Initiate ZEBRA flash memory and reload fonts and images'** if there is not enough space in the flash memory.*

14. Substitution ZEBRA internal fonts

The resident fonts of the Zebra printers only support Western codepages. However in order to be able to print other codepages (and use the internal fonts when possible) InterForm400 provides with the option to specify to substitute the resident font with a previously installed soft font for each code page:

```
   Substitution for internal fonts when printing non-western code page


                        Substitute for      Substitute for
Code page               triumvirate         dot matrix font
Central European        __________          __________
Baltic                  __________          __________
Turkish                 __________          __________
Cyrillic                __________          __________
Greek                   __________          __________
Arabic                  __________          __________
Hebrew                  __________          __________









F3=Exit                 F4=Prompt                       F12=Cancel
```

☺ **TIP** ☺

Suggestions for substitutions: You could use a Universe Bold or Arial Bold to substitute Triumvirate and a fixed font e.g. Courier to substitute the Dot Matrix font.

19. Initiate ZEBRA flash memory and reload fonts and images

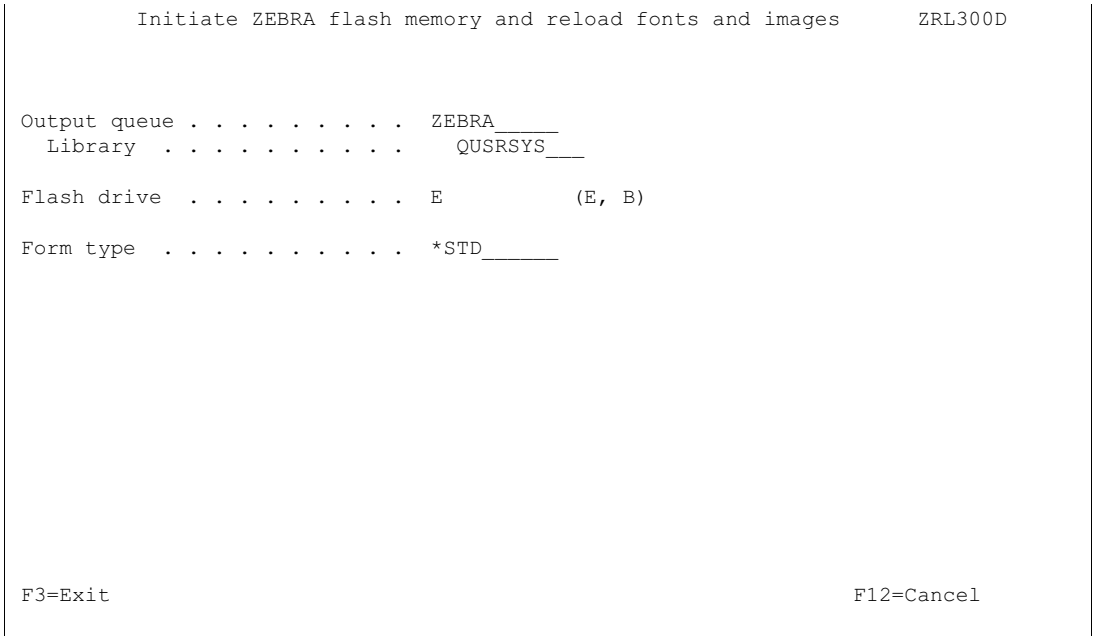
As you install and delete resources in the flash memory of a Zebra printer the amount of free space in the flash memory will gradually decrease (empty blocks in the memory from previously installed elements cannot be reused).

In order for you to workaround this issue InterForm400 provides you with this function. It will erase a specific flash memory drive and rewrite all registered resources in onto the flash memory.

💣 WARNING 💣

*As all data in the specified flash memory drive will be **erased** you should make sure of this before executing this option:*
1. Are all your InterForm400 related resources in flash memory registered in InterForm400?
2. If you have downloaded other resources into the flash memory (not registered in InterForm400) these should be reloaded after the memory has been rewritten. Do you have all resources?

This screen is shown:



State the output queue where the printer is attached, the flash memory drive and the form type to use for the spooled file, that will execute this function. The spooled file will have the name 'ZEBRAFLASH' and user data field 'INZ-RELOAD' - with status *RDY.

When the printer is done, it will print samples of all installed soft fonts and a list of all resources in the flash memory, including how much memory they take up, and the amount of memory that are free.

WARNING

When you press Enter on the screen above you will NOT be asked to confirm. So please make sure, that you have all the resources installed before pressing Enter.

5. Work with images

Images can be imported from the directory /APF3812Home/Work on the System i.

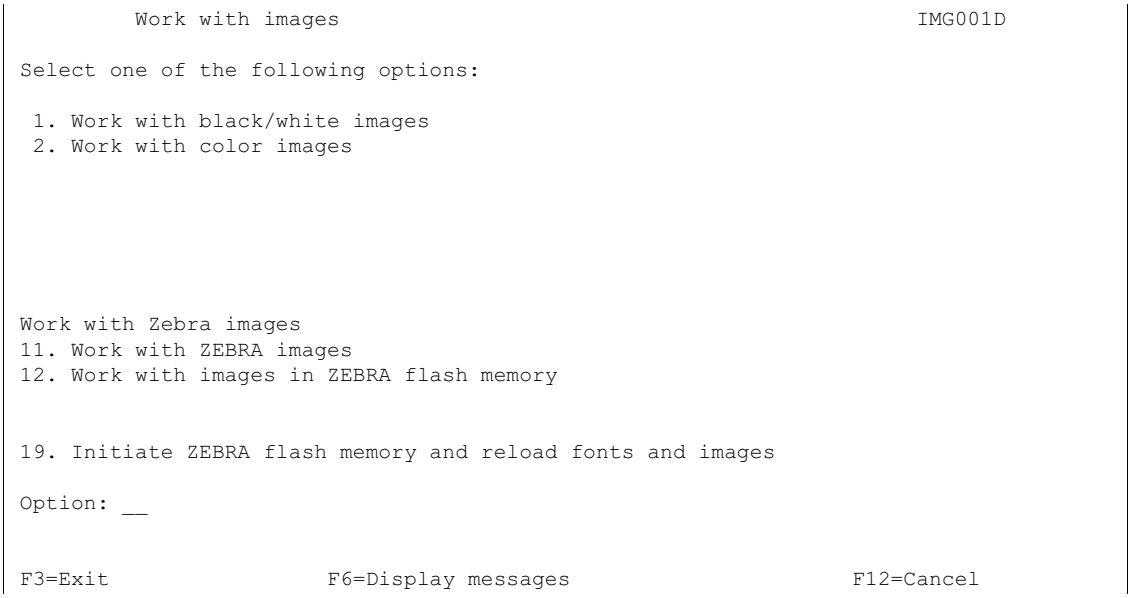
The following image standards are supported for black and white images:

- TIFF format Rev. 4.0 non-compressed or with data compression Scheme-2.
- TIFF Huffman Compressed
- TIFF format CCITT T.6 (fax group 4)
- MOD:CA including black and white image tags (If the MOD:CA file includes more images only the first image will be used)
- LZW compression
- Grey images

These formats are available with most scanners.

Color images must be in standard windows color BMP or JPEG format. Sharp B/W BMP images can only be inserted with the &&IMG *PATHBMP command.

When selecting option '5. Work with images' from the Administration menu the following screen appears.



From here you can select either if you want to work with or import black/white or color Images.

If you want to use images for Zebra output these images should be imported specifically for Zebra in option **11. Work with ZEBRA images**.

Working with black and white images

Selecting option 1. Work with black and white images the following screen will appear.

```
        Work with Images                                              IMG360D

Start with  . . __________

Select option. Press Enter.
  2=Change description 3=Copy 4=Delete 5=View 6=Print
  8=Display attributes 9=Convert to PCL5
Opt   Name       Description
 _      Image_1    Image no. 1 for InterForm
 _      Image_2    Image no. 2 for InterForm
 _      Image_3    Image no. 3 for InterForm
 _      Image_4    Image no. 4 for InterForm
 _      Image_5    Image no. 5 for InterForm









                                                                      End

F3=Exit         F5=Refresh       F8=Read from /APF3812Home/Work       F12=Cancel
```

Note that using **5=view** requires the PCL Viewer to be installed.

> ☺ **TIP** ☺
> *Converting images to PCL5 format is not necessary in order to use the image from within an overlay, but performance will increase when using converted images. If necessary reverse the image when importing instead of reversing it in overlay design - it will increase performance.*

Importing black and white images.

Pressing **F8,** from the Work with Images will bring the Read image from Folder screen.

```
         Read Image from the /APF3812Home/Work directory                  IMG370D

Start with  . . __________

Select option. Press Enter.
  1=Read without conversion  2=Read with conversion to PCL5

Opt   File neme    Size in bytes      Date/Time changed
 _    CEB2SW_5.TIF       19.802     2003.02.21 - 20:47:25
 _    PP.TIF             10.335     2003.02.22 - 09:23:28
 _    PRO1.TIF           21.079     2003.02.11 - 11:32:03









                                                                    End

F3=Exit            F5=Refresh          F8=All file types      F12=Cancel
```

Select the TIFF file you want to read into InterForm400® and specify the member into which you want to add the image, and which is referred to in an overlay definition. If you select an image with grey tones you will see a screen like this:

```
         Read B/W image from the /APF3812Home/Work directory              IMG375D

Document name  . . . . :  171170.TIF

File type  . . . . . :  TIFF Palette color compression 32773

Width  . . . . . :    400
Height . . . . . :    300



Output image name  . . .  I171170___

Description  . . . . . .  Image_171170_-_in_double_size

Magnitude factor . . . .  2   1, 2, 3, 4, 6, 8









F3=Exit             F4=Prompt                                F12=Cancel
```

InterForm400 will show you the size of the image in dots (300 equals an inch). If you intend to print the image larger it is a very good idea to enlarge it here. If you do so the grey areas will be presented as fine as possible in the final output.

The **magnitude factor** states how many times you want to enlarge the image. Using '2' will double the size.

Working with color images

From the "**Work with images**" menu you select option 2, if you want to work with color images.

```
         Work with color images                                        BMP100D

Position to . . . . . .               Image name

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   6=Print   8=Display information
  12=Work with colors in image

Opt   Image name  Description                                          Status
 _    Color_1     InterForm Color image 1
 _    Color_2     InterForm Color image 2
 _    Color_3     InterForm Color image 3









                                                                          End
F3=Exit   F5=Refresh   F6=Load color image file   F11=View 2   F12=Cancel
```

Note that using **5=view** requires the PCL Viewer to be installed.

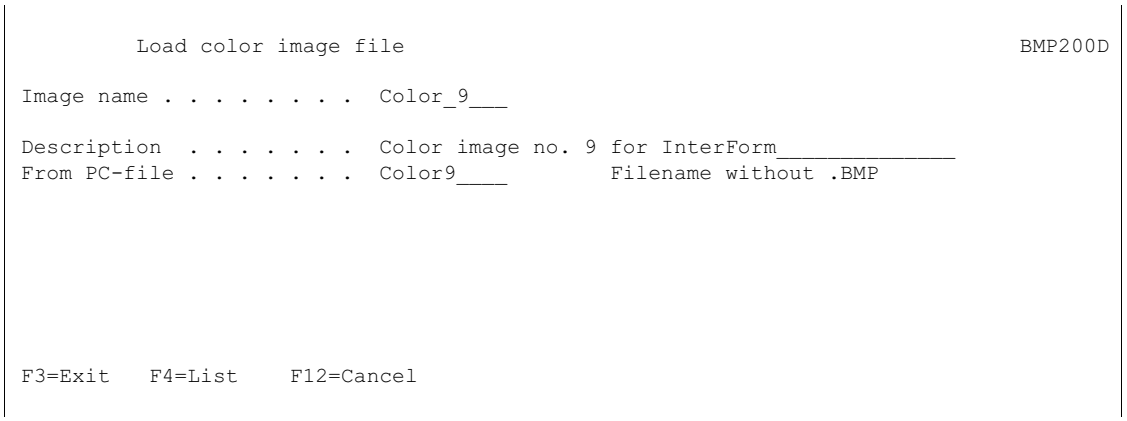
Import color images

Please note, that the color images can also be installed directly from the graphical designer as described on page **606**.

The supported color images are BMP, GIF, JPG, PNG, RAW and TIF files. For the GIF, PNG, RAW and color TIF files there are two prerequisites:

1) The Auto Forms Control subsystem must be running and the service job, TOOLSHED must also be running. This job is automatically started with the subsystem.
2) Java 1.6 or higher must be installed on the IBM i.

To load a new color image from the /APF3812Home/Work directory on the System i IFS press **F6**. Type in an image name to be used in InterForm400® and a description of same. In the field From PC-file press **F4** to retrieve a list of available image files. Select the image with option 1.



☺ **TIP** ☺

You can use the TIFTOMBR command (see page 542) to import multiple TIFF files from e.g. a folder within qdls.

Work with Zebra images

Images that you want to use for Zebra printers must be installed for Zebra (using option **11. Work with Zebra images**). You cannot use images installed for PCL or PDF output.

> **NOTE**
> Creation of ZPL output (for Zebra) requires the purchase of the ZPL module for InterForm400.

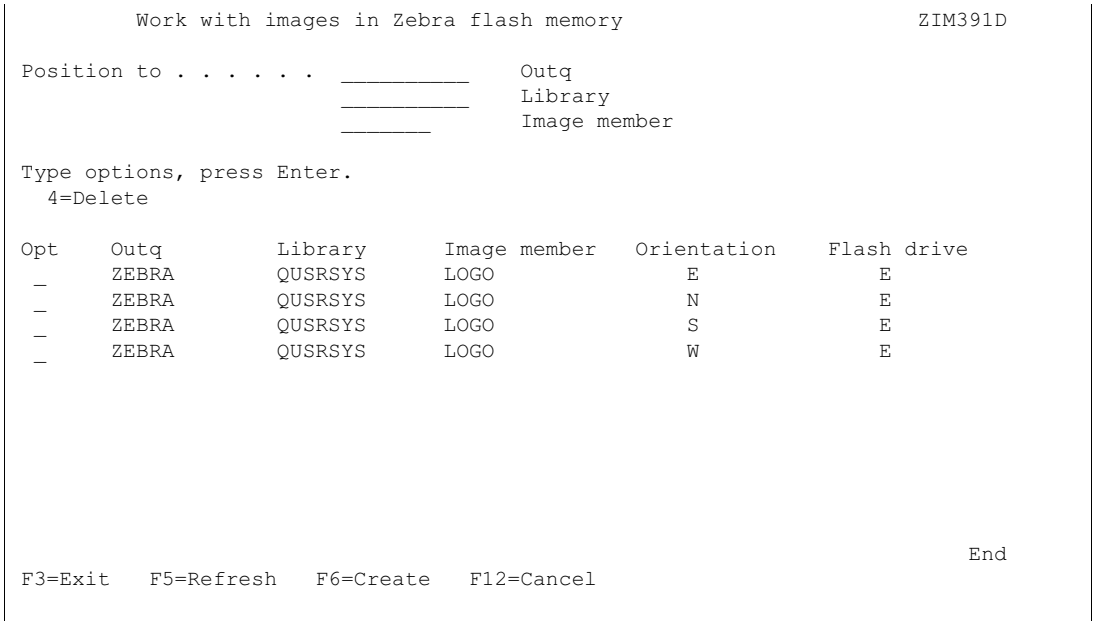
11. Work with ZEBRA images

```
          Work with Zebra images                                    ZIM350D

Position to . . . . . .   __________  Image name

Type options, press Enter.
  2=Change description   3=Copy   4=Delete   5=Display   6=Print
  8=Display attributes

Opt   Image name  Description
 _    LOGO        Company Logo
 _    NEWLOGO     New Company Logo

                                                                       End
F3=Exit   F5=Refresh   F8=Read from Folder   F12=Cancel
```

You can install TIFF images in the formats noted on page 407. TIFF images can only be installed from the /APF3812Home/Work directory.

> **NOTE**
> Even though you can specify up to 10 characters form the installed image name you should strict the name to max. 7 characters if you plan download the image into the flash memory of a Zebra printer.

12. Work with images in ZEBRA flash memory



```
          Work with images in Zebra flash memory                      ZIM391D

Position to . . . . . _____________    Outq
                      _____________    Library
                      _______          Image member

Type options, press Enter.
  4=Delete

Opt    Outq          Library      Image member   Orientation    Flash drive
 _     ZEBRA         QUSRSYS      LOGO               E              E
 _     ZEBRA         QUSRSYS      LOGO               N              E
 _     ZEBRA         QUSRSYS      LOGO               S              E
 _     ZEBRA         QUSRSYS      LOGO               W              E

                                                                        End
F3=Exit    F5=Refresh    F6=Create    F12=Cancel
```

With this feature you can download images onto the flash memory of a Zebra printer. Only images with names consisting of up to 7 characters can loaded into the flash memory. When you add an image to this list a spooled file is created, that will do the load of the image. This spooled file will also print out the downloaded image with the specified rotation.

Rotation can be **N**, **E**, **W** or **S** for North, East, West and South. These equals rotations 000, 270, 090 and 180 degrees (in the same order).

19. Initiate ZEBRA flash memory and reload fonts and images

This option will work exactly as option 19 (with the same name) on the **4. Work with Fonts** menu. Refer to page **405** for more information.

6. Work with PCL Files

The InterForm400® system features a possibility to import PCL-files from a PC by the following methods:

- From a PCL spooled file (*USERASCII) on a System i output queue.
- PCL print file placed in the /APF3812Home directory in the IFS.

The PCL-file can be created in any PC-Product capable of delivering an output for an HP page printer (PCL4, 5 or 5e compatible).

It is recommended to work with applications making use of PCL drawing, text commands etc. instead of just creating a large PCL bit image. The PCL driver must correspond to the iSeries attached printer intended for using the overlay.

We recommend to use an original HP driver even though your printer is another brand. Non-HP drivers sometimes include native commands, which will appear in the print out on genuine HP printers or other HP compatible printers.

No matter how many pages the PC-print consist of only the first page is stored. This is due to the fact that the PC-print is intended to be a part of an overlay for use on only one page.

The program cleans the PC-print for unwanted control codes, such as form feed, tray selections and printer reset.

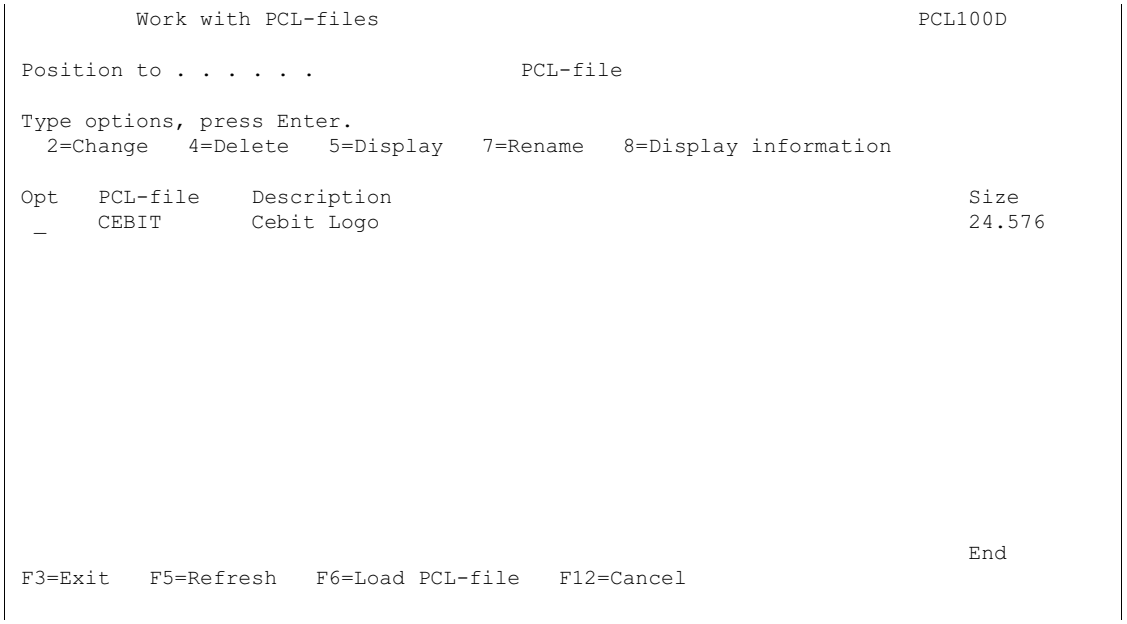
When the PC-print has been read into a member in the PCL-file, it can be used in design of an overlay when selecting overlay element F=PCL file.

When selecting option **6. Work With PCL Files** on the InterForm400® administration menu, you will get the following screen:

```
          Work with PCL-files                                        PCL001D

Select one of the following options:

 1. Work with B/W PCL-files
 2. Work with color PCL-files









Option: _

F3=Exit                 F6=Display messages                    F12=Cancel
```

The menus for black/white and color files appear identical, but InterForm400® needs to operate with the two file types separately.

Selecting e.g. **1. Work with B/W PCL-Files** will bring up the following screen:



Note that using **5=view** requires the PCL Viewer to be installed.

Import PCL file

Press **F6** to load a PCL file into InterForm400®

```
         Load PCL-file                                          PCL110D

PCL-file . . . . . .   ________

Description  . . . . . .   ________________________________________________

Load from  . . . . . .   _           1=PC file in the /APF3812Home/Work dir
                                     2=Output queue









F3=Exit   F12=Cancel
```

Enter the member name into which you want to add the PCL file, and which is referred to in an overlay definition.

Enter whether you want to read the PCL file from a spool file or from the /APF3812Home/Work directory. In both cases a HP-PCL driver have been used to format the overlay created in a PC application.
If reading from the /APF3812Home/Work directory, the PCL driver should be configured to print to a file. Either directly into the folder APF3812, or to the local hard drive and copied to the folder.
If reading from output queue the PCL driver must be defined to print on a local printer on the System i through iSeries Access.

When PCL-File and Load From is defined, the selection for the PC file will appear. If selecting read from the /APF3812Home/Work directory, you will be able to use **F4** to list available files

```
         Load PCL-file                                          PCL110D

PCL-file . . . . . :   PH

Description  . . . . . :   ________________________________________________

Load from  . . . . . :   1           1=PC file in the /APF3812Home/Work dir
                                     2=Output queue

From PC-file . . . . . .   ___________









F3=Exit   F4=List   F12=Cancel
```

☺ TIP ☺

You can use the PCLTOMBR command to import multiple B/W PCL files from e.g. a folder in qdls.

7. Work with palette colors

Change the definition of the colors.

This option is designed for optimizing the color palette for your color printer.

```
         Work with palette colors                                        PAL100D

Position to . . . . . .           Color nbr

Type options, press Enter.
  2=Change

Opt   Color nbr    Description                Red      Green      Blue
 _        1         Black                        0          0         0
 _        2         Grey                       128        128       128
 _        3         Red                        255          0         0
 _        4         Green                        0        255         0
 _        5         Blue                         0          0       255
 _        6         Yellow                     255        255         0
 _        7         Orange                     255        128        64
 _        8         Brown                      128         64         0
 _        9                                      0          0         0
 _       10                                      0          0         0
 _       11                                      0          0         0
 _       12                                      0          0         0
 _       13                                      0          0         0
                                                                    More...
F3=Exit   F5=Refresh   F10=Print palette   F12=Cancel
Start of list.
```

It is recommened to print out the color palette on your color printer as a reference.

The first predefined 8 colors are fixed and cannot be changed.

Adding a new color is done by entering 2 in front of a vacant color number. Enter the RGB combination and press Enter. The new color definition will now be available for selection in the INK settings when working with overlays. Consequently text, frames and shading can be printed in the new defined color.

8. Work with paper control options

This option is the entry to edit tables that will help you to select the right printer drawer, to select the right output bin on the printers and to insert fully user defined PJL commands for stapling and other printer configuration:

```
         Work with printer control options                          PAP001D

Select one of the following options:

 1. Papertype to PCL-drawer conversion
 2. SCS to PCL drawer conversion
 3. Output sorter definition
 4. User defined PJL
 5. Output queues with old Zebra firmware









Option: _

F3=Exit                 F6=Display messages                  F12=Cancel
```

Check out each option below:

1. Paper type to PCL-drawer conversion

Some few (old) printers does not support the possibility to select the drawer by paper type. For these few printers this function has been added, that enables the user to map all of the standard paper types to a PCL drawer number for each printer.

For a description of how to set this up for the main part of your printers refer to page 481 for more information.

```
         Paper type to PCL-drawer conversion                        PAP300D

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt   Outq        Library
 _    HP4         QUSRSYS
 _    PRT01       QUSRSYS

                                                                      End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Press F6=Create to add a new output queue (with a printer attached):

```
         Create paper type to pcl-drawer conversion                    PAP305D

Output queue . . . . . .   HP4_______
Library  . . . . . .       QUSRSYS___

Paper Type            PCL-drawer   or   Macro number
PLAIN . . . . . .        __2                _____
PREPRINTD . . . . .       __3                _____
LTRHEAD . . . . . .       __2                _____
TRNSPRNCY . . . . .       __2                _____
PREPUNCHD . . . . .       __4                _____
LABELS  . . . . . .       __2                _____
BOND  . . . . . .         __2                _____
RECYCLED  . . . . .       __2                _____
COLOR . . . . . .         __2                _____
CARDSTOCK . . . . .       __2                _____




F3=Exit   F12=Cancel
```

Here you can specify what drawer number each of the standard paper types should be translated into. Note, that the paper types maybe are translated into your native language on the printer display.

2. SCS to PCL drawer conversion

When changing from printing with Host Print Transform onto InterForm400 you will notice a change in how the printer drawer is selected. Host Print Transform converts the EBCDIC spooled files into ASCII and automatically converts the drawer selection on the *SCS spooled files into PCL codes to select the right drawer number.

When you put InterForm400 into production you will need to decide for how the drawer should be selected with InterForm400. You have these options:

1. Select the drawer by **paper type** in the overlay you merge with. That is to be preferred if at all possible. Refer to '**1. Papertype to PCL-drawer conversion**' above for more information.

2. Select the drawer number as ***INPUT in the overlay**. That will use the drawer number from the *SCS spooled file when you merge it with an overlay. This option ('**2. SCS to PCL drawer conversion** ') can help you to translate the *SCS drawer into a PCL drawer number. Read below to see how it is done.

3. The simple thing is to type in a **PCL drawer number in the overlay**. This is however a printer specific setting so it could be a problem if you use the same overlay for different types of printers. So this solution should be avoided.

If you go with option 2 using *INPUT as the drawer in the overlay, then the number you specify in the DRAWER parameter of the *SCS spooled file you merge with, will be the exact same number as the PCL drawer number.

This will however most often NOT be the same as the drawer as Host Print Transform sends out. So with this option you can insert a table that tells InterForm400 how to transform the *SCS drawer number into a PCL drawer number. The table is printer specific so this is setup per output queue. Press F6 to create a new one:

```
         Create SCS to PCL drawer conversion                          DRW310D

Output queue . . . . . .   PRT05_____
Library  . . . . . .       QUSRSYS___
Printer description  . . .  HP4_____________________________

SCS-drawer      PCL-drawer
    1             1__
    2             4__
    3             5__
    4             ___
    5             ___
    6             ___
    7             ___
    8             ___
    9             ___
   10             ___
   11             ___
   12             ___
   13             ___
   14             ___                                                    +

F3=Exit   F12=Cancel
```

Specify the output queue you are merging TO.

3. Output Sorter Bin Support

This function is used in departmental printing environments with the following purposes:

- Several users share the same printer, and want their print output in a specific output tray depending on the User name.
- Printing of jobs where an output tray should be selected depending on the overlay chosen for the job.
- Combinations of the above

This option has been tested and approved with the standard sorter units available for HP5Si and the Lexmark Optra series.

Defining an Output Sorter Bin for a User

Enter Menu point **8. Work with printer control options** followed by **3. Output Sorter Definitions** on the Administration menu. The following screen will appear:

```
                        Work with Output Sorters

Start with . . . . . .

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt    Outq        Library   Sorter type        Default bin

(No output sorters defined - Press F6 for add)

                                                                      End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

Press **F6** to add a new Output sorter definition.

One output sorter definition corresponds to one output queue. Additional output sorter definitions must be defined for each additional output queue with a capable printer attached.

```
Create                    Output Sorter Definition

Output queue . . . . . .   PRT02
  Library  . . . . . .       QUSRSYS

Sorter type  . . . . . .   HP5SI
Default output bin . . . .   1

F3=Exit                                                 F12=Cancel
```

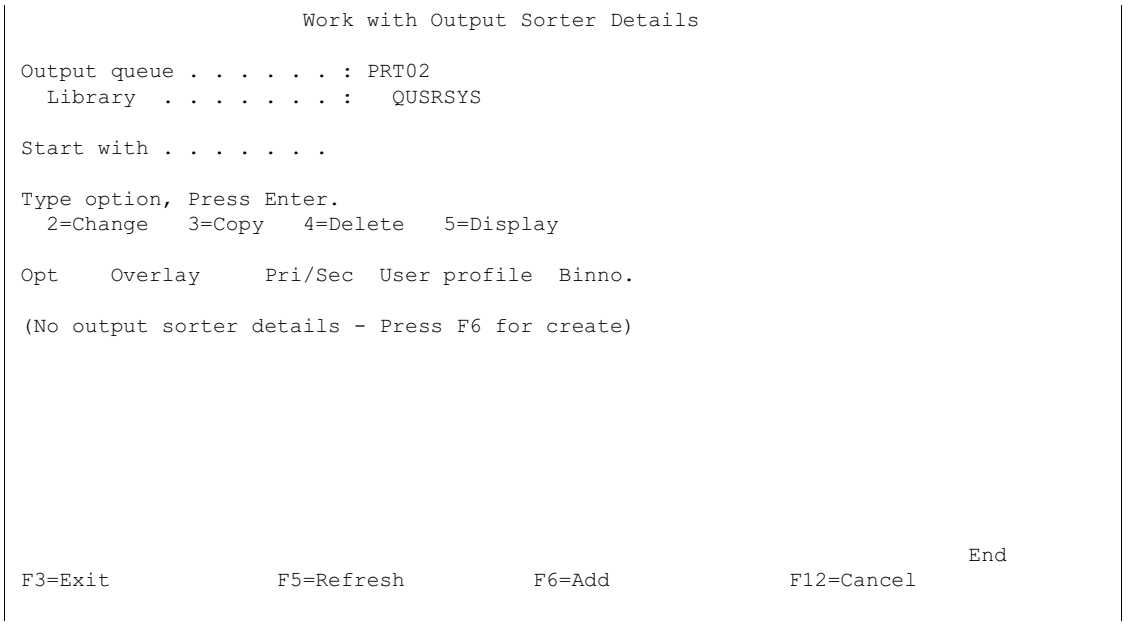
Output Queue: The output queue holding the HP5Si or Lexmark Optra printer.

Sorter Type: Not yet inspected.
Any value entered for Sorter type will default to HP5Si. This type can be used for both HP5si and the Lexmark Optra series.

Default output bin: This bin will be used for any User or Overlay which does not match any criteria defined in **Output Sorter Details.** A bin number from 1 to 11 can be defined for a HP5Si.

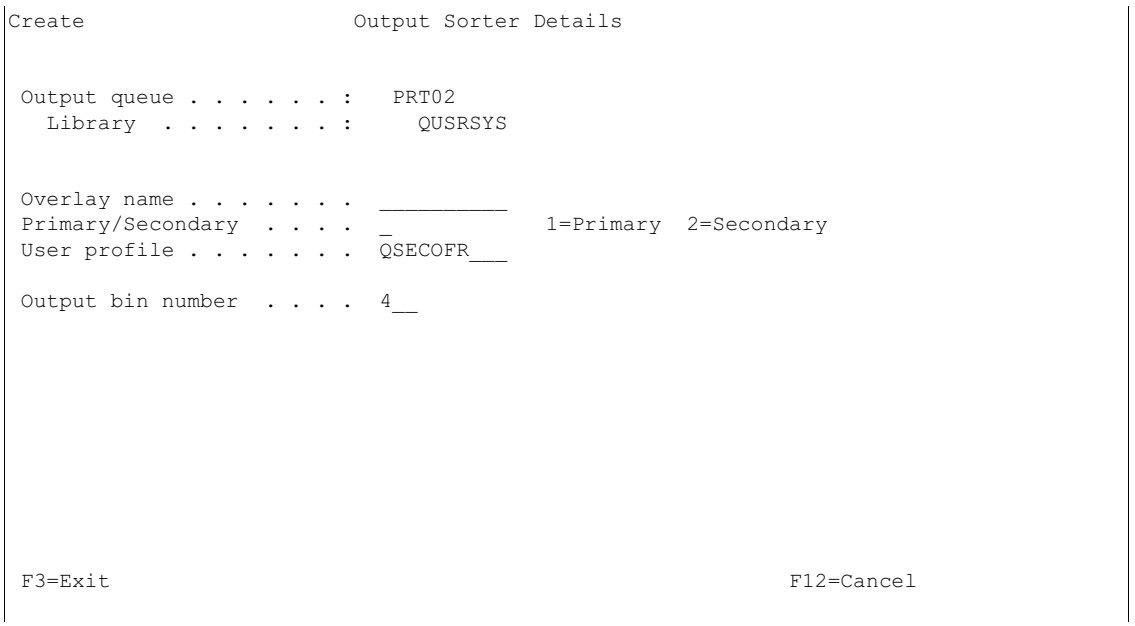
Bin 1:	The standard face-down bin.
Bin 2:	The standard face-up bin, which is only selectable if the sorter unit is not installed.
Bin 3:	The upper face-up bin of the sorter unit.
Bin 4-11:	The 8 face-down bins of the sorter unit.

When pressing **Enter** the following screen will appear:



Press **F6** to add Sorter details to you Sorter definition.

You can add additional **Sorter Detail** lines for each User profile and/or each overlay which should result in addressing of a particular sorter bin:



Overlay name: Type a name of an overlay which should result in printing to a bin defined in **Output bin number**. If a user profile has been entered also, the bin will only be addressed if both **Overlay name** and **User profile** match.

Primary/Secondary: If Copy Management has been defined for the Overlay this option will decide if only the Primary or the Secondary set of copies will result in printing to a specific sorter bin. As you normally do a primary merge you should state '**1**' when using an overlay name.

WARNING

If Primary/Secondary is left blank the overlay is not checked!

User Profile: The System i user profile which should result in printing to a bin defined in **Output bin number**. If an overlay name has been entered, the bin will only be addressed if both **Overlay name** and **User profile** match.

Output bin number: A bin number from 1 to 11 can be defined for a HP5Si.

Bin 1:	The standard face-down bin.
Bin 2:	The standard face-up bin, which is only selectable if the sorter unit is not installed.
Bin 3:	The upper face-up bin of the sorter unit.
Bin 4-11:	The 8 face-down bins of the sorter unit.

The following example illustrate a situation where all letters, using overlay IF400DEMO, printed to queue PRT02 are printed to output bin 8, except when printed by PETER which will result in printing to bin 9. All other print jobs submitted by PETER will be printed to bin 4. Any print job submitted by other users and with other overlays will be printed to the **Default output bin** defined for this Sorter definition.

```
                      Work with Output Sorter Details

Output queue . . . . . : PRT02
  Library  . . . . . :   QUSRSYS

Start with . . . . . .

Type option, Press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt    Overlay     Pri/Sec  User profile  Binno.
 _     IF400DEMO      1      PETER         009
 _     IF400DEMO      1                    008
 _                           PETER         004




                                                                        End
F3=Exit             F5=Refresh          F6=Add              F12=Cancel
```

4. User defined PJL

With InterForm400 you can define to staple several pages together. You can staple several copies together via copy management or staple papers for each recipient. InterForm400 includes predefined PJL commands for stapling for many different printers, but with this option you can even design your own PJL sequences if you want to make your own PJL commands instead.

You can create up to 10 different printer groups (or PJL sequences) with up to 10 PJL commands in each.

Below we have created a printer group 0 showing to to add our own PJL sequence to add stapling for a specific printer not covered by the InterForm400:

First we pressed F6=Add to create the printer group:

```
         Work with user defined PJL                              PJL300D

Printer group . . . . .   0
Description . . . . . .   My printer









F3=Exit                                F12=Cancel
```

Next we use 2=Change to insert the PJL sequences needed:

```
         Work with user defined PJL                              PJL300D

Printer group . . . . . : 0
Description . . . . . . : My printer

PJL Function  . . . . .   0
Description . . . . . .   Staple on my printer

@PJL COMMENT MYPJL SET STAPLE=TWOLEFT_____________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________
@PJL ____________________________________________________________



F3=Exit                                F12=Cancel
```

Now you can use the PJL sequence if you add stapling either via copy management (page **70**) or via a stapling finishing definition (refer to page **223**) if you select **U = User defined PJL** and remember to use a PJL printer type for merging with the overlay.

☺ **TIP** ☺

If you want to find out what PJL sequences are necessary in order to staple on a specific printer you can do this by printing to file (e.g. from Notepad) while activating stapling on the printer in question. Then open the resulting .prn file in e.g. Notepad and now you can see the PJL commands generated. Copy the PJL commands relevant for stapling into the setup above.

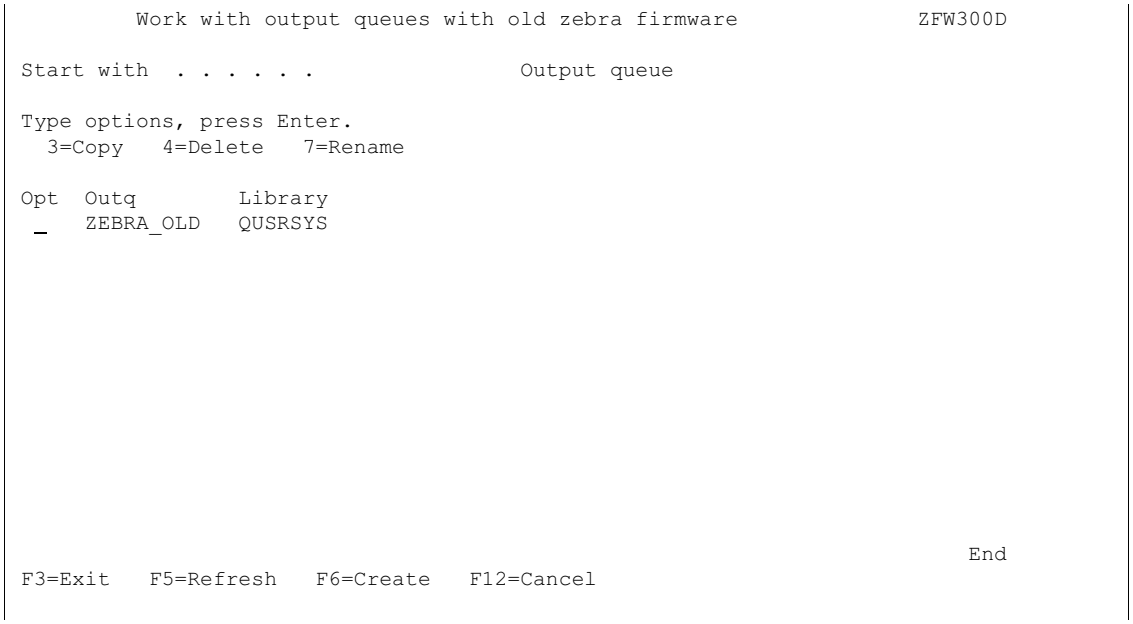
5. Output queues with old Zebra firmware

Older zebra printers (firmware nn.13.nn and older) need the soft fonts in a different (slower) way than newer printers, so if you have both older and newer Zebra printers (refer to the Zebra printer configuration on page 41 for details), then you need to tell InterForm400 exactly which printers, that are the older ones.

This menu option is only visible if you have configured InterForm400 to print to both older and newer Zebra printers.

The lists is to include the output queues, that you are merging TO (where the physical printer is attached):

You reach this screen from the InterForm400 Main Menu via options:
80. Administering InterForm 400
8. Work with printer control options
5. Output queues with old Zebra firmware



Press F6=Create to add extra output queues.

9. Work with AFPDS copy spooled file CPI & LPI

If you want to use AFPDS spooled files as input in InterForm400, then you should consider if you need to use this feature. It can be reached from the InterForm400 Main Menu by selecting '80. Administering InterForm 400' followed by '9. Work with AFPDS copy spooled file CPI & LPI':

```
         Work with afpds copy spooled file atributes                  AFP901D

Position to . . . . . .  _________   Printer file name
                         _________

Type options, press Enter.
  2=Change   4=Delete   5=Display

     Printer                Update        Update    Update    CpySplf CpySplf
Opt  file        Library    user          date      time      CPI     LPI
 _   MY_PRTF     MY_LIB     KSE         2010.03.05  10:48:56  17.0    12.0
 _   SDF         KJH        KSE         2010.03.05  10:55:33  33.0    16.0
 _   TEST        TEST       KSE         2010.03.05  10:55:48  20.0     6.0

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Here you can override specific printer files (also specifying the library of the printer file), that was used for creating the spooled file, to a specific CPI and LPI:

```
         Change afpds copy spooled file atributes                     AFP905D

Printer file name  . . . :   MY_PRTF
Library  . . . . . . . . :   MY_LIB

Update user profile  . . .   KSE
Update date  . . . . . . .   2010.03.05
Update time  . . . . . . .   10:48:56

Copy spooled file CPI  . .   17.0
Copy spooled file LPI  . :   12.0

F3=Exit   F12=Cancel
```

If you look at the attributes of a spooled file you may see the default CPI and LPI:

```
                    Work with Spooled File Attributes

Job  . . . . . :   QPADEV000H      File . . . . . :   QPRINT
  User . . . . . :     KSE            Number . . . . . :     000001
  Number . . . . . :     074598       Creation date  . . . :   03/03/10
Job system name  . . :   C005DE34       Creation time  . . . :   09:44:28

Page range to print:
  Starting page  . . . . . :   1
  Ending page  . . . . . :   *END
Record length  . . . . . :   202
Page size:
  Length . . . . . :   66
  Width  . . . . . :   100
  Measurement method . . . . . :   *ROWCOL
Lines per inch . . . . . :   6
Characters per inch  . . . . . :   10
Overflow line number . . . . . :   60
Fold records . . . . . :   *NO
                                                                    More...
Press Enter to continue.

F3=Exit   F5=Refresh   F12=Cancel   F13=Change
```

But inside an AFPDS spooled file you can insert smaller texts with a different CPI and LPI, so it can be a problem to fit in the text in the space available. Normally InterForm400 will e.g. push text to the right to make space for all the text (avoiding overwriting previous texts), so nothing is lost, but this may cause the alignment of columns to be lost.

That is why, you with InterForm400 can override the CPI and LPI to spread out the spooled file text, and thereby keep fixed positions and line number all through the spooled file.

If you are in doubt as to what CPI and LPI to select, you could e.g. state the CPI to be highest CPI used (or higher) - although keeping in mind that the max. width of a spooled file is still 378, and that it is not that easy to design an overlay, for a spooled file that is so wide, that you are not able to see a complete line at a time. For the LPI it might be a very good idea to select a whole number times the spooled file LPI. So if the spooled file has 6 LPI you could e.g. override it with this function to e.g. 12 LPI (still keeping in mind that the max. number of lines in a spooled file is 255).

If you select the double CPI, then every other line in the designer will (normally) be blank, but you can then just use the half line distance in the overlay to compensate for this.

10. Maillog http server administration

With this menu option you can manually start and stop the web server for the email log. The web interface is described in dept on page 432.

```
Maillog http server administration                  System.......: PMK250
                                                    Workstn ID...: QPADEV000B
Server http subsystem  . :   QHTTPSVR                  CCSID ....: 00277
  Instance . . . . . . . :     IF400MAILW           User ID......: KSE
Port . . . . . . . . . . :    7375

Select one of the following options:









10. Start the IF400MAILW http server instance
11. End the IF400MAILW http server instance


Option: __


F3=Exit                     F6=Display messages             F12=Cancel
```

20. Certificate administration

Refer to the PDF Security manual for details of how to import certificates to be used for digital signatures in PDF files and how to digitally sign PDF files. The PDF Security module can also encrypt and password protect PDF files generated by InterForm400.

Refer to our web site for more details of this module:

http://www.interform400.com/index.php/products/digital-signature-pdf-security

40. Email administration

This menu covers the email administration for the daily work:

```
Email administration                                  System.......: PMK250
                                                      Workstn ID...: QPADEV000B
Subsystem....: MAILINTER                                 CCSID ....: 00277
   Library...:   APF3812                              User ID......: KSE


Select one of the following options:

 1. Work with email groups


 5. Work with email log


10. Start the MAILINTER subsystem
11. End the MAILINTER subsystem
12. Work with the MAILINTER subsystem

Option: __



F3=Exit                    F6=Display messages             F12=Cancel
```

With option 10, 11 and 12 you can work with the subsystem used for emailing if you are using InterForm400 SMTP.

Option '1. Work with email groups' and '5. Work with email log' are covered below.

For additional **email configuration** refer to option '3. Configure email' on the configuration menu as described on page **347**.

If you want to specify the **email address of various email senders** (to be used in the email finish definition) you use option '8. Work with email senders' on the Auto Forms Control menu as indicated on page **252**.

NOTE

It is **highly recommended** to run the command APF3812/CLRMAILLOG reguarly to remove any emails older than a certain number of days. Refer to page 523 for details of this command.

1. Work with email groups

You can make InterForm400 send out to a group of email addresses. In order to do that you will first need to define an email group to use. This is done by selecting ‘80. Administering InterForm 400' followed by ‘40. Email administration’ and ‘1. Work with email groups’:

```
         Work with email groups                                    EMA100D

Position to . . . . . .               Email group

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display   7=Rename
  12=Work with email addresses

Opt  Email group  Description
__   SALES_GRP    Group of all sales contacts

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Here you can create new ones with F6=Create, change the description of existing ones with 2=Change and use option 12=Work with e-mail addresses:

```
         Work with email addresses                                 EMA120D

Email group . . . . . :   SALES_GRP

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt  Email address
 _   AB@demo_company5.com
 _   ABD@demo_company8.com
 _   CSE@demo_company7.com
 _   DD@demo_companyB.com
 _   EE@demo_companyB.com
 _   FF@demo_companyc.com
 _   Hans_Hansen@demo_company1.com
 _   Jason_Smith@demo_company4.com
 _   Jens_Hansen@demo_company2.com
 _   Jens_Jensen@demo_company3.com
 _   KJ@demo_company3.com
 _   K9@demo_company6.com
 _   RPGLE@demo_companyA.com
                                                                    More...
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

You can use F11=View 2 to view the e-mail addresses, names or descriptions. You add new receivers with F6=Create:

```
         Change email address                                  EMA130D

Email group  . . . . . :   SALES_GRP

Email address  . . . . . .  RPGLE@demo_companyA.com
                            ____________________________________________
                            ____________________________________________
                            ____________________________

Name . . . . . .  Richard Peter Glenn
                  ____________________________________________________
                  ____________________________________________________
                  ____________________________

Description  . . . . . .  Sales Manager of Demo CompanyA
                          ____________________________________


F3=Exit    F12=Cancel
```

Using an email group

The use of an email group is described for each of the possible ways of e-mailing, but generally it is implemented in this way:

The email to address should be set to '*GROUP' and the name of the receiver should contain the name of the mail group e.g. as below (as done in an e-mail exit program):
(The email group must be written in capital letters.)

```
CHGVAR    VAR(&RTNTOADR) VALUE('*GROUP')
CHGVAR    VAR(&RTNTONAM) VALUE('SALES_GRP')
```

If you are using a command like SNDEMAIL or MRGSPLFPDF you can refer to the group in this manner:

TOADR(*GROUP SALES_GRP) or TOADR((*GROUP SALES_GRP)) (for SNDEMAIL)
(Stating *GROUP as the mail address and the name of the mail group as the name of the receiver). The email group must be written in capital letters.

The same principle is used if you want to address a group as a BCC or CC receiver: State '*GROUP' as the address and the group name as the name of the receiver.

Please note, that it is currently not possible to state a group as a BCC receiver if you are using the email finishing definition as you cannot specify a name for the BCC receiver here.

5. Work with email log

With this option you can view the log of sent emails. Refer to the description of the command, APF3812/WRKMAILLOG on page 529 for details of green screen email log, that you can reach via this option.

Alternatively you can also work with the email log via a browser as described below.

Work with the email log via a browser

With the email log you can see all the emails, that has been sent by InterForm400. The email log is available as a menu option in InterForm400 (described above) and as the command APF3812/WRKMAILLOG (described on page 529), but for most end users the easiest interface is via a browser, which is described below.

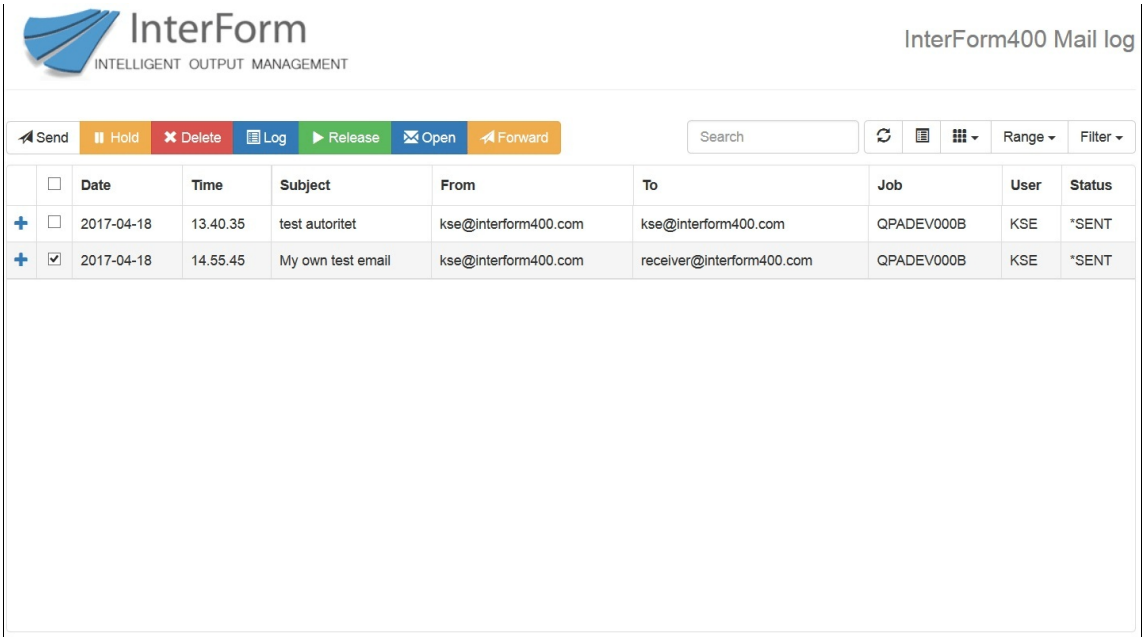
Configuration of the email log browser interface is setup as described on page 352.

After that you can reach the email log via the link: http://server-ip-address:portnum/, where

server-ip-address: This is the ip-address (or name) of the IBM I.

Portnum: The portnumber assigned for the email log service.

If you access this site, then this will be shown: (After you are requested to sign on).



Only emails, that you are authorized to are shown (if the user profile is not authorized to an outbox folder containing emails, then emails in this outbox is not shown above).

If you want to perform any of the actions (hold, delete,log, release, open or forward), then you first need to select one or more emails and then click the action, you want to execute.

Only emails in the status *HLD or *READY can be deleted.

Please notice the search field. Any text typed in here is searched for in all fields in the emails (including e.g. the date). The search is done while you type, so you see the search result immediately below.

You can manually start and stop the http server as described on page 427.

Service Functions

The service functions are accessed by selecting option **12** on the InterForm400 Main Menu:

```
         Service Functions                                          APF900D

Select one of the following options:
 1. Create Demo Spool Entry

 5. Display all displayable characters
 6. Save spooled file to the /APF3812Home/Work directory
 7. Print Saved file to the /APF3812Home/Work directory
 8. Print Resource X-reference
 9. Journal menu
10. Display resource statistics
21. Export of InterForm 400 resources
22. Import of InterForm 400 resources

40. Install/upgrade InterWord  400
50. Apply PTF from the /APF3812Home/PTFs directory
60. Install SwiftView at drive C:
70. Install InterForm Designer on your PC
80. Prepare server to support InterForm Designer

Option: __

F3=Exit                 F6=Display messages                     F12=Cancel
```

1. Create Demo Spool Entry

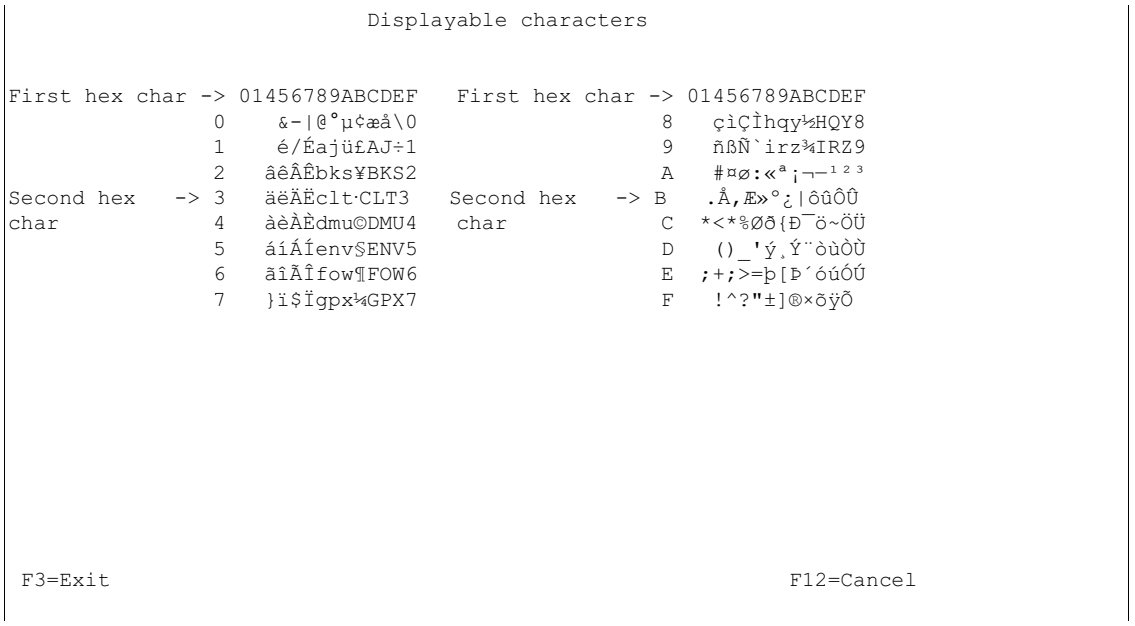
If you want to study the Auto Forms Control sample delivered with this program, this option will create a spool entry in a format which could have been the output from a common System i application.

```
         Create Demo Spooled File                                   SMP001D

This program will print a demo spooled file in the APF3812/AFC_INPUT1 outq.
The printout is intended for being merged with the IF400DEMO overlay from the
file-set SAMPLE.

If the AUTO_FORM subsystem is started, the merge operation is carried out
automatically by Auto Forms Control.

Output from the merge operation will be placed in the APF3812/AFC_OUT1 outq,
from where it can be printed on a HPIII or similar PCL5 printer.

Before the AUTO_FORM subsystem is started for the first time, you must call
the APF3812/AFCINSTALL program. The subsystem is then started with this
command:   STRSBS APF3812/AUTO_FORM




 Press Enter to create the printout


 F3=Exit                                                    F12=Cancel
```

5. Display All Displayable Characters

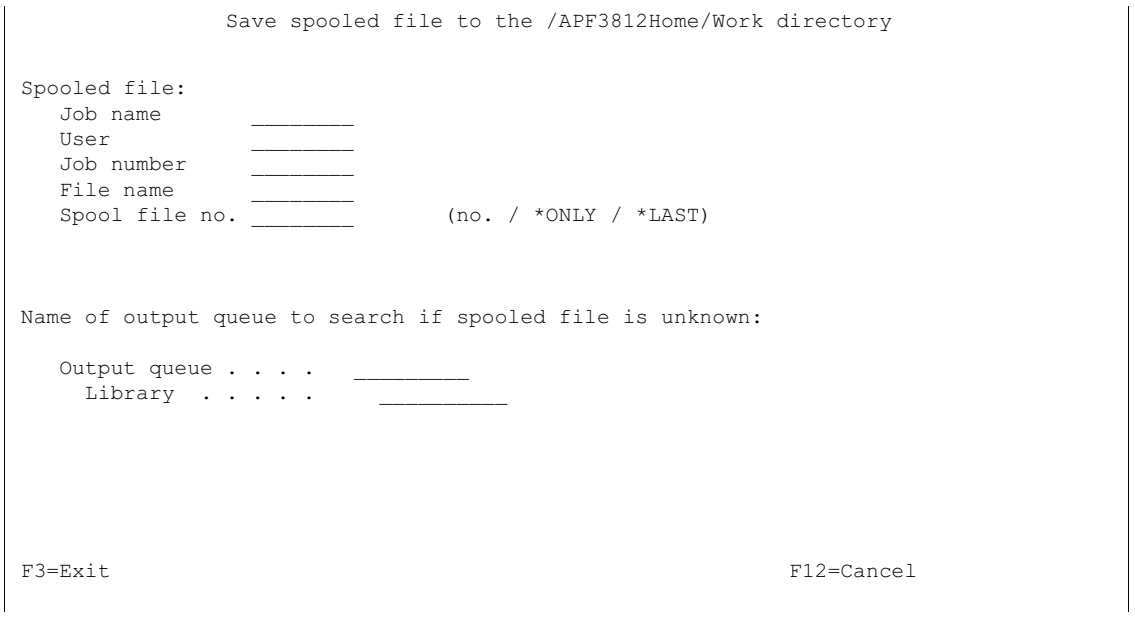
This option is meant as a tool to solve problems with character set mappings.

By making a print screen of this screen you can verify if the displayable characters will appear the same in print.



6. Save spooled file to the /APF3812Home/Work directory

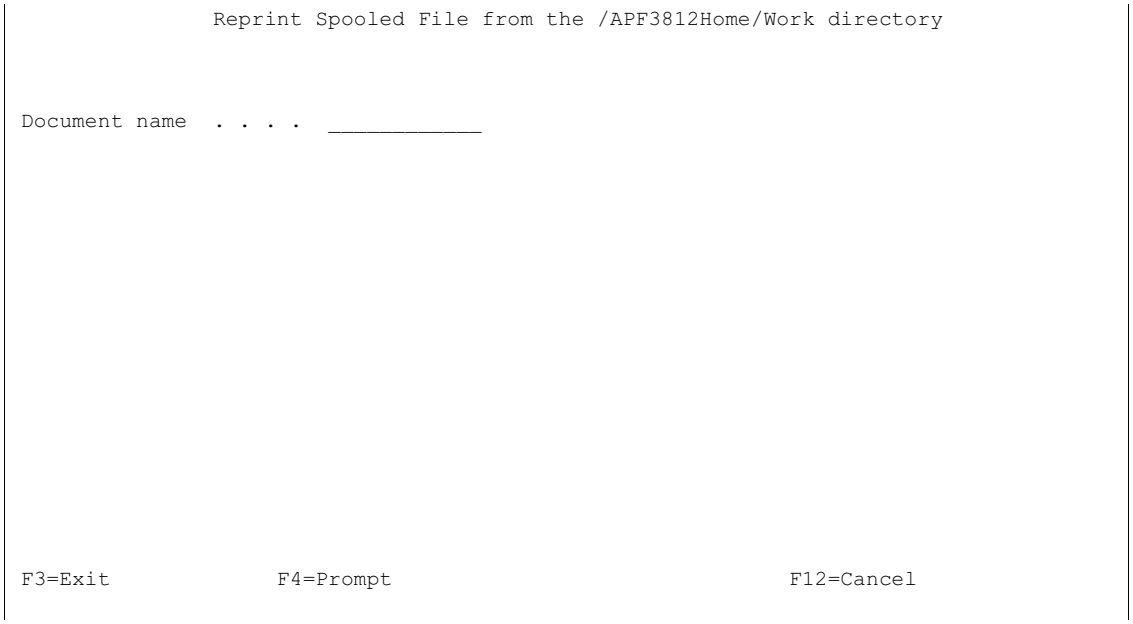
This function provides a possibility to save a spool file to a folder. The file can then be attached to an E-mail and send to the support engineer or forms designer. The file can be restored with menu **7. Print Saved Spooled File from the /APF3812Home/Work directory**, and can be used to define re-mapping in overlays or to solve support issues.



Fill in the output queue name where the spool file resides and select with option 1. The spool file details will automatically be filled in. Following enter a name for the file.

7. Print Saved Spooled File from /APF3812Home/Work directory

This function provides a possibility to restore a spool file from a folder, which has originally been saved through menu **6. Save spooled File to the /APF3812Home/Work directory.**



8. Print Resource X-reference

When selecting this option InterForm400 will create a spooled file containing all resource cross references in InterForm400. The spooled file will be created on the output queue of the current job. You can steer where it will be created e.g. by going to a command line and execute the command:

```
CHGJOB OUTQ(<outq name>)
```

- prior to selection of this option. The CHGJOB command will change the default outq for the current job.

You can also find the spooled file after execution (if it has not been printed out) if you from the same job execute the command:

```
WRKJOB OPTION(*SPLF)
```

This will list spooled files created by the current job.

The cross reference list will list the following:

For all images, colors, PCL files, fonts etc. it will list in which lines in which overlays in what file sets the resource is used.

If font numbers are used in overlay headers or extended page definitions, then these will also be listed as ***OVLHD** and ***EXTPAG** in the **'used in'** column.

All overlays are listed. If there is a reference to the overlay by use of an If..Then, you will see a line with ***CONDOVL** stating the overlay and line number that refers to this overlay through an if..then line. Overlays referring to the overlay with function 'S=Suboverlay' are listed with ***SUBOVL**.

Information inserted in autodownload will also be listed. Here you will be able to see what soft font is downloaded with what font number and in which printer group(s) this is defined.

It will also list all user exit programs referenced, and list each place where they are referenced.

Apart from the spooled file mentioned above an additional spooled file is also created:

```
                                                        Display Spooled File
File  . . . . . :   QPRINT
Control . . . . .
Find  . . . . . .   SAMPLE
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+....8
InterForm 400              LAST USED LIST     30.01.12   14:20:05    Page   31
File set . . . . . :   SAMPLE
Description  . . . . . :   InterForm 400 Samples
Overlay     Description                    Last used
BLANK       Blank overlay                  2012-01-30
FORM1       Prinserter sample DK envelopes -
FORM2       Prinserter sample DE envelopes -
IF400DEMO   InterForm 400 Demo Form        2012-01-30
PATTERNS    Pattern IDs                    -
POSITIONS   Print SPLF with positions A4   -
RULER       Ruler                          -
TEST                                       2011-05-23
DEMO                                       -
```

This spooled file is created with user data= ‘XREFLST4'. For each file set it lists all overlays and the last used date. Please notice, that only the last used date is updated for the main overlays only - **any suboverlays (conditioned or unconditioned) will not get the ‘last used date’ updated** for a merge.

9. Work with Journaling

The *import function* (see page **443**) and the graphical designer (Refer to page **584**) of InterForm400® requires journaling to be active for some files in the APF3812 library.

The journal is used for logging any changes to the important InterForm400 files in the APF3812 library. The journal is used as a safety net making it possible to roll back changes. Changes done via import or via the graphical designer can even be rolled back via the menu.

We recommend that you keep the default journal APFJRN in the InterForm400® library APF3812. If you wish to use an existing journal, type in the name and library of the journal. If you do not want to use a journal leave these fields blank.

Normally you would need regularly to change the journal receiver, save the detached journal receiver and then delete the old journal receiver, but the entries in the journal is usually fairly limited and they are reset when doing an upgrade of InterForm400, so this is normally not needed.

For IBM i’s running with in a mirrored setup using e.g. Mimix or simular you might want to add journaling of all the files in the APF3812. Just remember to use IMAGES(*BOTH) when starting journaling. Refer to Appendix R on page **645** for special considerations when using a mirrored system.

Notice: In order to undo changes the journal receivers has to be on the system at the time of the undo.

```
         Journal menu                                                JRN001D

Select one of the following options:

 1. Start journaling files in InterForm library APF3812
 2. End journaling files in InterForm library APF3812
 3. Delete journal and receivers in InterForm library APF3812

 5. Work with changes









Option: _

F3=Exit                 F6=Display messages                     F12=Cancel
```

If you select option **5. Work with changes** you will see the screen below:

```
         Work with changes                                           JRN100D

Position to . . . . . .  ______       Date

Type options, press Enter.
  1=Rebuild to status before change   2=Rebuild to status after change
  5=Display journal   8=Display information

Opt   Date        Time      Function    Resource              Type
 _    2013-03-08  17.18.11  *IMPORT     FUSS_AN               *COLORIMG
 _    2013-03-08  17.18.16  *IMPORT     FUSS_KW               *COLORIMG
 _    2013-03-08  17.18.19  *IMPORT     FUSS_MG               *COLORIMG
 _    2013-03-08  17.18.24  *IMPORT     FUSS_SK               *COLORIMG
 _    2013-03-08  17.18.27  *IMPORT     FUSS_SY               *COLORIMG
 _    2013-03-08  17.18.30  *IMPORT     KOPF_AN               *COLORIMG
 _    2013-03-08  17.18.32  *IMPORT     KOPF_KW               *COLORIMG
 _    2013-03-08  17.18.33  *IMPORT     KOPF_MG               *COLORIMG
 _    2013-03-08  17.18.36  *IMPORT     KOPF_SK               *COLORIMG
 _    2013-03-08  17.18.37  *IMPORT     KOPF_SY               *COLORIMG
 _    2013-03-08  17.18.39  *IMPORT     LOGO_DE_SW            *COLORIMG
 _    2013-03-08  17.18.40  *IMPORT     LOGO_SK_SW            *COLORIMG
                                                                    More...
F3=Exit   F5=Refresh   F11=View 2   F12=Cancel
```

If you regret a change you can simply use option **1=Rebuild to status before change** for the changes listed and press Enter.

10. Display resource statistics

Select this option (on the service menu) to view the used resources in InterForm400: How many times each resourse is used and the time the resource was last used. Together with the '8. Print Resource X-reference' option (or PRTXREF command) you have a great tool set to overview the resources if you e.g. want to clean up old and unused resources. When you select this option you will see this screen:

(Wait a bit while InterForm400 is gathering the statistical data)

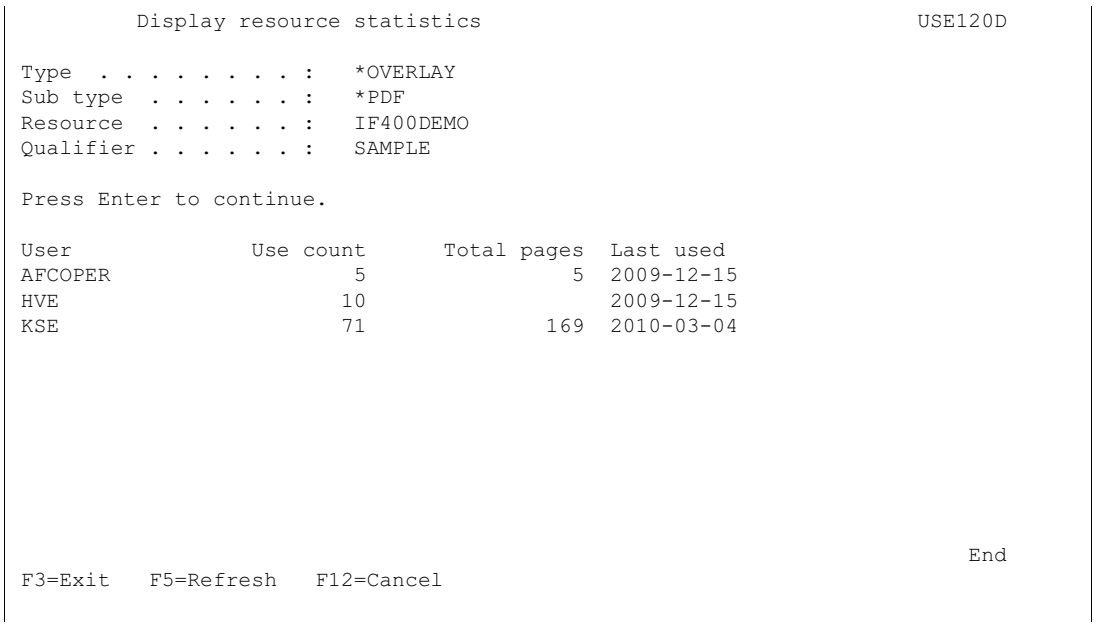
```
         Display resource statistics                              USE100D

Position to . . . . . .   __________   Type

Type options, press Enter.
  5=Display detailed statistics

Opt  Type        Sub type          Use count      Total pages  Last used
 _   *AFCEXIT                            18                   2009-12-15
 _   *AFCOUTQ                          170             3247  2010-03-04
 _   *DIGISIGN   *PDF                     3                   2009-12-15
 _   *EXPORT                             7                   2010-03-04
 _   *FINISH     *EMAIL/FAX              10             1984  2009-12-16
 _   *FINISH     *INSERT                  6               24  2009-12-15
 _   *HLDSPLF                          246                   2010-03-04
 _   *IMPORT                           21                   2010-03-04
 _   *MOVSPLF                           1                   2009-10-08
 _   *OVERLAY    *PCL                    4              259  2010-03-03
 _   *OVERLAY    *PDF                  298            57127  2010-03-04
 _   *OVERLAY    *ZPL                   18               46  2010-02-16
 _   *PCDESIGN                         57                   2010-03-04
                                                                  More...
F3=Exit   F5=Refresh   F12=Cancel
```

If you select '5=Display detailed statistics' for a resource type you can see the used objects of the specific type, how much they are used and the date when they was last used:

> **WARNING**
>
> *The 'Last used' date is NOT updated for suboverlays! (Neither conditioned nor unconditioned suboverlays.)*

```
         Display resource statistics                              USE110D

Type  . . . . . :   *AFCOUTQ
Sub type  . . . . . :

Type options, press Enter.
  5=Display

Opt  Resource    Qualifier         Use count      Total pages  Last used
 _   AFC_INPUT1  APF3812                141              490  2010-03-04
 _   EMAIL       QUSRSYS                 18               40  2009-12-16
 _   PRTAKMF1_I  QUSRSYS                 11             2717  2009-10-08

                                                                    End
F3=Exit   F5=Refresh   F12=Cancel
```

If you again use option 5=Display you can even see which users that has used the resource and how much:



```
        Display resource statistics                                USE120D

Type  . . . . . :   *OVERLAY
Sub type  . . . . . :   *PDF
Resource  . . . . . :   IF400DEMO
Qualifier . . . . . :   SAMPLE

Press Enter to continue.

User              Use count      Total pages  Last used
AFCOPER                   5                5  2009-12-15
HVE                      10                   2009-12-15
KSE                      71              169  2010-03-04









                                                                    End
F3=Exit   F5=Refresh   F12=Cancel
```

21. Export of InterForm400 resources

This option is to enable users in distributing InterForm400® resources i.e. by tape, SNDDST or E-mail. By using the Export function, resources are copied from InterForm400® to an Export library. The Export – and Import libraries can be considered as being temporary libraries, as the resources copied to and from these 2 libraries, usually are relevant only for a certain distribution.

All details of the export/import feature are included in **Appendix P** on page 627.

The libraries (APFEXPORT and APFIMPORT) can be deleted when the distribution is completed. For a complete export you need to go through the options in this sequence:
1. Create empty export library APFEXPORT
2. Copy resources to export library
3. Work with resources in export library (optional)
4. Work with distributions

The options are described below:

Use option **1. Create empty export library APFEXPORT**, to create an empty import library.

```
          Work with export of InterForm 400 Resources                  EXPORTD

                                                    System.......: INTER02
                                                    Version......: 2014.M01

Select one of the following:

     1. Create empty export library APFEXPORT
     2. Copy resources to export library
     3. Work with resources in export library
     4. Work with distributions
     5. Delete all resources from export library (except distributions)
     6. Delete export library APFEXPORT (including all distributions)

     8. Display resources in export library




Option
===> _

F3=Exit                 F6=Display messages                 F12=Cancel
```

If you already have an old export library you can consider running either of these options first:
5. Delete all resources from export library (except distributions) - or -
6. Delete export library APFEXPORT (including all distributions)

Copy resources to export library.

This option gives you these options:

1. Copy all the resources
2. Copy selected resources only
3. Copy the resources used in already copied overlays
4. Copy auto download defs and soft font members for all copied fonts

The options are explained below:

1. Copy all the resources
Use this option to export all overlays, overlay selectors, fonts, soft fonts, images, palette colors, form type tables, split definitions, sort definitions, PDF bookmarks, PDF embedding

definitions, finish definitions, AFC definitions and auto download specifications. This should be avoided for normal support if possible as the export file can be quite large. Page 633 in **Appendix P** lists the elements that cannot be exported/imported.

2. Copy selected resources only
Use this option to selectively copy resources for export. You can e.g. export specific overlays and then use option 3 and 4 to also export any resource referenced by these overlays. For normal support issues you should consider this option (followed by option 3 and 4 below).

3. Copy the resources used in already copied overlays
If you already have copied one or more overlays via option 2, then this will export any of these resources, that are referenced by the overlay(s):
Overlay selectors, fonts, images and palette colors. It will not export any related form type tables, soft fonts, autodownload specifications, finish definitions and AFC definitions. Any related soft font and auto download specifications can be exported with option 4 below.

4. Copy auto download defs and soft font members for all copied fonts
This copies any auto download setup and any soft fonts to the export that are related to the fonts, that are also marked for export.

```
         Copy InterForm 400 resources to export library              EXPORTD

Select one of the following resource types:
     1. Overlay definitions               21. ZEBRA fonts
     2. Font definitions                  22. ZEBRA soft fonts
     3. Soft fonts                        23. ZEBRA images
     4. Auto download definitions
     5. Images
     6. PCL-files
     7. Selector definitions
     8. Split definitions
     9. Sort definitions
    10. Finishing definitions
    11. AFC definitions
    12. Form type table
    13. Palette colors
    14. PDF bookmark definitions
    15. PDF embedding definitions
Option
===> __

F3=Exit                 F6=Display messages                 F12=Cancel
```

If you select option 2 you can copy selected InterForm400® resources to export like shown above.

Note that when entering a specific overlay, only the definitions of the overlay are copied.
Any images, PCL-files, fonts etc. which the overlay definitions is referring to, has to be copied separately e.g. by use of option '3. Copy the resources used in already copied overlays' , which will also copy any overlay selector referring to any of the exported overlays.

If you export a PCL/PDF line barcode (EAN, Code 39, code128 and interleaved 2 of 5) then a barcode soft font will be added in the export distribution for support for older (pre 2014) versions of InterForm400. The soft font will be named BARCDExxxx, where xxxx is the font number.

WARNING

If you use option '3. Copy the resources used in already copied overlays' the necessary soft fonts will NOT be included. If you are using soft fonts you should also run option 4. Copy auto download defs and soft font members for all copied fonts.

WARNING

*Autodownload settings for PCL printer groups that does not include the output queue *ALLPCL cannot be exported.*

Work with resources in export library

When all selections have been made, you can verify that all relevant resources have been copied to the export library, by using option **3**. **Work with resources in export library**, in the export menu. Here you can also chose to rename the resources. Renaming resources in the export library will update referenced resources - please refer to **Appendix P** on page 627 for details.

Work with distribution

This option is used to create a distribution file, which you need to send out the export.

```
         Work with Distributions                                    EXP600D

Type options, press Enter.
  1=Send savefile   4=Delete savefile and PC-file   5=Display savefile
  9=Save to tape   11=Create PC-file in folder APF3812

Opt   Distribution  Description                                      Status
 __   EXPORT.001    Export of overlay IF400DEMO                      *BOTH

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

In this screen you will have an overview of existing distributions made.
Use F6 to create a new distribution.

```
         Create Distribution                                        EXP610D

Type choices, press Enter.

Suffix . . . . . .  EXP
Description  . . . .  This is my demo export file
Target version . . . .  *CURRENT      *CURRENT, *PRV

Create . . . . . .  2             1=Savefile only
                                  2=Savefile and PC-file

Notice:
When you create a distribution all the current resources in the export-
library are copied to a savefile named EXPORT.xxx, where xxx is the suffix.
If you create a PC-file based on a distribution, it will be placed in the
/APF3812Home/Work directory, having the same name and content as the savefile.

The content of a distribution can not be changed later.


F3=Exit   F12=Cancel
```

Suffix A three letter extension for the save file (and stream file).

Target version

The target version of InterForm400 on which you intend to import the export file. You should state ***PRV** if you want to be able to import the file in an installation running last years version e.g. if you want to be able to import in a 2014 version when exporting from a 2015 version.

Note: If some of the resources are using a functionality not supported in last years versions, then these resources will be listed and you will be asked to remove them from the export before you can finalize the export.

With ***CURRENT** any InterForm400 installation running the same year versions (and newer) should be able to import the export file.

You have the possibility of choosing conversion to a save-file only or both a save-file and a PC-file. The suffix you enter is a way for you to separate the distribution from other already created distributions. After you have entered the details for a particular distribution, a save file will be created in the APFEXPORT library and optionally, a PC-file will be added to the /APF3812Home/Work directory.

You can now locate the export PC-file in the /APF3812Home/Work directory with file name "export.xxx"., This file can be send by e-mail, to your consultant or to another InterForm400® site..

NOTE

It is possible to operate with more than one export/import library at a time. Refer to **Appendix P** on page 634 for more information.

22. Import of InterForm400 Resources

Use this option to import InterForm400® resources. All details of the export/import feature are included in **Appendix P** on page 627.

Select option **1. Create empty APFIMPORT import library**, to create an empty import library. If you have an old import library you should normally start a new import by first deleting the existing one (using option '5. Delete the APFIMPORT import library') before you create the new import library.

```
         Work with import of InterForm 400 resources                  IMPORTD

Distribution  . . . . . :  EXPORT.TST               System.......: PMK250
From system . . . . . :  PMK250                     Import by  . : KSE
From version  . . . . . :  2014.M01                 Date . . . . : 2014-03-26
From user . . . . . :  KSE                          Time . . . . : 13:06
Description . . . . . :  test export from 2014M01

Select one of the following:

     1. Create APFIMPORT import library with empty files
     2. Receive distribution into import library
     3. Work with resources in import library
     4. Transfer resources to production library
     5. Delete the APFIMPORT import library
     6. Display resources in import library

     8. Start journaling
     9. Work with changes
Option
===> _

F3=Exit                F6=Display messages                F12=Cancel
```

After the import library has been created, use option **2. Receive distribution into import library**, to receive the distribution into the library. Select the required method for receiving the distribution.

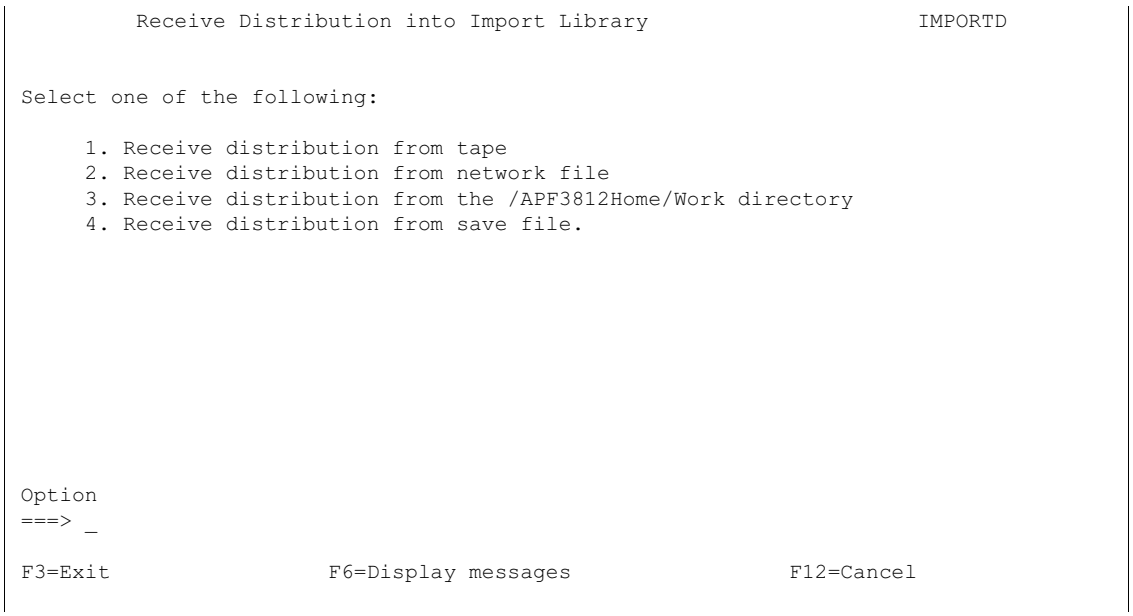
3. Work with resources in import library

Upon having received the relevant InterForm400® resources, you will be able to see the various resources in the import library, by using option **3. Work with resources in import library**. Here you can also chose to rename the resources. Renaming resources in the import library will update referenced resources - please refer to **Appendix P** on page 631 for details.

Before transferring the resources in the import library to the production library, you need to start Journaling. This gives you the possibility of undoing the import.

Note that if a resource i.e. a overlay called INVOICE is imported, and a overlay also called INVOICE already exists, this will be overwritten without further notice.

Journaling can be started by the option **8. Journaling** in the Import menu.
If you should regret an Import to the production library, use the option **9. Work with changes**. Here you can also see and roll back any change of overlays uploaded from the InterForm400® graphical designer (Listed with function: ***PC-SAVE**).



4. Transfer resources to the production library

```
         Work with import of InterForm 400 resources                  IMPORTD

Distribution  . . . . . :  EXPORT.TST               System.......: PMK250
From system . . . . . :  PMK250                     Import by  . : KSE
From version  . . . . . :  2014.M01                 Date . . . . : 2014-03-26
From user . . . . . :  KSE                          Time . . . . : 13:06
Description . . . . . :  test export from 2014M01

Select one of the following:

     1. Create APFIMPORT import library with empty files
     2. Receive distribution into import library
     3. Work with resources in import library
     4. Transfer resources to production library
     5. Delete the APFIMPORT import library
     6. Display resources in import library

     8. Start journaling
     9. Work with changes
Option
===> _

F3=Exit                 F6=Display messages                 F12=Cancel
```

Entering the Import menu after having received the distribution file into the import library, the details of the distribution file will be stated in the top of the Import menu.

Selecting option **4. Move resources to production library** will give you an overview of the resources ready to be moved to the production library.

```
        Confirm move of all resources to production library          IMP820D

Press F10 to move all resources to production.
Press F3 or F12 to cancel.


Resource               Type        Notice
SAMPLE/IF400DEMO       *OVERLAY    Exists
SAMPLE/RULER           *OVERLAY    Exists

                                                                        End
F3=Exit   F10=Move all resources to production   F12=Cancel
```

This screen will inform you if the overlays being moved to the production library, already exists. In this case you might want to rename the overlays. When you press F10 InterForm400 will verify if the data base files are journaled before move the resources into production. If the files are not journaled you can start the journaling via option '8. Start journaling'.

NOTE

If there is no printer group containing the *ALLPCL printer group at import of PCL autodownload settings, then such a printer group (named *PCL) will be created during import.

Simular to option 4 the option '**6. Display resources in import library**' lists all the resources. This option will however only list the objects with the option to print the list with F10.

As mentioned before accepting the move of resources will cause existing resources with the same name to be overwritten.

Renaming resources to be moved to the production folder could be done under function **3. Working with resources in import library.**

In this example, we have chosen to work with overlay definitions.

```
Work with File-sets in Import Library                        IMP412D

Position to . . . . . .              File-set

Type options, press Enter.
  1=Move to production   4=Delete   7=Rename file-set
  12=Work with overlays in file-set

Opt   File-set      Description                                    Notice
 12   SAMPLE        InterForm 400 Samples                          Exists

                                                                      End
F3=Exit   F12=Cancel
```

Note: Renaming e.g. file sets that already exists (using option **7. Rename file set**) will prevent file sets from being overwritten.
Notice, however, that the users must be connected to the new file sets, in order to use the overlays imported.

Option **9. Work with changes** on the Import menu enables you to take advantage of the fact, that every import requires journaling of InterForm400® files. Using this option you can e.g. regret the last import (*IMPORT) or changes done in the graphical designer (*PC-SAVE) and roll the InterForm400® back to the state prior to the import. (Use e.g. option **1=Rebuild to status before change** on the Work with changes menu.

40. Install/upgrade InterWord 400

This option can be used for installing or upgrading InterWord400™. This is done by installing a PTF, which must be placed in the APF3812 folder.

You are prompted for what PTF you want to install like option **50. Apply PTF from folder APF3812**. Enter the PTF number, that you want to install, press Enter and this screen below is shown. Press F10 to confirm the install or upgrade of InterWord400™.

```
         Apply PTF from  folder  APF3812                              PTF100D

PTF number . . . . . :    2010

Press F10 to install this PTF,  or
press F3 or F12 to  cancel.

PTF description  . . . . :   Install InterWord  version  2.30.

This PTF installs product InterWord  400.

Library DCA400 will be created during installation of this  PTF.

To enter InterWord issue the following  command:
GO  DCA400/INTERWORD

See InterWord 400 manual for more  information.



F3=Exit                F10=Install  PTF                        F12=Cancel
```

50. Apply PTF from the /APF3812Home/PTFs directory

With this option you can load InterForm400® PTF's from the /APF3812Home/PTFs directory. These PTF's can be used to correct minor problems that will not result in new releases. Enter the PTF number you have received and copied into the /APF3812Home/PTFs directory. I.e. if the file was named APF0015.PTF type 0015.

60. Install Swiftview at drive C:

With this option directory APF3812 is created on a PC`s C-drive and the Sview.exe file is copied from System i directory /APF3812Home/View to the created C:\APF3812.

The drive letter on the PCs is configurable - Refer to page **343** for information.

See further information about the PCL-viewer, SwiftView on page 553.

70. Install InterForm Designer on your PC

This installs the InterForm400® graphical designer on the **C**: drive of the PC. See page **584** for the installation procedure of the graphical designer.

75. Prepare server to support InterForm Designer

This option starts the servers necessary for running the graphical designer. Refer to page **584** for more information.

80. Install InterFax 400

In order to install InterFax400 you will need a CD in the CD-drive with Interfax included. Please note that InterFax is not included in the normal InterForm400 installation Zip file. Refer to the InterFax manual for installation procedures. Contact your local InterForm400 support to get a trial copy of InterFax.

How to create PDF files

InterForm400® is capable of creating PDF output. This can be done using the CL-command, APF3812/MRGSPLFPDF - Merge Spool File PDF. This command merges a spool file with an overlay or overlay selector like a normal PCL merge.

Note: You can also create PDF files with the **PDF File naming finishing definition**. Refer to page 254 for more information about this function.

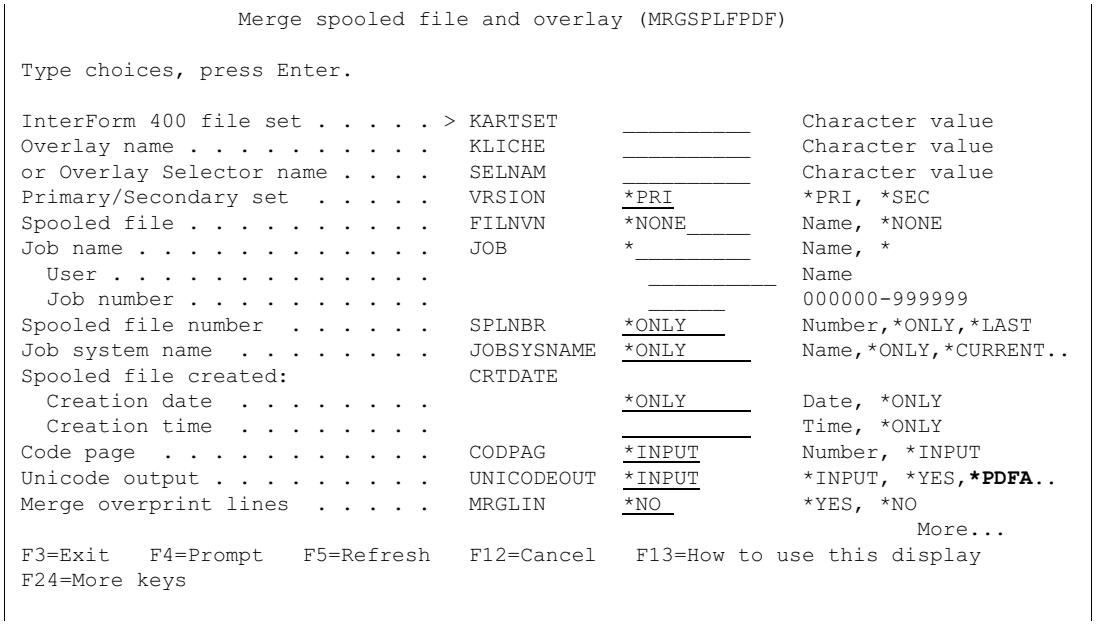
The PDF files generated are **version 1.4** (possible to open in e.g. Acrobat Reader 5 and newer) - unless you are generating a unicode (or PDF/A) PDF file. **Unicode and PDF/A** files are generated as **version 1.7** - possible to open in Acrobat Reader 8 and newer.

The size of the resulting PDF file can be up to 10Gb.

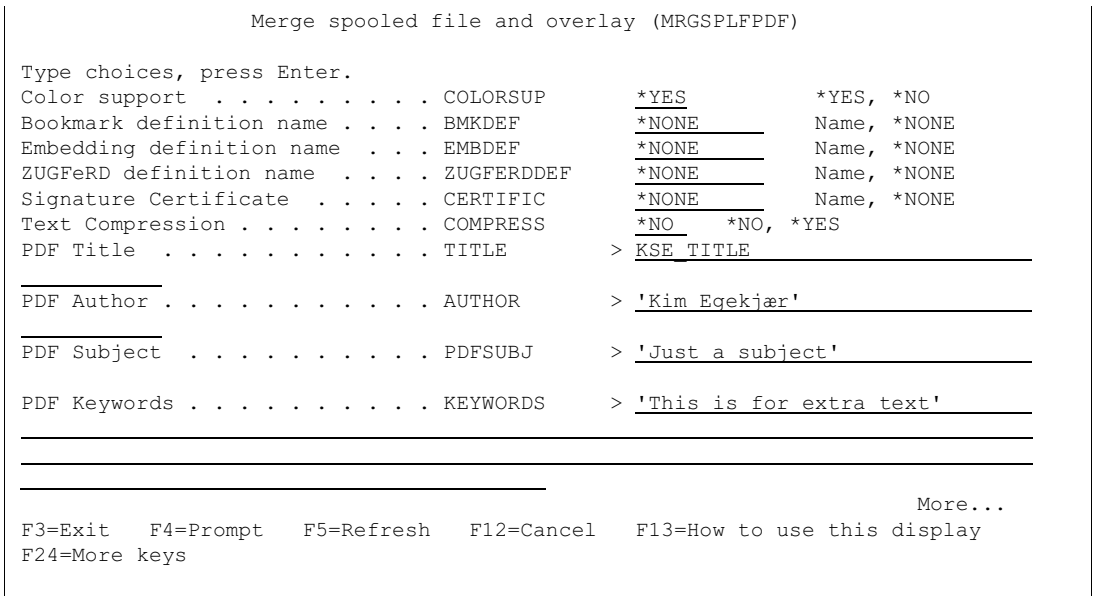
NOTE

In order to get PDF output you need to purchase the PDF module for InterForm400.

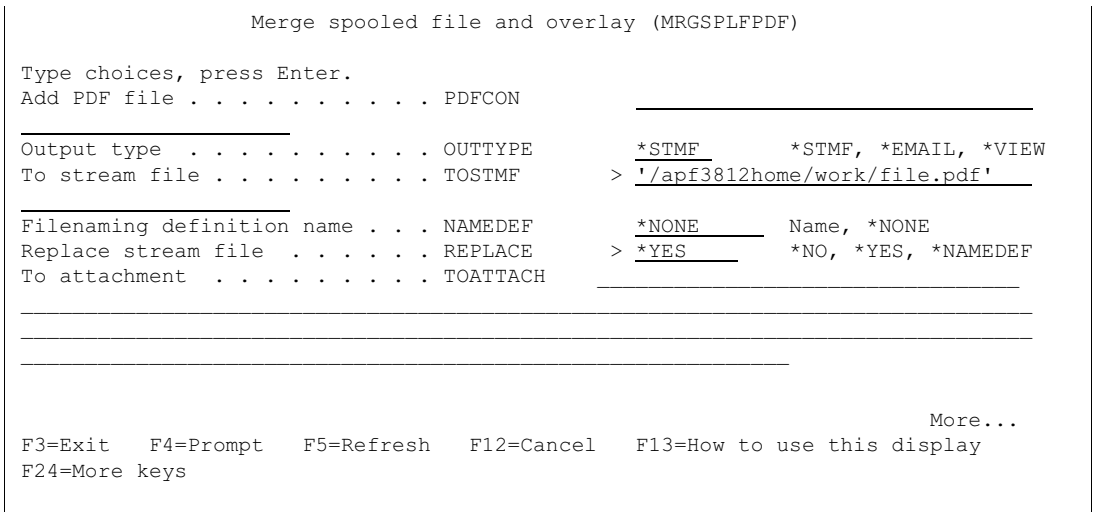
When prompting the command (with F4), all parameters can be seen when pressing F9.



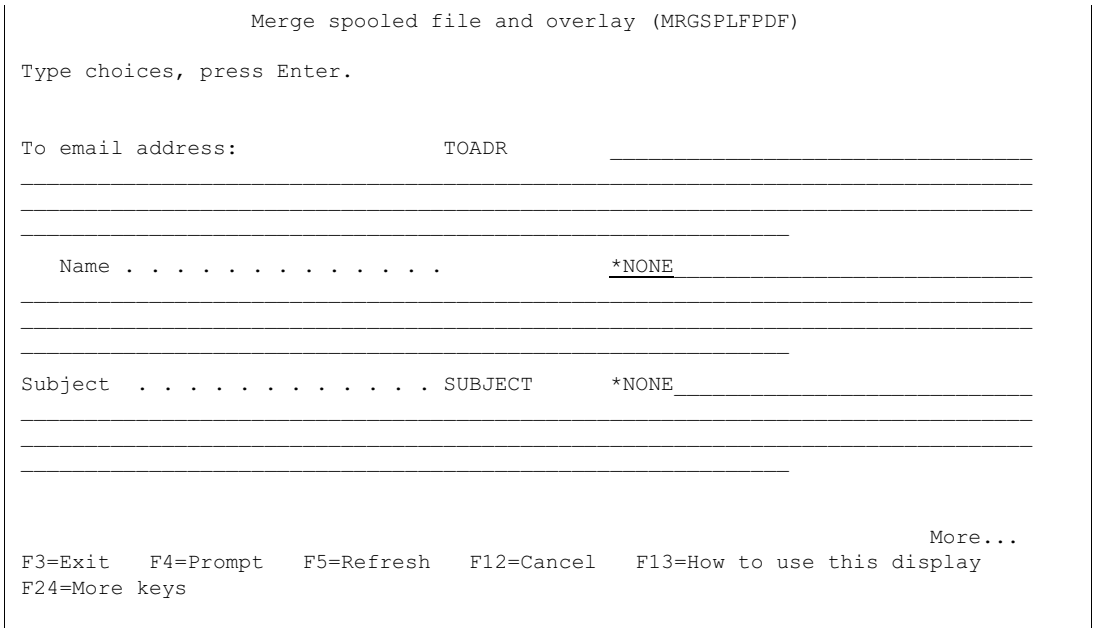
```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.

InterForm 400 file set . . . . . > KARTSET      __________     Character value
Overlay name . . . . . .          KLICHE       __________     Character value
or Overlay Selector name . . . .  SELNAM       __________     Character value
Primary/Secondary set  . . . . .  VRSION       *PRI           *PRI, *SEC
Spooled file . . . . . .          FILNVN       *NONE_____     Name, *NONE
Job name . . . . . .              JOB          *_________     Name, *
  User . . . . . .                               __________  Name
  Job number . . . . . .                       ______        000000-999999
Spooled file number  . . . . . .  SPLNBR       *ONLY          Number,*ONLY,*LAST
Job system name  . . . . . .      JOBSYSNAME   *ONLY          Name,*ONLY,*CURRENT..
Spooled file created:             CRTDATE
  Creation date  . . . . . .                   *ONLY          Date, *ONLY
  Creation time  . . . . . .                   _____          Time, *ONLY
Code page  . . . . . .            CODPAG       *INPUT         Number, *INPUT
Unicode output . . . . . .        UNICODEOUT   *INPUT         *INPUT, *YES,*PDFA..
Merge overprint lines  . . . . .  MRGLIN       *NO            *YES, *NO
                                                                        More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```



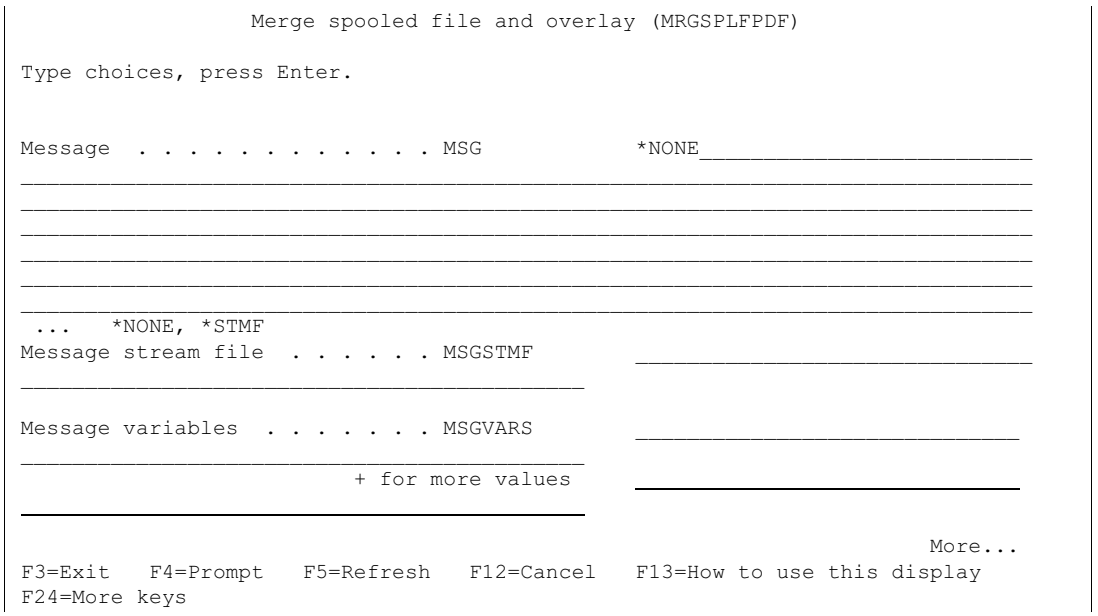
```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.
Color support  . . . . . . . . . COLORSUP       *YES          *YES, *NO
Bookmark definition name . . . . BMKDEF         *NONE         Name, *NONE
Embedding definition name  . . . EMBDEF         *NONE         Name, *NONE
ZUGFeRD definition name  . . . . ZUGFERDDEF     *NONE         Name, *NONE
Signature Certificate  . . . . . CERTIFIC       *NONE         Name, *NONE
Text Compression . . . . . . . . COMPRESS       *NO     *NO, *YES
PDF Title  . . . . . . . . . . . TITLE       > KSE_TITLE
_____
PDF Author . . . . . . . . . . . AUTHOR      > 'Kim Eqekjær'
_____
PDF Subject  . . . . . . . . . . PDFSUBJ     > 'Just a subject'

PDF Keywords . . . . . . . . . . KEYWORDS    > 'This is for extra text'
_____________________________________________________________________
_____________________________________________________________________
_____________________________________

                                                                More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```



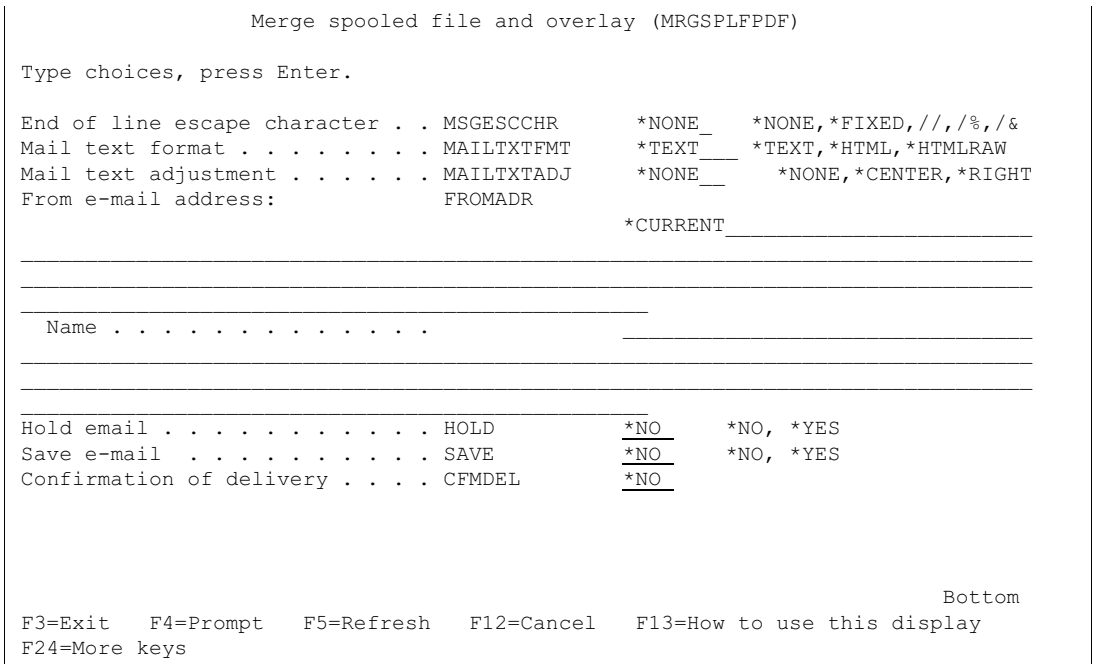
```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.
Add PDF file . . . . . . . . . . PDFCON
_____________________
Output type  . . . . . . . . . . OUTTYPE       *STMF       *STMF, *EMAIL, *VIEW
To stream file . . . . . . . . . TOSTMF      > '/apf3812home/work/file.pdf'
_____________________
Filenaming definition name . . . NAMEDEF       *NONE       Name, *NONE
Replace stream file  . . . . . . REPLACE     > *YES        *NO, *YES, *NAMEDEF
To attachment  . . . . . . . . . TOATTACH    ____________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________

                                                                More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```



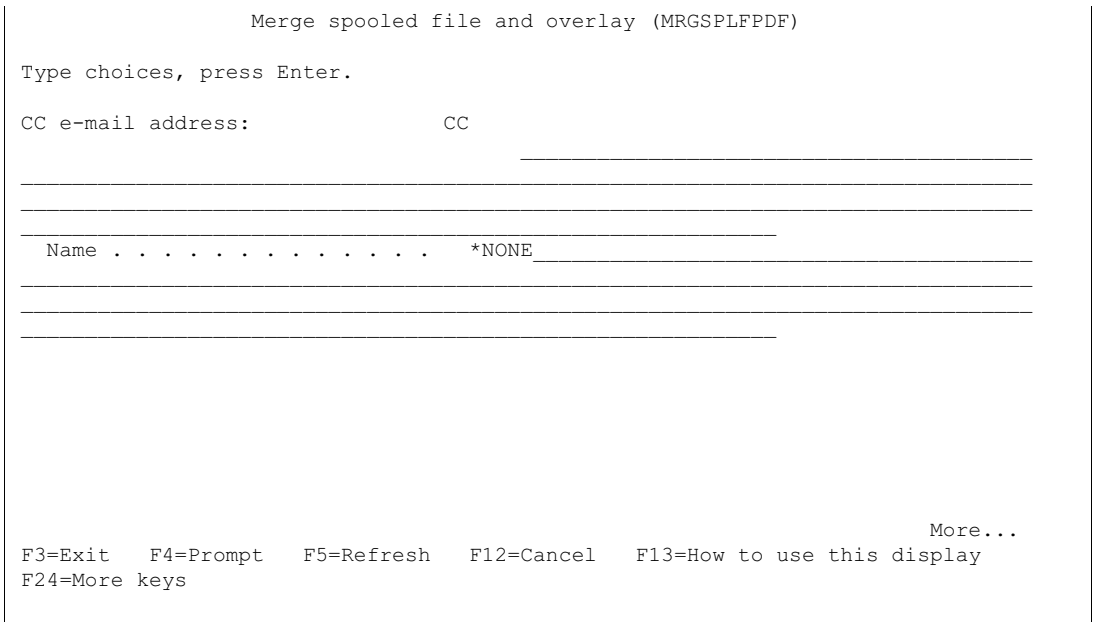
```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.


To email address:                TOADR       ____________________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________

   Name . . . . . . . . . . . . .            *NONE
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________

Subject  . . . . . . . . . . . . SUBJECT     *NONE_______________________
_____________________________________________________________________
_____________________________________________________________________
_____________________________________________________________

                                                                More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

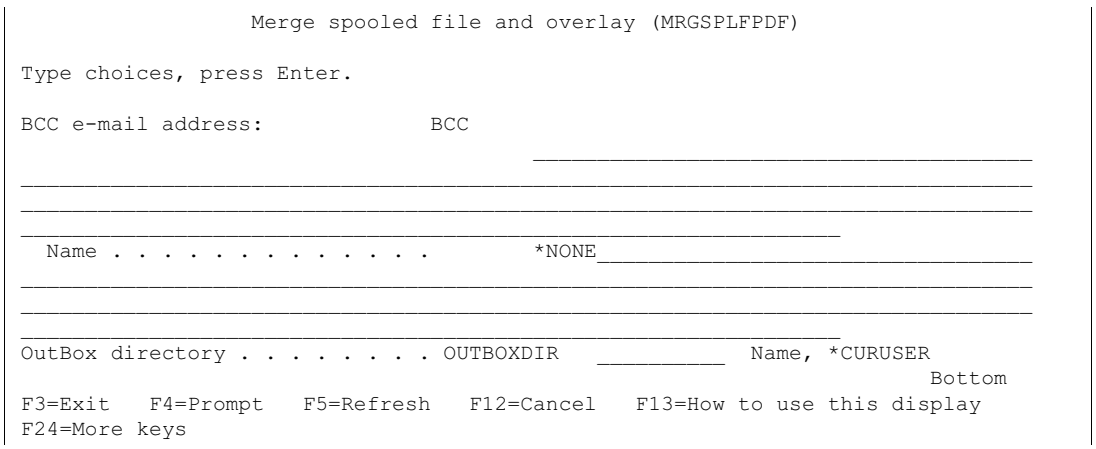


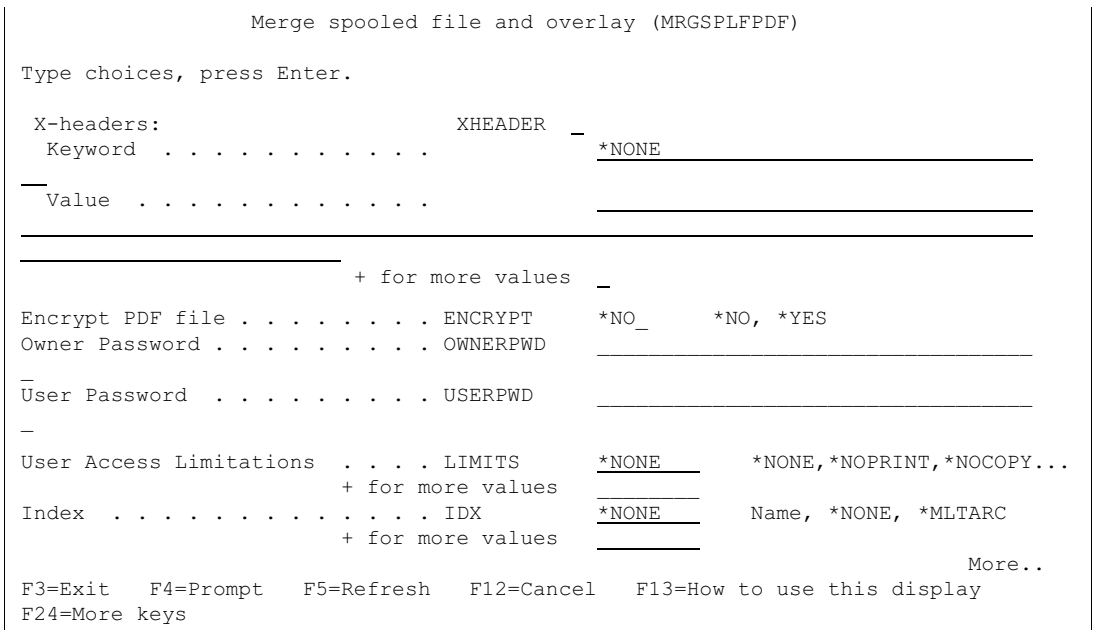
```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.


Message  . . . . . . . . . . . . MSG            *NONE_____________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________________________
 ...   *NONE, *STMF
Message stream file  . . . . . . MSGSTMF         _____________________________
_____________________________________________

Message variables  . . . . . . . MSGVARS         _____________________________
_____________________________________________
                          + for more values      _____________________________
_____________________________________________

                                                                        More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

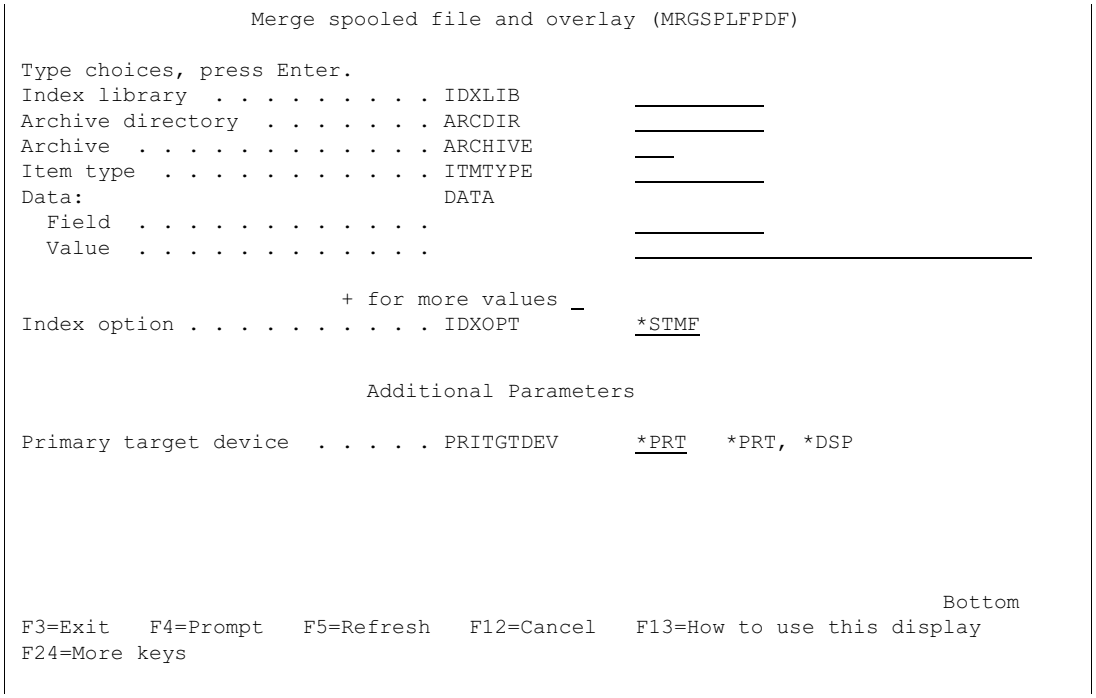


```
                Merge spooled file and overlay (MRGSPLFPDF)

Type choices, press Enter.

End of line escape character . . MSGESCCHR       *NONE_   *NONE,*FIXED,//,/%,/&
Mail text format . . . . . . . . MAILTXTFMT      *TEXT___ *TEXT,*HTML,*HTMLRAW
Mail text adjustment . . . . . . MAILTXTADJ      *NONE__    *NONE,*CENTER,*RIGHT
From e-mail address:             FROMADR
                                                 *CURRENT____________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________
  Name . . . . . . . . . . . . .                 ____________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________
Hold email . . . . . . . . . . . HOLD            *NO      *NO, *YES
Save e-mail  . . . . . . . . . . SAVE            *NO      *NO, *YES
Confirmation of delivery . . . . CFMDEL          *NO




                                                                         Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```


Merge spooled file and overlay (MRGSPLFPDF)
Type choices, press Enter.
CC e-mail address: CC
Name . . . . . *NONE
More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys


Merge spooled file and overlay (MRGSPLFPDF)
Type choices, press Enter.
BCC e-mail address: BCC
Name . . . . . *NONE
OutBox directory . . . . . OUTBOXDIR Name, *CURUSER
Bottom
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys


Merge spooled file and overlay (MRGSPLFPDF)
Type choices, press Enter.
X-headers: XHEADER
Keyword . . . . . *NONE
Value . . . . .
+ for more values
Encrypt PDF file . . . . . ENCRYPT *NO *NO, *YES
Owner Password . . . . . OWNERPWD
User Password . . . . . USERPWD
User Access Limitations . . . . LIMITS *NONE *NONE,*NOPRINT,*NOCOPY...
+ for more values
Index . . . . . IDX *NONE Name, *NONE, *MLTARC
+ for more values
More..
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys



If you want to send to an email group you should state '*GROUP' as the 'To e-mail address' and the name of the email group as the name of the receiver or in short: TOADR(*GROUP MAIL_GRP), where MAIL_GRP is the name of the email group. The email group must be written in capital letters.

Special parameters for this command include (listed in sequence as they appear):

COLORSUP Specify if the PDF output is to be B/W or color.

BMKDEF If wanted you can refer to a bookmark definition and get bookmarks in the created PDF file. See on page 320 how you create a bookmark definition. This value can also be determined by a used PDF file name definition - refer to the description of the **NAMEDEF** parameter.

ZUGFERDDEF If you want to create PDF invoices, that fits the ZUGFeRD standard, then you need to refer to the ZUGFeRD definition in this field. The XML+ module is required in order to use this feature. ZUGFeRD is described on page 307.

CERTIFIC You can digitally sign the PDF file with this reference. For description of digital signatures refer to the PDF security module for more information. This value can also be determined by a used PDF file name definition - refer to the description of the **NAMEDEF** parameter.

COMPRESS State *YES to compress the resulting PDF file. This will compress texts in the PDF file thus making the PDF file smaller.

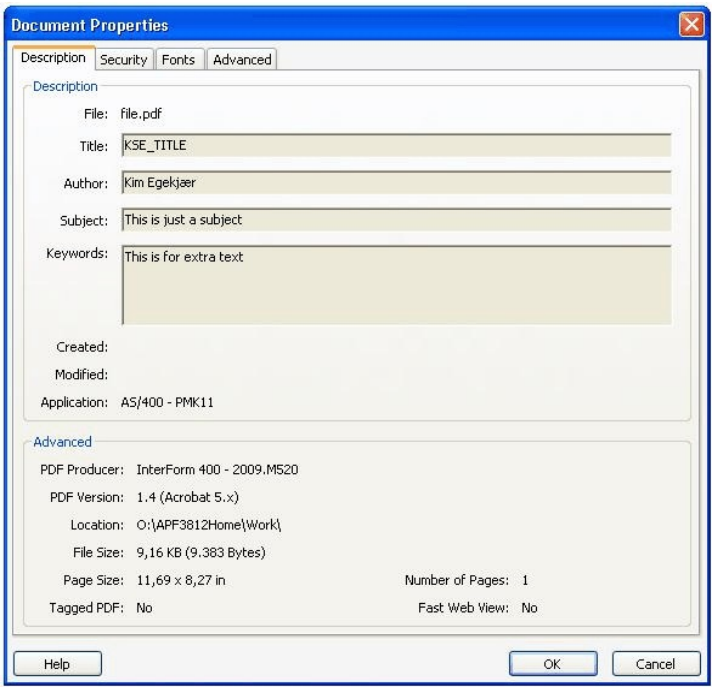
PDFCON This field is optional. In this field you can insert the path and file name of a PDF file, that should be added/appended to the PDF file, that resulted in the merge between the overlay and spooled file specified above. This can e.g. be used for adding general terms of delivery (or a page with a special offer) to the end of a PDF file without changing anything in the overlay(s) used.
The use of PDFCON require a license key, that includes the advanced PDF module. The use also require JAVA 1.6 and the AFC subsystem also need to run.

OUTTYPE

Specify ***EMAIL** for creating an E-mail with the PDF file as an attached file, ***STMF** to create a PDF stream file in IFS or ***VIEW** to view the result directly in Acrobat Reader (if associated with '.PDF').

TITLE, AUTHOR, PDFSUBJ and **KEYWORDS**

These fields are extra keywords, that can be assigned for the PDF file. These values can be seen if you click 'File' and 'Properties' in Acrobat Reader (after opening the resulting pdf file):



TOSTMF

When creating a PDF file using the *STMF option on the **OUTTYPE** parameter, you state where to place it and what to call it on the **TOSTMF** parameter. E.g. if you state: /APF3812Home/DEMO.PDF you create a file called DEMO.PDF in the APF3812Home directory. Use ***NAMEDEF** to refer to the path and file name stated in the PDF file naming definition stated in **NAMEDEF**. Remember that files, that are digitally signed cannot be created in QDLS.

NAMEDEF

If you insert a PDF file naming definition and use **TOSTMF(*NAMEDEF**) then the information in the PDF file naming definition will be used for the bookmark definition (**BMKDEF**), Signature certificate (**CERTIFIC**) and encryption (**ENCRYPT, OWNERPWD, USERPWD** and **LIMITS**) unless these parameters have the value *NONE or have a specific value other than blank.

REPLACE

States if the PDF file created is allowed to replace an existing PDF file. *NAMEDEF refers to the REPLACE value of the PDF file naming definition stated in the NAMEDEF parameter.

TOATTACH

If you are creating an E-mail, the **TOATTACH** parameter states what to call the attached file.

MSGSTMF

Either type in the contents of the e-mail in the MSG parameter or type ***STMF** in the **MSG** parameter and insert a stream file name here to use instead. It must be the path and name of an **.html file** that is placed in the IFS. The .html file can contain the variables *V1-*V9, that are substituted with the data found in the **MSGVARS** parameter. The html file must be utf-8 encoded.

MSGVARS

This list parameter can be used for defining the value of each variable ***V1-*V9** that can be substituted like described in MSGSTMF. The

variables are defined in numeric order i.e. the first value of **MSGVARS** is used for *V1, the second for *V2 and so on..

MAILTXTADJ

The mail text adjustment. The adjustment of the text in the MSG parameter if used. Possible values are:

***NONE**	The e-mail text is not aligned.
***CENTER**	The e-mail text is aligned around the center.
***RIGHT**	The e-mail text is right adjusted.

FROMADR Specify the e-mail address and name of the user, who is the sender of the e-mail. ***CURRENT** will retrieve the information from directory entry of the user running the current job.

HOLD Hold the email for later send via the mail log. This is not possible for IBM SMTP.

SAVE Save a copy of the email in /APF3812Mail/Log.

CFMDEL Confirm of delivery. Activate this to get a confirmation e-mail when the receiver opens the e-mail. Lotus Notes currently does not support this, so it does not work if the receiver is running Lotus Notes.

OUTBOXDIR Outbox directory (refers to a subdirectory inside /APF3812Mail/Outbox/ in the IFS). States the directory in which the outgoing e-mails will be stored. The directory will be created, if the directory does not exist. Use the command APF3812/CLRMAILLOG to clean up the directory for old e-mails (cleans the used database as well). If you state ***CURUSER** the directory will be named the same as the user running the current job.

XHEADER With this parameter you can add X-header information into the emails that you send out. With X-headers you can add hidden information into the outgoing email, that information can e.g. be used for index information when archiving . X-headers are also described on page 231.

ENCRYPT States if you want to encrypt the PDF file.

OWNERPWD States the owner password of the PDF file. Requires that the **ENCRYPT** parameter is *YES. When you open the file with this password all is allowed. This is the same as 'Master password' in the PDF file naming and E-mail finishing definitions.

USERPWD The user password can be used to open an encrypted PDF file with the limitations specified in the **LIMITS** parameter

LIMITS This specifies the limitations of the access to the PDF file when a user opens the PDF file (with the USERPWD password). Possible values are: *NOPRINT, *NOCOPY and *NOEDIT. Details for each value can be found on page 246.

PRITGTDEV The primary target device for the PDF file.

NOTE

Password protection and/or digital signature of the PDF file requires a purchase of the Digital Signature/PDF security module for InterForm400.

The **subject** and **message** is used for the e-mail. The **End of line escape character** parameter states which characters are to be interpreted as an end-of-line code in the message field (used only for e-mails).

Resources that can be used for PDF output

If you want to insert images, you can insert **TIFF** images (B/W images) or color **BMP** and **JPEG** images (color images) in the overlay. You can also insert **PNG** and **GIF** images from IFS. But note, that you can only insert PNG and GIF images by inserting &&IMG *COLOR commands in the merged spool file (see page 497.).

Design elements entered in overlay design e.g. frames, lines, shadings etc. are also supported for PDF output.

PCL files and **can not** be used for PDF output (They are ignored if included in the overlay).

You can **not** combine duplex overlays with a fixed back page overlay for PDF output. The fixed back page overlay is not included in the PDF output.

Fonts used in PDF output

When referring to specific type faces which e.g. normally could be printer resident type faces, the type faces are converted as follows:

Proportional Type faces (fonts) like 52, 4148, 4168, 16602, 24580 and 24607 are printed as Arial.

Proportional Type faces (fonts) like 5, 4101, 4113, 4197, 16901, 24591, 24623, 24703 and 25093 are printed as Times New Roman.

Courier is used for all fonts with fixed width.

If you want to use other type faces, you have to install the font as a True Type Font (TTF). See page **372**.

IFS directories used by MRGSPLFPDF

When using the MRGSPLFPDF command, a directory called APF3812Mail is created in IFS. Inside the APF3812Mail directory another 3 directories are created:

APF3812Mail/Log
If you specify SAVE(*YES) in order to save the e-mail, the e-mail will be saved as an .eml file in this directory. Old emails in this directory are **not** automatically deleted via the APF3812/CLRMAILLOG command.

APF3812Mail/MergeLog
In earlier versions of InterForm400® a copy of each created PDF file was saved in this directory. It is a good idea to clean up this directory.

APF3812Mail/OutBox
This directory holds the e-mails, that can not be sent, if e.g. the Mail Server Framework is not started. It also contains any email sent via InterForm400 SMTP. Old emails in this directory should be deleted with the APF3812/CLRMAILLOG command, which is recommended to run on a regular basis e.g. via the OS400 job scheduler.

APF3812Mail/PDFtemp
Directory for temporary work files used when creating PDF files. Used files are automatically deleted.

Refer to page **581** for information of how to enable SMTP on the System i.

Creating PDF/A Compliant PDF Files

If you want to archive PDF files for very long term archiving, then it can be a good idea to create PDF files that are PDF/A compliant, making it more likely that the PDF files can be opened correctly in a very distant future.

To help you with that InterForm400 also offers the ability to create PDF files that are PDF/A compliant. For an in dept description of PDF/A you can e.g. consult the site: www.pdfa.org

From the 2013 versions of InterForm400 the PDF/A compliant files are either PDF/A-2b or PDF/A-3b compliant. Earlier versions of InterForm400 generated PDF/A-1b compliant files.

The main differences between PDF/A-1b and PDF/A-2b (and PDF/A-3b) are:

- The new formats are generated in the PDF 1.7 format, which means, that the PDF/A files can be opened by e.g. Acrobat Reader 8 and newer. Pre-2013 versions generated PDF/A files in the PDF 1.4 format, which can be opened with e.g. Acrobat Reader 5 and newer.
- PDF/A-3b includes the possibility to embed non-PDF files.
- The PDF/A files created in version 2013 and future versions are a bit smaller compared to the pre-2013 versions.
- The new formats has other advantages e.g. supporting layers of images.

If you combine PDF/A with embedded files (described in **Appendix U** on page 653) The PDF/A files will be PDF/A-3b compliant.

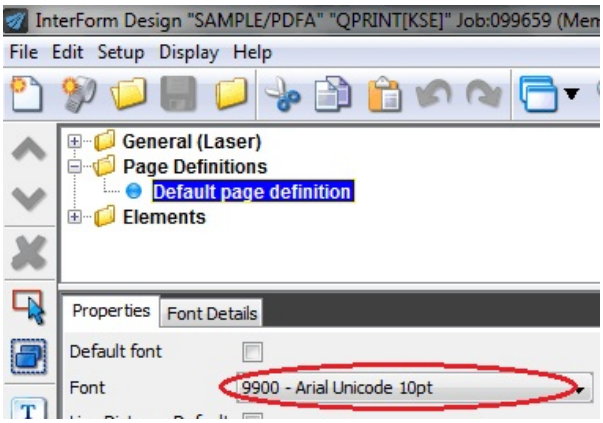
The Requirements

- Before you can create PDF files that are PDF/A compliant, you will need to **install a unicode soft font**. The unicode soft font is installed as a TTF (True Type Font) as described on page 373.

- You need to link all used font numbers with a unicode soft font for the ***PDF** printer group in Autodownload (in the font menu) as shown on page 375.

  Remember that even the font number referenced on the header of the overlays also need be linked with a unicode soft font in InterForm400:

```
         Design InterForm 400 overlay                                  APF300D

Overlay name          PDFA

Overlay text          PDF/A demo overlay
Line spacing          040       in 1/240 of an inch (*INPUT, 1-720)
Rotation              000       (*INPUT, 0, 90, 180, 270)
Extra left margin
        positions      0        (0-99)
Maximum number of
  print positions     378       (1-378)
Extra blank lines
           on top      0        (0-99)
Font                  9900      *INPUT, fontnumber     F4=List
Extended page def.    N         (Y N)
Drawer / Papertype    *PRINTER  (*INPUT, *PRINTER, 1-256, Name)   F4=List
Paper Size            1         F4=List
Pages per side         1
Copy management       N         (Y N)



F3=Exit      F4=Prompt          F11=Delete this overlay          F12=Cancel
F13=Set view/print parameters   F14=View           F18=DSPSPLF   F19=DSPPFM
```

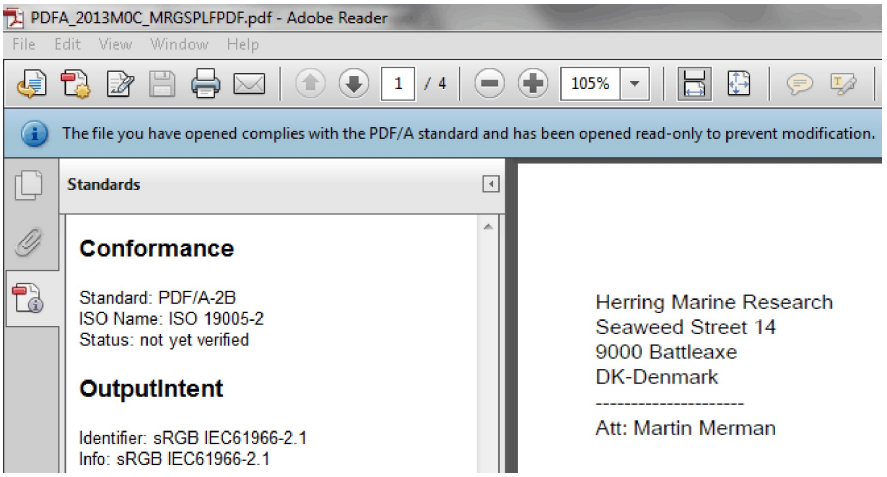


- You will also need to specify **Unicode Output=*PDFA**, when you merge (with a spooled file), as shown on page 176, when using the PDF file naming definition, and with **UNICODEOUT(*PDFA)** as indicated on page 449, on the **MRGSPLFPDF** command.

- It is **not allowed to encrypt** a PDF/A file, so it is not possible to encrypt these files. (The PDF Security module is required for encryption).

The Result

When you open a PDF/A compliant PDF file, you will see this in Acrobat Reader:



- indicating that the PDF file is PDF/A compliant.

Appendix A - Installation

System Requirements

Your **System i** must run at least OS/400 **version 6 release 1** modification 0 or newer.

Disk space required for InterForm400 is 600 Mb not including additional modules (e.g. InterWord400, Interfax400..). During install additional 500 Mb storage is required for a temporary save file.

The printers which are used with the InterForm400® system should be configured as 3812 model 1 (non-IPDS). Auto-configuration will, on most protocol converters for HP printers or compatibles, result in a 5219 device definition. This will bring some limitations to the system, and if the protocol converter can not be configured to report to the System i as a 3812 device it is recommended to make the device description manually (see page 471) and disable auto-configuration on the system.

Java Runtime Environment is required for some features e.g. the PDFCONCAT command, where support for JRE Version 1.7 is required. The available Java versions (per OS400 Version) can be found via this link:
http://www-01.ibm.com/support/docview.wss?uid=nas8N1011999

Only exception to the rule about configuring as a 3812 is when the printer port of a 3197 display station is used. In this case the configuration should be for a 4214.

First Time Installation

The system is delivered either as a zip file.

It is recommended that you follow the steps described in the **Getting Started** section on page 26.

The End User License Agreement

During the installation you will be asked to accept the End User License Agreement (EULA). After the installation you can at any time view this license via the InterForm400 by selecting '70. Configuration and licences' from the InterForm400 Main Menu followed by option '60. Display InterForm400 End User License Agreement'. Remember to press <Page Down> to view the complete license agreement.

License Codes

The license code can be entered by selecting '**70. Configuration and licences**' followed by **'50. License Information'** from the InterForm400® **Main menu**.

To supply you with a license code you need to provide the **serial number**, the **model** of your iSeries and **feature code** (DSPSYSVAL QPRCFEAT)..

This information can be displayed in option **50. License Information** in the InterForm400® **Configuration menu**:

```
         Work with licence information                              LIC350D

  InterForm 400 version . . :  2017.M01
  Model / Feature . . . . . :  270  22A2
  Serial number . . . . . . :  65BD1BB
  Operating system  . . . . :  V5R3M000

Type options, press Enter.
  2=Change  5=Display

Opt   License code
 _    Production key
 _    Test key                  Not applied
 _    Mirroring key-1           Not applied
 _    Mirroring key-2           Not applied









F3=Exit               F12=Cancel
```

Use option 5=Display to display the current license code. If you are mirroring the machine and thus wants to insert a license code for the other serial number you can insert the license code for your mirroring machine as either Mirroring key-1 or Mirroring key-2.

Enclose a printout of this screen when ordering a production code, or write the first five lines of information on your purchase order. Use "2=Change" for one of the license codes and paste the license code into this screen and press Enter.

InterForm400 can run a permanent code and a temporary code simultaneously: When the temporary code runs out, InterForm400 will fall back to the permanent code.

Release Update

WARNING

***If** your current InterForm400® is configured as a light version (the text **LIGHT version** will be displayed in the heading of the InterForm400® main menu) the AFC-definitions AFC_INPUT1 and AFC_INPUT2 will be preserved. **If** your current InterForm400® configured as a **test or production version** (the text **LIGHT version** is not displayed in the heading of the InterForm400 main menu) the AFC-definitions AFC_INPUT1 and AFC_INPUT2 will be **overwritten** by the default definitions of the InterForm400® demo.*

NOTE

It is advised to read the remarks on page 51 if you intend to upgrade from a pre 2007 version.

NOTE

During upgrade the directory '/APF3812Home/lib' (or '/IASPDEV/APF3812Home/lib' if you are running iASP) will be renamed into 'APF3812Home/lib.OLD.version'. Refer to page 26 for additional information about iASP support.

When you export any of the **line barcodes** EANxx, Code128, Code39 and Interleaved 2 of 5 (barcodes based on soft fonts for PCL), then a soft font is added in the export library for backwards compatibility. The barcode soft font is named BARCDExxxx, where xxxx is the font number.

Important notice regarding barcodes: During upgrades from pre 2014 versions all line barcodes (that are based on soft fonts) like EANxx, Code128, Code39 and Interleaved 2 of 5 are all converted into the new, editable format. The settings of the new barcodes are determined in this way:

1. If any soft font is linked to a barcode font number, then the **soft font settings has the priory** for the barcode settings.
2. If no soft font is linked to the barcode font number, the font number settings are used. This means, that if someone has changed the font nummer settings (height/width) without generating a new soft font (which is a very bad idea), then the PDF and PCL result will be different in the pre 2014 versions. After the upgrade the **PCL output will be unchanged and the PDF output will after the upgrade adapt to the PCL** result - if a barcode soft font is found.

Normally you upgrade InterForm400 via an installation file found on our download site. You normally then just unzip the file and run the RSTLIBPC.EXE file as described on page 28. An alternative way to restore the APF3812NEW library is also shown here

After the restore of the APF3812NEW library you start the upgrade like the first time installation with the command: APF3812NEW/APF3812NEW and this will follow:

The first screen informs you that any objects in the QTEMP library of the installation/upgrade job will be deleted (confirm with 'G' for 'Go'):

```
                          Display Program Messages

Job 264723/KSE/QPADEV000B started on 28/03/14 at 08:35:43 in subsystem QBASE
Library QTEMP will be cleared. (C G).









Type reply, press Enter.
  Reply . . .  G

F3=Exit    F12=Cancel
```

The screen below will only appear if you have added journaling of extra objects in the journal APF3812/APFJRN. The screen will show a list of any objects, that are normally not journaled in InterForm400:

```
       Objects journaled to APF3812/APFJRN prevents upgrade.        JRN440D

Please end journaling to be able to upgrade. To end journaling use one or
more of the following commands: ENDJRN, ENDJRNPF and/or ENDJRNOBJ.
Press Enter to continue.

Type        Object
*FILE       APF3812/APFLCKP









                                                                       End
F3=Exit    F12=Cancel
```

If you see the screen above you are probably trying to upgrade InterForm400 on a mirrored machine, where the journal is used for replicating changes. What you need to do is to end journaling for each object mentioned above e.g. with the commands:
ENDJRN
ENDJRNPF
ENDJRNOBJ

Refer to page **646** for more information of how to solve this. After ending journaling you need to restart the installation or upgrade again with the command APF3812NEW/APF3812NEW.

Initially the End User License Agreement is shown (press <Page Down> to view it all). Press F16 to accept this agreement.

InterForm400® then tests if any user exit programs called by InterForm400® are not owned by QSECOFR (They must be owned by QSECOFR because of security). If any such programs are called from the current InterForm400® installation they are listed below:
(You will not see the screen, if all is OK).

```
                                                        System . . :  INTER03
*******************************************************************************
*                          Security changes required                          *
*                                                                             *
*  Owner of all InterForm exit programs must be changed to QSECOFR            *
*                                                                             *
*  Press F10 to change owner to QSECOFR.                                      *
*  Press F3 or F12 to cancel.                                                 *
*                                                                             *
*******************************************************************************

Program     Library     Description
TEST_AUT    KSE         Sample source for a AFC function-8 program









                                                                        Bottom
F3=Exit   F10=Change owner to QSECOFR   F12=Cancel
```

You must confirm the change of object owner for all the programs with F10 before the installation proceeds.
You are then prompted to choose your preferred language for the installation:

```
                        InterForm 400 version 2018.M01              INTER02

DE: Wählen Sie bitte eine Sprache aus, während verwendet zu werden installieren
    Eingabetaste --> Weiter

DK: Vælg sprog for instruktioner under denne installation.
    Tryk på Enter for at fortsætte.

ES: Seleccione por favor un lenguaje para ser utilizado durante instalan.
    Pulse Intro para continuar.

FR: Veuillez choisir la langue à utiliser pendant l'installation.
    Appuyez sur ENTREE pour continuer.

EN: Please select a language to be used during install.
    Press Enter to continue.

PT: Favor selecionar uma língua a ser usada durante a instalação.
    Aperte Enter para continuar.

EN  DE=Deutsch, DK=Dansk, EN=English,
    ES=Españoles, FR=Français, PT=Português

F3=Exit   F12=Cancel
```

The Installation will automatically detect if a version of InterForm400® is on the system, and if so, the following screen will be displayed:

```
INS0104               InterForm 400 version 2018M01               INTER02

A previous version of InterForm 400 is currently installed.

Current version  . . . . . :   2017M04

Library  . . . . . :   APF3812

Press Enter to continue.
```

Following you will be prompted for entry of the InterForm400® license code - unless your machine is a known machine (that has maintenance) by the installation program, then it will know the license code and just proceed. If you enter a code here it will be validated. You can also leave it blank, but then you cannot use InterForm400 before a valid code has been entered.

In general a new license code is needed, if you upgrade to a new year version e.g. from a 2017 (or earlier version) onto a 2018 (or future) version of InterForm400.

If InterWord400 is installed, and a newer version is included InterForm400 will now also upgrade InterWord400: (Press F10=Confirm to proceed).

```
INS0137                InterForm 400 version 2018.M01                INTER03

Note. InterWord400 400 will be upgraded during this installation



An active version of InterWord 400 has been found and will be upgraded.

InterWord 400 cannot be used during the installation so make sure
all users have logget out of InterWord 400.



Press F10 to accept and continue installation.
Press F3 to abort installation or press F12 to return to previous display.







F3=Exit   F10=Confirm   F12=Cancel
```

Next screen is this:

```
 INS0129                InterForm 400 version 2018.M01                PMK250

Start installation with selected options.

Device . . . . . . . . . . . :   APF3812NEW
  Category . . . . . . . . . :     *LIB
ASP device . . . . . . . . . :   *SYSASP
Primary language . . . . . . :   EN
Journal  . . . . . . . . . . :   APFJRN
  Library  . . . . . . . . . :     APF3812

Start subsystems . . . . . . :   1=Start subsystems

Current version  . . . . . . :   2016.M01
Library  . . . . . . . . . . :   APF3812



Press F16 to install.


F3=Exit   F8=Locked objects   F12=Cancel   F16=Upgrade InterForm
```

If any jobs outside any of the InterForm400 subsystems has a lock on any object in the APF3812 library, then the installation cannot proceed and will halt with this screen when/if you press F16:

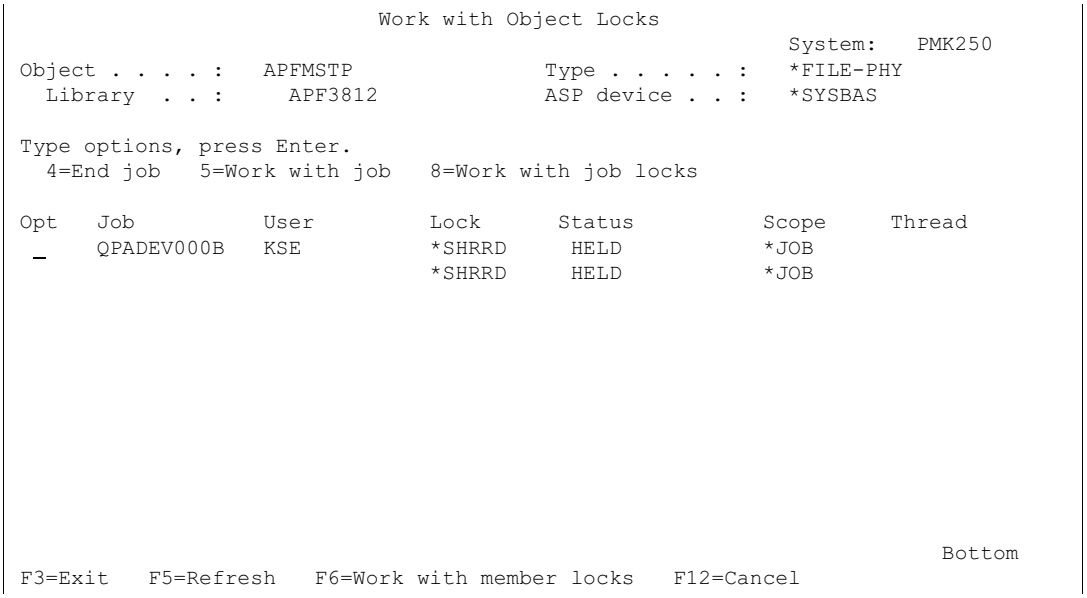
(When there are no more object locks you can press Enter on the screen below to retry and the installation/upgrade will proceed, if there are not more locks).

```
INS0150                InterForm 400 version 2018.M01                PMK250

Found locked objects in library APF3812.

Locked objects in library APF3812 poses a potential problem for the upgrade.

Press Enter to retry.

Press F8 to view a list of objects currently locked by jobs running outside
subsystems that will be ended during upgrade.

Press F10 to continue the install with the locks in effect. The upgrade will
probably end in error. *** This is NOT recommended ***

Press F3 to exit the install.




F3=Exit   F8=Locked objects   F10=Ignore warning   F12=Cancel
```

11. If you press F8 on the screen above, you will be able to see the objects currently locked by 'outside jobs':

```
         Locked objects in library APF3812                          LCK100D

Type options, press Enter.
  5=WRKOBJLCK

Opt   Object      Type      Attribute
 _    APFMSTP     *FILE     PF
                                                                        End
F3=Exit   F5=Refresh   F12=Cancel
```

12. With option 5=WRKOBJLCK you can check out the job, that has locked the file, and make sure that the lock is released before resuming:



Note: If you had any spooled files in any output queues in the library APF3812 before the update took place these spooled files will now reside in output queues in library APF3812OLD having the same name as the original output queues.

You should keep the old InterForm400® library (APF3812OLD) on the system until you are sure that you have tested that everything operates to your satisfaction with the new version of InterForm400®.

☺ **TIP** ☺

*When upgrading InterForm400 the security settings of the **APF3812/IMPORTC** and **APF3812/EXPORTC** programs will be copied onto the new version. This means that if you have changed the programs so normal users are allowed to export/import, then it will also be possible after the upgrade.*

Journal and journal receivers of the old version

During the upgrade the journal and journal receivers of the old version are saved into a save file called SAVJRNxxxx e.g. SAVJRN0001, and then deleted. This save file is stored in the APF3812OLD library after the upgrade.

Upgrade remote sites

If the IBM i is placed on a remote network you can consider to upload the save file prior to the installation instead of using the RSTLIBPC.EXE file. Refer to page 28 for details.

> **WARNING**
>
> *The command **APF3812NEW** will delete all overlays in file-set **SAMPLE** and copy new sample overlays into this file-set. If you have created overlays in file-set SAMPLE you should copy them to another file-set prior to the following. Also changes made to AFC-definitions in AFC-job/queue **AFC_INPUT1** will be overwritten by the default definitions of the InterForm400® demo.*

> **WARNING**
>
> *Do not place any user objects like output queues or programs in the APF3812 library. They will **not** be copied to the new APF3812 library as a part of the upgrade.*

Relations to Other Applications

The InterForm400® system is developed for co-existence with other applications. Note the following:

- The InterForm400® system does not change the library-list, and it is not necessary to have the library APF3812 in the library list.
- Do not include the apf3812 library in the system library list as this will cause a problem when you do an upgrade of InterForm400 later. (The new version is restored into a new library).
- You should not place any objects in the APF3812 library as this library is exchanged when upgrading InterForm400®. (Only InterForm400® resources are copied to the new APF3812 library).
- The InterForm400® system does not change local data areas.
- If the InterForm400® system is called from another system the system does not SIGN OFF, instead it returns to the calling program (APF3812/APFMENU is not the initial program of the user)
- If InterForm400® is running as a group job, the InterForm400® main menu will show that you can suspend the InterForm400® system by pressing the ATTN-button.
- The system may create files in library QTEMP.
- An abnormal termination will never harm the InterForm400® system.
- InterForm400 is using the QPRINT system printer file. A few special values may have side effects. It is e.g. advised **not** to have SHARE(*YES) on this printer file as this will cause problems for e.g. the e-mail finishing definitions.
- You can integrate functions (via the attention/escape key) into other interactive applications without having the source code of these. See how on page 638.

Performance

Printing

InterForm400® generates very compact PCL code.

You will notice that using large images can increase the time to download the merged spool files to printers.

If printing multiple pages the system makes extensive use of PCL macros, which are stored in the printer and called for all pages in the spool entry. If a paper jam occurs, and the printer loose its resources, the macros will be placed in the printer again as the spool entry is released again.

When using imported PC forms (PCL files, see page 413) it will be the application producing the PCL file which is decisive for the size. Imported PCL files will also be loaded as PCL macros as described above.

Some smaller HP printers (e.g. HP2015) have only limited font support for PCL5 (Courier and Times New Roman). You can get around that problem either by adding a font dimm module in the printer, or by installing a True Type Font in InterForm400 and specify auto download for this printer.

Processing

It is difficult to calculate the exact processor time consumption of the system.

In general the most process demanding operations of the system is to calculate right adjustment of proportional spaced fonts, and complex conditional search routines.

Adding overlay elements like frames, lines, images and PCL files requires a minimum of processing.

☺ **TIP** ☺

If the printer is PCL5 capable (most are nowadays) then create only barcode soft fonts for PCL5 (instead of PCL4). They will print out quicker.

☺ **TIP** ☺

When importing TIF images then convert the file to PCL5. It will print out quicker and can then also be used for PDF output. If the imported image needs to be reversed, then reverse when importing it instead of reversing it in overlay design.

Appendix B - Attaching Printers to the iSeries

This chapter provides information on how to configure the physical attachment of HP compatible Laser printers to your System i network.

Note: Below it is proposed to change the system value, QAUTOCFG. This change may cause problems in certain rare setups. **Remember always to have the approval of your System i responsible before changing any system value**.

Solving problems with missing resources in print out

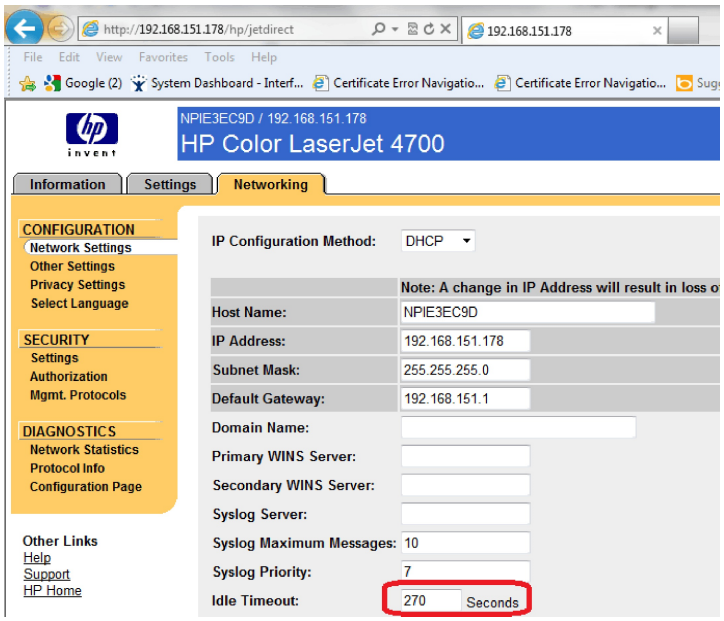
In some rare situations you might get a printed result, were the last of the print out is only plain text without any graphics.

Two scenarios could result in this:

Scenario 1: If the printer runs out of paper you could get this result if you are using a printer device with the default setting: PRTERRMSG(*INQ). The recommended value is **PRTERRMSG(*INFO)**.

Scenario 2: If you send a large spooled file to the printer, then the time interval between each time that the IBM i and the printer 'talk together' is likely to be longer. In such a situation the risk of a time out (in the middle of a spooled file) is larger - i.e. the printer has considered that since it has not heard from the IBM i for a long time, then the communation has failed - or there is no more to print, so it prints whatever is in the buffer and deletes any macros containing the graphics. When the reminder of the print out arrives that will then be printed out as plain text. To avoid this you can **increase the time-out on the printers network settings**.

The printer settings can normally be changed via a browser:



A value of at least 15 seconds is recommended.

Attachment Methods

Most modern laser printers are designed for operation with an MS-Windows platform and is equipped with a Parallel Centronics port. Most of these printers understands HP-PCL5 which

is an ASCII based print language. In order for the printer to operate on the System i a physical and logical protocol conversion must be used.

The attachment of printers can be made by any of the following methods:

- Twinax to Centronics protocol converter (5219/3812 SCS compatible)
- Printer port of a 5250 Terminal
- Printer port of a PC with System i printer session capabilities (ASCII transparency compatible)
- Internal or external LAN Print Server supporting TCP/IP LPD, TN5250E or Lexlink (Lexlink connection is not explained in this manual)
- Other attachment which can print through a server receiving ASCII print data from the System i.

InterForm400® contains an EBCDIC to ASCII conversion program i.e. the setup of Host Print Transform is not used for merged InterForm400 spooled files.

Attaching through a Twinax Protocol Converter

The printer can be attached through any protocol converter emulating an IBM SCS printer and which understands the ASCII transparency SCS command (03h). This command is a standard feature according to the 5250 attachment standard, and should be supported by most interfaces emulating 5219 or 3812.

The interface should preferably be configured to the system as 3812 model 1 SCS Printer device. If another SCS device description (eg. 4214) is specified enabling host print transform will allow ASCII transparency to be sent to this device as well. Refer to section **Attaching through a 5250 Terminal**.

System Configuration by Auto Configuration

The easiest way to create the device description for the protocol converter is using Auto Configuration.

1. Enable Auto Configuration with the following CL command.

```
CHGSYSVAL SYSVAL(QAUTOCFG) VALUE('1')
```

2. An available Twinax device address (0-6) should be provided by the system administrator. Follow the instructions of your protocol converter in order to alter this switch setting.

3. Attach the protocol converter to the Twinax network and power it on. After a while a printer device and an output queue is created on the system. The name of the device and the queue will be identical and will normally have a notation like “PRT05" or “PRT010305". Type the following command and scroll to locate the new printer device:

```
WRKDEVD *PRT
```

4. The device will indicate the text “Created by auto configuration”. Use option 5 to display the device description. Verify that the device type is 3812. If it indicates 5219 then proceed with section **Changing device description from 5219 to 3812.**

5. If the device indicates a 3812 model 1 you just need to start the printer writer:

```
STRPRTWTR PRTXXX
```

6. Go to section **Print font reference** list for testing the connection

7. Note that if Auto Configuration is enabled on the System i the protocol converter might change the device description back to 5219 the next time it is powered ON. Disable auto configuration to prevent this problem:

```
CHGSYSVAL SYSVAL(QAUTOCFG) VALUE('0')
```

Configuring a Printer Device Manually

The following describes how to create a new device without the use of Auto Configuration.

1. The following information for the device must be provided by the system administrator: **Port Number** (0-7), the **Switch setting** (0-6) and the **Attached controller** (CTL0x).

2. Make sure Auto configuration is disabled by the following CL command.

```
CHGSYSVAL SYSVAL(QAUTOCFG) VALUE('0')
```

3. Follow the instructions of your protocol converter in order to set the Twinax address switch setting (0-6).

4. Attach the protocol converter to the Twinax network and power it ON.

5. The following CL command will create a new device description called PRTXXX for a 3812 model 1 on port 2 switch setting 3 and controller CTL01.

```
CRTDEVPRT DEVD(PRTXXX) DEVCLS(*LCL) TYPE(3812)
MODEL(1) PORT(2) SWTSET(3) CTL(CTL01) FONT(11)
```

   If you are not able to fit the entire command on the command line, you can prompt the command CRTDEVPRT with **F4** and fill in the rest.

6. Vary on the device with the following command

```
VRYCFG CFGOBJ(PRTXXX) CFGTYPE(*DEV) STATUS(*ON)
```

7. Start the printer writer with the following command:

```
STRPRTWTR DEV(PRTXXX)
```

8. Note that if Auto Configuration is enabled on the System i the protocol converter might change the device description back to 5219 the next time it is powered ON. Disable auto configuration to prevent this problem:

```
CHGSYSVAL SYSVAL(QAUTOCFG) VALUE('0')
```

Changing Device Description from 5219 to 3812

In order to change a device description it is necessary to delete the device description for the Twinax attached printer emulating 5219, and create a new description for a 3812 model 1. In the following we assume the name of the device to be **PRTXXX**.

1. First you must determine the controller number, the port number and the device address of the existing 5219 device. The following CL command will display the existing device description:

```
DSPDEVD PRTXXX
```

```
                        Display Device Description                  INTER01
                                                                 16.01.11 09.27.57
Device description . . . . . :   PRTXXX
Option . . . . . :   *BASIC
Category of device . . . . . :   *PRT

Device Class . . . . . :   *LCL
Device type  . . . . . :   5219
Device model . . . . . :   D2
Advanced function printing . . . . :   *NO
Port number  . . . . . :   2
Switch setting . . . . . :   3
Online at IPL  . . . . . :   *YES
Attached controller  . . . . . :   CTL01
Font:
  Identifier . . . . . :   011
  Point size . . . . . :   *NONE
Form feed  . . . . . :   *AUTOCUT

Press Enter to continue

F3=Exit    F11=Display keywords   F12=Cancel
```

Make a note of the **Port Number** (2), the **Switch setting** (3) and the **Attached controller** (CTL01).

2. In order to make changes or delete the device description you must end the printer writer PRTXXX. The following command will end the writer immediately:

```
ENDWTR WTR(PRTXXX) OPTION(*IMMED)
```

3. Now you must vary off the device by the following command:

```
VRYCFG CFGOBJ(PRTXXX) CFGTYPE(*DEV) STATUS(*OFF)
```

4. You are now able to delete the 5219 device description by this command:

```
DLTDEVD DEVD(PRTXXX)
```

5. Continue from step 5 in the previous section, but use the controller number, port and address settings from the old device description:

Attaching through a TCP/IP Raw Socket (Port 9100/3700)

Some LAN Print Servers from e.g. HP, Lexmark, Kyocera and IBM offer the possibility of attaching through a raw TCP/IP socket, which enables the host to communicate bidirectionally with the printer using HP PJL. Support for this print method was introduced with OS/400 V3R2 and V4R1. The advantage of this method compared to standard LPD printing, is that the host receives status reply from the printer.

1. The following information for the device must be provided by the system administrator: **IP address** and **Port Number** (most print servers uses port 9100 as raw socket (HP, Lexmark and Kyocera), while IBM Print Servers uses port 3700 or 2501. Consult the user manual of your IBM printer for correct port no..

2. The following CL command will create a new device description called PRTXXX for a 3812 model 1 on port 9100 and IP address: 222.2.1.235.

```
CRTDEVPRT DEVD(PRTXXX) DEVCLS(*LAN) TYPE(3812)
MODEL(1) LANATTACH(*IP) PORT(9100) FONT(11)
FORMFEED(*AUTOCUT) PARITY(*NONE) STOPBITS(1)
TRANSFORM(*YES) MFRTYPMDL (*HP4 )
RMTLOCNAME('222.2.1.235') SYSDRVPGM(*HPPJLDRV)
PRTERRMSG(*INFO)
```

   If you are not able to fit the entire command on the command line, you can prompt the command CRTDEVPRT with **F4** and fill in the rest.

> ☺ **TIP** ☺
> *It is a good idea (but not necessary) to specify **PRTERRMSG(*INFO)**. This value will make the printer job automatically recover from a message if possible. if e.g. the printer runs out of paper the printer job halts with an error. When you add paper the printer job will detect this and 'reply' to the message automatically.*

See a list of some of the possible port numbers at this site:

http://www-912.ibm.com/s_dir/slkbase.nsf/1ac66549a21402188625680b0002037e/94e73364f979e388862569030071c398?OpenDocument&ExpandSection=3&Highlight=0,printing,port,number#_Section3

3. Vary on the device with the following command

```
VRYCFG CFGOBJ(PRTXXX) CFGTYPE(*DEV) STATUS(*ON)
```

1. Start the printer writer with the following command:

```
STRPRTWTR DEV(PRTXXX)
```

Attaching through a 5250 Terminal

A 5250 terminal with a printer port is in reality working as a Twinax protocol converter. The printer session has a dedicated device address which corresponds to a printer device description on the System i. You should therefore follow the instructions in section **Attaching through a Twinax protocol converter**.

The requirement to the printer session of a 5250 terminal is that it understands ASCII transparency. This is supported by terminals such as IBM 3197, IBM 3477 and IBM 3487. Other brands like Memorex Telex will in most cases also work. Consult the documentation of the terminal or your agent for further information.

In most cases the terminal will emulate either a 5219 or 3812 SCS printer. Some may only provide a 4214 emulation which will require Host print transform to be enabled on the system in order for ASCII transparency to be transmitted.

In case the printer session of your terminal configures as eg. a 4214 you should perform the following steps to enable Host Print Transform for the device. Note that Host Print Transform can be enabled for any SCS printer device description including 5219 and 3812.

InterForm400® makes the protocol transformation itself which means IBM Host Print Transform will only be interpreting the ASCII transparency command, thereby preventing Host Print Transform to consume processor power.

Enabling Host Print Transform on an existing Printer Device Description

This procedure will work for any existing SCS printer device description:

1. In order to make changes to the device description you must end the printer writer PRTXXX. The following command will end the writer immediately:

```
ENDWTR WTR(PRTXXX) OPTION(*IMMED)
```

2. Now you must vary off the device by the following command:

```
VRYCFG CFGOBJ(PRTXXX) CFGTYPE(*DEV) STATUS(*OFF)
```

3. The following CL command will enable host print transform:

```
CHGDEVPRT DEVD(PRTXXX) TRANSFORM(*YES) MFRTYPMDL(*HP4)
```

   Note that the choice of manufacturer/model (MFRTYPMDL) is indifferent for InterForm400® as it controls the protocol conversion itself. Only printing not controlled by InterForm400® will be formatted by Host Print Transform. For this type of printing the choice of manufacturer/model should be *HP4

4. You can now vary on the device

```
VRYCFG CFGOBJ(PRTXXX) CFGTYPE(*DEV) STATUS(*ON)
```

5. Start the printer writer again by the following command:

```
STRPRTWTR DEV(PRTXXX)
```

Attaching through a PC Printer Port

If your PC emulates a 5250 Twinax terminal through a Twinax adapter card you should consult your documentation for setting up a Printer session. Refer to the section **Attaching through a 5250 Terminal** for configuring the printer session to the System i.

iSeries Access/400

The following steps will take you through how to configure a printer emulation on a PC with iSeries Access.

1. First, ensure the PC printer, most likely on LPT1, is configured and recognized by Windows. At the Windows desktop, select My Computer, and select Printers. If the printer is not defined, select Add Printer and follow the wizard instructions.

2. From the iSeries Access folder, select Accessories and then select Start/Configure Session. At the Configure PC5250 screen, select a System i and enter a printer name in the Workstation ID field. This definition is the same as for a 5250 SNA printer emulation sessions and is saved in the [5250] section of the user's workstation profile, as are SNA connections. Under Type of emulation, click the Printer option and then click the Setup button.

3. At the PC5250 Printer Emulation Setup screen, specify the message queue and library where print messages should be sent. The default is QSYSOPR. Select Transform Print Data and Printer model HP Laserjet 4.

4. A host session is started. The Session panel is displayed with an overlying printer status panel whose title bar contains the System i system name and the printer ID. If you didn't specify an ID at the Configure PC5250 panel, the System i automatically creates a printer device (if the System i's system value QAUTOVRT is not set to 0) and its name is displayed. Select Printer Setup from the Session panel's File menu.

5. At the Printer Setup screen, check that the correct PC-attached printer is highlighted as the default printer. You can ignore the Setup button. It takes you to a panel that lets you define additional printing information such as paper size and orientation and number of drawers. The System i can override much of this information. Click OK.

6. Back at the Session panel, select Save As from the File menu. At the Save WorkStation Profile as screen, enter the printer ID in the File Name field and select the directory in which you want to store the printer emulation profile. The file name should have a .WS extension. Click OK. You will be asked whether you want an icon and in what directory it should be placed. I suggest that you say Yes to the icon and the location recommendation.

Attaching through a TCP/IP LPD Printer Server (Remote Writer)

A TCP/IP LPD Printer Server exists in form of interface boxes, integrated Printer interfaces, Spool Servers and Workstation Daemons.

No device description is used when printing by use of a remote writer. The TCP/IP address of the Printer Server is defined directly in the output queue definition.

You can create or change an existing output queue to define an output queue to send print to an LPD Printer Server.

Creating or Changing an Output Queue for TCP/IP LPD Printing

The following presuppose that TCP/IP has been configured and started on the System i:

1. In case a printing program is already assigned for the queue use the following command to end it:

```
ENDWTR WTR(PRTXXX) OPTION(*IMMED)
```

2. Enter the following command to change the queue:

```
CHGOUTQ OUTQ(QUSRSYS/PRTXXX)
```
and press **F4**

   (For creating a new queue just replace CHG with CRT.)

3. Now fill in the following fields:

   Remote System `RMTSYS(*INTNETADR)`

Remote Printer Queue `RMTPRTQ(PR1)`

(Insert the required port name for the queue. Some manufacturers require a specific name for the LPD queue in order to allow binary transfer, and others will automatically default to binary transfer if a random name is entered. Consult the manual for your Printer Server, or try with eg. PR1).
Examples: Use '**raw1'** for the HP JetDirect, and '**lp**' for ZebraNet PrintServer.

See a list of some of the possible queue names at this site:
http://www-01.ibm.com/support/docview.wss?uid=nas8N1010172

Writers to autostart `AUTOSTRWTR(1)`

Connection Type `CNNTYPE(*IP)`

Destination Type `DESTTYPE(*OTHER)`

Transform SCS to ASCII `TRANSFORM*YES`

(This value could be *NO if the queue should only be used for print controlled by InterForm400®)

Manufac. type & model `MFRTYPMDL(*HP4)`

(This value is not important if you are only printing through InterForm400® as InterForm400® makes the protocol conversion)

Internet Address `INTNETADR('222.5.1.235')`

(The IP address of your Printer Server. Consult your system administrator)

Destination options `DESTOPT( 'XAIX' )`

(This will support e.g. the number of copies specified on the spool file.)

4. You can verify the connection to the printer using PING from an System i command line:

```
PING RMTSYS('222.5.1.235')
```

5. Creating and changing a queue for printing LPR will automatically create and start a printing program on the System i. Alternatively the printing program can be started with the following command:

```
STRRMTWTR OUTQ(QUSRSYS/PRTXXX)
```

☺ **TIP** ☺
When setting up printing for a Zebra printer it is recommended to use a remote writer (or attach through a PC printer port) in order to avoid the printer job ending abnormally.

Attaching through a TN5250E Print Client

TN5250E print clients exist incorporated in print server devices, and as software in relation to terminal programs like iSeries Access.

Please refer to the User's Guide for details on how to configure such a device.

Testing the Connection

In order to test if the connection is working you can print the InterForm400® font list. If this list prints properly, the connection is working. Compare the list with the list in the back of this manual.

Note that the font list should be printed directly to the output queue where the printer is connected. The AUTO_FORM sub-system does not need to be active. If you have other PCL5 compatible printers in your network you could try printing the font reference to these printers as well.

Trouble Shooting

Missing printout:

Printer Writers:

1. Check that the printer is varied on:

```
WRKCFGSTS CFGTYPE(*DEV) CFGD(PRT*)
```

2. Check if the writer is started or if messages are waiting (not for LAN attached printers). Reply to any message regarding forms type with I=Ignore.

```
WRKWTR PRT*
```

3. Check for messages on the queue:

```
WRKOUTQ QUSRSYS/PRTXXX
```

Remote Writers:

1. Check if a printing program is assigned to the queue by pressing F20. If not start the printing program with the following command:

```
STRRMTWTR QUSRSYS/PRTXXX
```

2. For TCP/IP attached printers only. If the print job hangs in the queue with status **SND** check that the IP address setting and LPD port name defined for the output queue corresponds to the Printer Server.

Appendix C - Printer Types

The InterForm400® system can be used in connection to the following printer types:

- HP LaserJet 4, 4+, 4Si, 4V, 5, 5Si, 4000, 8000
- HP LaserJet 6
- HP Color LaserJet, HP4500
- Lexmark Optra Series
- Kyocera FS series
- Any HP PCL5/PCL5e/PCL5c compatible printers.
- Any ZPLII (Zebra Printer Langugae) compatible printer.
- Any IPL (Intermec Printer Language) compatible printer.
- With the add-on module WinPrint any Windows attached printer can be used with InterForm400 (See details in the WinPrint manual).

Some differences exist between the function sets of various printers. You could experience differences in the printout according to the printer being used. Consult your printer distributor for information.

The definitions for an overlay is the same regardless of the defined printer type. You need however to use overlays within a label file set for ZPLII and IPL printers. Differences will not show until the final printout. You will therefore be able to use the same overlay on several printer types.

Black and white printer types

☺ **TIP** ☺

If your printer supports PJL you should use a PJL printer type in InterForm400. Using this kind of printer type will enable you to use page range (print only a part of) on the merged PCL spooled file - if you change the spooled file from the APF3812/APFWRKOUTQ command.

HP4: For HP4, HP5 and HP6 and compatible PCL5e printers (e.g. Lexmark Optra, and the Kyocera FS series). Note that some printers, such as OptraE are not preset to PCL, and therefore needs a PJL command to switch to PCL. In these cases the setting HP4_PJL must be used.

HP4_PJL: Same as HP4, but using PJL (Printer Job Control) language e.g. to set resolution to 600 dpi. Note that the use of PJL can in some cases delete downloaded resources. **Use this PJL printer type to be able to be able to use page range on the merged spooled file - see tip above.**

HP4D: For HP4Si, HP5Si and compatible PCL5e duplex printers. Note that some printers, such as OptraE are not preset to PCL, and therefore needs a PJL command to switch to PCL. In these cases the setting HP4D_PJL must be used.

HP4D_PJL: Same as HP4, but using PJL (Printer Job Control) language e.g. to set resolution to 600 dpi. Note that the use of PJL can in some cases delete downloaded resources. **Use this PJL printer type to be able to be able to use page range on the merged spooled file - see tip above.**

Color printer types

HP5C: For HP5 Colour Laserjet and compatible color laser printers.

HP4500: For the HP4500 Laser Color Printer.

HP4500D: As for HP4500, with Duplex support.

Zebra printer types

QLZPL203: Used for e.g. wireless **Zebra QL220+, QL320+** and **QL420+** printers. (Use the command **APF3812/CALIBQL** to calibrate the printer - refer to page 533 for information). The characters '**^**' and '**~**' are unsupported on these printers. **Print mode: 2=Rewind** is recommended for merges in InterForm400.

ZEBRA203: To be used for 203DPI Zebra printers

ZEBRA300: Intended for 300DPI Zebra printers

> ☝ **NOTE** ☝
> We have seen examples of non-Zebra printers claiming to be ZPLII compatible even though they were not, so for ZPL printing a Zebra ZPLII compatible printer is recommended.

Intermec printer types

Generally regarding support for Intermec printers: The printers normally support multiple printer languages, and if possible, it is recommended to setup the printers in ZPL compatible mode, or IDP mode (Intermec Direct Protocol), or finally as the least recommendable: IPL mode. The default setting of overlays called, **New behaviour** is **not supported for IPL**, so IPL should be avoided if at all possible.

For Direct Protocol it is possible to preview the printed result via a printer (as it is for the ZPL print data stream) as described on page 44.

IDP203 Use this printer type for 203 DPI Intermec printers, that supports the IDP language.

IDP300 Use this printer type for 300 DPI Intermec printers, that supports the IDP language.

IPL203 To be used for 203 DPI Intermec printers supporting the IPL language.

IPL300 To be used for 300 DPI Intermec printers supporting the IPL language.

Please notice this regarding Intermec IPL support:

Overlays should be created in a label file set (also used for Zebra printers).
If the used soft fonts (for Zebra/Intermec) are installed in an earlier version of InterForm400 (earier than a 2011 version), then you will need to reinstall soft fonts, if you want to use them for an Intermec printer. Also please notice that PDF417 and Datamatrix barcodes are placed with the upper left corner as the point of reference on an Intermec printer, where the point of reference is the lower left corner on Zebra and PCL/PDF.

> ☝ **NOTE** ☝
> Even though the IPL output data stream is supported by InterForm400, there are limitations in some functionality caused by limitations of IPL compared to ZPL, so it is recommended to consider to buy ZPLII compatible Zebra label printers whenever possible.

The IPL output has these limitations compared with the ZPL output:

- **IMPORTANT**: The default new behaviour of overlays is NOT supported for IPL, and usage of IPL as an output format is not recommended.
- No IPL preview is available
- Extended remap window: Full justify is not supported for IPL output.

- Reference point for PDF417 and Datamatrix is upper left corner for IPL and lower left corner for ZPL, PDF and PCL, so you need a separate IPL overlay to produce the same output when using these barcodes.
- Triumvirate and Dot matrix fonts are printed as similar fonts in IPL, but are not 100% the same as the ZPL output.
- Relative widths on the fonts are not supported for IPL output. For IPL output the relative width is always 1.

Announcement regarding IPL support for Intermec (PM43) printers

It has come to our attention, that the new Intermec PM43 printer does not support the same selection of IPL commands as other, previous Intermec printers.

That means, that switching to such a printer will result in a different (wrong) result compared to other Intermec printers. (Soft fonts are not supported in the same way as they are on other Intermec printers).

We are currently considering if this kind of printer may be supported in the future, but the current output of InterForm400 may not look correct when using this printer model.

For those customers having Intermec printers that are ready for replacement, we can recommend to buy a (ZPLII compatible) Zebra printer. It can use all your label definitions without you have to change anything.

Intermec has chosen to withdraw support for the J-Command (used for soft font support) on this printer causing the problem above. It is unknown if support for the J-Command can be added with a future firmware upgrade of the printer. It is also unknown if other future Intermec printers may be shipped with the same missing support for this essential command.

Cassette Mapping (Drawers)

Selecting the drawer on an overlay can be done either by specifying a **drawer number** (*INPUT, *PRINTER, 1-255) or a **paper type**. Whenever possible it is recommended to select the drawer by use of the **paper type** as described below.

Selecting drawer by drawer number

When selecting a drawer in **Design InterForm400® Overlay** in the InterForm400® system, you should be aware of the differences between various printer types. InterForm400® will know from your specification of printer type which emulation the output should be formatted to but will not know which optional paper feeders etc. are installed on the printer.

For HP and other PCL compatible printers, the code specified in e.g. the field **Drawer** on the design menu will be used as value for the HP **Paper Source** PCL command **ESC&l n H**. You should refer to the user's guide delivered with your printer to verify which paper source is used for each value of "**n**".

For HP and other PCL compatible printers we have some more possibilities. The following is the standard definitions for the value of **n** and for the value stated for **Drawer** in the InterForm400® system, when printing on HP 5Si compatible printers:

1 - Tray 2 (upper drawer)
2 - Manual feed (tray 1, right side tray)
3 - Manual envelope feed (tray 1. Right tray)
4 - Tray 3 (lower drawer)
5 - High Capacity Input (HCI), first tray
6 - Optional envelope feeder.
7 - Autoselect
8 - Tray 1 (right side tray)
20-39 - High Capacity Input (HCI) trays 2-21

Select Drawer using Paper Type

It is advisable to use paper types for controlling drawer selection for each printer. The advantages when comparing to the traditional setup (where a drawer number is specified on the overlay design instead of a paper type) are:

- **The same overlay can be used for printing on printers with totally different drawer setup.** The paper type (and not the drawer number) on the overlay will be sent to the printer, where the paper type is translated into a drawer number depending on the setup of the printer.

- It is possible to move a merged spooled file intended for a printer with one drawer setup to another printer with a totally different drawer setup.

The requirements for selecting drawer on the printer using the paper type:

- The printer needs to support the possibility to select the drawer by the paper type instead of the drawer number.

- You need to manually make sure, that all of your printers have the same paper type setup so that the correct drawers are selected e.g. drawers with 'PREPRINTED' paper type should always contain preprinted paper with the company logo.

These are the standard paper types known by printers:

PLAIN
PREPRINTD
LTRHEAD
TRNSPRNCY
PREPUNCHD
LABELS
BOND
RECYCLED
COLOR
CARDSTOCK

Note, that these names may be translated into your native language on your printers, but InterForm400® will still select the same correct paper type.

Refer to page 60 for a description of how to put this into production. Refer to page 417 for information of how to select drawers on printers not supporting paper type.

Appendix D - Support for unicode spooled files

In order to use unicode in InterForm400 you need to do a few things:

1. **Activate Unicode** in InterForm400 via this screen:

```
          Configure InterForm 400                                  APF101D
                                                                        8/17


Do you want to be able to use UCS2 (unicode) in your spooled files.


         Use UCS2 . . . . . .  Y     (Y N)


Do you want underlines to be removed from DBCS input before merge.

        Remove underlines  . .  N     (Y N)


Do you want a default soft font to be used for unicode/PDFA PDF-files
when download is not defined.

        Default soft font . . . *NONE       Name, *NONE




F3=Exit                                                  F12=Cancel
```

The screen is found from the InterForm400 main menu if you select **70. Configuration and licences** followed by **2. Configure InterForm 400** and press <**Enter**> several times.

2. You need to install at least one soft font: **True Type Font (TTF)** for unicode. Refer to page 373 for more information of how to do that. You can refer to it for all the used font numbers, if you select it as the '**Default soft font**' above.

3. Create font numbers and link the fonts with the installed soft fonts (TTFs) via **auto download** - additional information can be found on page 374. Remember to specify **U=Unicode**.

4. All font numbers used (in the overlay and suboverlays, that you want to use for unicode) must be linked with a unicode soft font (in Autodownload) for the output types you want to create (PCL, PDF and ZPL).

5. The spooled file you merge with can be **a special unicode spooled file**, that contains unicode. This can either be an AFPDS spooled file (recommended) or a special *SCS spooled file.

   You can also activate unicode on the merge for a 'normal' non-unicode spooled file. This is e.g. required for some EBCDIC codepages.

Introduction to the AFPDS unicode format

If you want to use unicode spooled file as input for InterForm400 the easiest way is simply to define a unicode AFPDS spooled file. You can do that in these steps:

1) Install a Unicode True Type Font (TTF) e.g. Arial unicode into the IFS, so that AFPDS can 'see' it. This is done by copying it into the IFS within: /qibm/UserData/OS400/Fonts/TTFonts

2) Make sure that the AFPDS printer file is referring to the name of the installed True Type Font name exactly as written inside the font e.g. as below, where the field, FLD1 is written

```
A            FLD1           2G    10  5FONTNAME('Arial Unicode MS Regular+
A                                       ' (*POINTSIZE 15.1)) +
A                                      CCSID(13488 *NOCONVERT)
```

With the AFPDS spooled file you do not need to change the USRDFNOPT field or add any special shift-in and shift-out sequences as for the special *SCS spooled file below.

More information about AFPDS support can be found on page **53**.

Introduction to the *SCS unicode format

NOTE: It is highly recommended **NOT** to use the special format as described below. This format was necessary before *AFPDS support was added in InterForm400. If you want to use unicode spooled files as input in InterForm400 you should define them as AFPDS unicode spooled files like described above!

When you want to combine InterForm400 with unicode *SCS spooled file there is one problem: To this date IBM have not yet defined a standard for unicode *SCS spooled file, so it have been necessary to define a special unicode standard (which have been defined by InterForm400) in order to print in unicode from InterForm400.

If you create a special *SCS unicode spooled file you will need to set the value '**IF-UCS2**' for the User defined option (USRDFNOPT) as below:

```
                  Change Spooled File Attributes (CHGSPLFA)

Type choices, press Enter.

AFP Characters . . . . . . . . . AFPCHARS       *NONE
                          + for more values
Front side overlay:               FRONTOVL
  Overlay  . . . . . . . . . . .                *SAME
    Library  . . . . . . . . . .
  Offset down  . . . . . . . . .                *SAME
  Offset across  . . . . . . . .                *SAME
Back side overlay:                BACKOVL
  Overlay  . . . . . . . . . . .                *SAME
    Library  . . . . . . . . . .
  Offset down  . . . . . . . . .                *SAME
  Offset across  . . . . . . . .                *SAME
  Constant back  . . . . . . . .                *SAME
User defined option  . . . . . . USRDFNOPT      'IF-UCS2   '
```

- and it also requires that unicode text is marked with special <Shift Out> and <Shift In> sequences. You can use either **DEVTYPE(*LINE)** or **DEVTYPE(*SCS)** for the unicode spooled file. This special kind of spooled file is described below.

In the spooled file you can have both unicode text and normal single code page text so any unicode text must be surrounded by indicators in order to identify them as unicode.
For DBCS (Double Byte Character Set) spooled files you use the two special 1 byte characters <Shift Out> (which is hex '0E') and <Shift In> (which is hex '0F') to start and end any DBCS field.

A simular <Shift Out> and <Shift In> technique must be used for unicode fields as well, so the special InterForm400 *SCS unicode spooled file must use hex '**0E**' for <Shift Out> to mark the start of unicode text and hex '**000F**' (Note that it is here a 2 byte sequence) as <Shift In> to mark the end of the unicode text.

Limitations of the unicode *SCS spooled files

Note that a unicode spooled file setup in the manner described above cannot be displayed or printed in a normal manner, but InterForm400 includes tools for that. These tools are described later in this appendix on page 486.

Note also that there are other limitations to the functions supported in InterForm400 for the unicode spooled files at the moment. The limitations are:

- OSC (Output Schedule Control) does not handle unicode spooled files (they are ignored).
- If you want to call a split exit program and extract/return unicode data, then you need to use format=04 of the split exit programs.
- The only finishing definition supported is the e-mail finishing definition.

How to create special *SCS unicode spooled files

If you want to change your programs to print certain unicode fields from a database you can do it in this manner:

> ☺ **TIP** ☺
> *Instead of defining a special *SCS unicode as described below you can also simply create normal AFPDS unicode spooled files and use them directly with InterForm400 instead.*

1. **The data fields must of course be defined as unicode**. Here is an example:

```
Columns . . . :    1  80                                    Browse
SEU==>
FMT PF .....A..........T.Name++++++RLen++TDpB......Functions+++++++++++++++
       *************** Beginning of data *********************************
0001.00      A                                     UNIQUE
0002.00      A          R CUSTMSTR
0003.00      A            CUSTNO         5  0      TEXT('Customer number')
0004.00      A            NAME          30G       CCSID(13488 15)
0005.00      A            ADR1          30G       CCSID(13488 15)
0006.00      A            ADR2          30G       CCSID(13488 15)
0007.00      A            ADR3          30G       CCSID(13488 15)
0008.00      A            ADR4          30G       CCSID(13488 15)
0009.00      A          K CUSTNO
       ****************** End of data ***************************************









F3=Exit    F5=Refresh    F9=Retrieve    F10=Cursor    F11=Toggle    F12=Cancel
F16=Repeat find          F24=More keys
```

The unicode fields are defined as type G. The length is measured in unicode characters so the fields above with length 30 actually takes up 60 bytes.

2. **The printer file must be changed** so you e.g. can change between unicode output and normal output e.g. via an indicator (in the example below indicator 90 is used):

```
Columns . . . :    1  80                                        Browse
SEU==>
FMT DP .....AAN01N02N03T.Name++++++RLen++TDpBLinPosFunctions++++++++++++
       *************** Beginning of data ********************************
0001.00      A                                      REF(CUSTMSTP)
0002.00      A          R CUST
0003.00      A            CUSTNO    R             10SPACEB(2)
0004.00      A  90        NAMEDS        63        16
0005.00      A N90        NAME      R             16
0006.00      A  90        ADR1DS        63        16SPACEB(1)
0007.00      A N90        ADR1      R             16SPACEB(1)
0008.00      A  90        ADR2DS        63        16SPACEB(1)
0009.00      A N90        ADR2      R             16SPACEB(1)
0010.00      A  90        ADR3DS        63        16SPACEB(1)
0011.00      A N90        ADR3      R             16SPACEB(1)
0012.00      A  90        ADR4DS        63        16SPACEB(1)
0013.00      A N90        ADR4      R             16SPACEB(1)
       ****************** End of data *********************************
```

```
F3=Exit   F5=Refresh   F9=Retrieve   F10=Cursor   F11=Toggle   F12=Cancel
F16=Repeat find        F24=More keys
```

The fields with ‘DS’ as the end are the unicode fields so you can use indicator 90 so activate unicode output.

The spooled file also must have **USRDFNOPT('IF-UCS2')** which could be achieved via OVRPRTF before you generate the spooled file.

3. **The printer program should be changed**.
The program must be able to switch between normal output and unicode output. In this example it is done via indicator 90.
The program in this case also defines the unicode fields like this:

```
Columns . . . :    1 100                                        Browse
SEU==>
FMT **  ...+... 1 ...+... 2 ...+... 3 ...+... 4 ...+... 5 ...+... 6 ...+...
       *************** Beginning of data ********************************
0001.00      H DECEDIT('0,') DATEDIT(*DMY.) DFTACTGRP(*NO) ACTGRP('APF3812')
0002.00      FCUSTMSTP  IF   E           K DISK
0003.00      FCUSTPRTF  O    e             printer
0004.00      DNameDS           DS
0005.00      D                                 1    inz(X'0E')
0006.00      DNAME
0007.00      D                                 2    inz(X'000F')
0008.00      DADR1DS           DS
0009.00      D                                 1    inz(X'0E')
0010.00      DADR1
0011.00      D                                 2    inz(X'000F')
0012.00      DADR2DS           DS
0013.00      D                                 1    inz(X'0E')
0014.00      DADR2
0015.00      D                                 2    inz(X'000F')
0016.00      DADR3DS           DS
0017.00      D                                 1    inz(X'0E')
0018.00      DADR3
0019.00      D                                 2    inz(X'000F')
```

```
F3=Exit   F5=Refresh   F9=Retrieve   F10=Cursor   F11=Toggle   F12=Cancel
F16=Repeat find        F24=More keys
```

So this illustrates one way of adding the <Shift In> and <Shift Out> sequences to the unicode fields (which in this example ends with ‘DS’).

ERP vendors or other software providers, that would like to use InterForm400 for unicode printing can contact InterForm A/S or the local InterForm400 contact as tools may be provided

to ease the changes necessary to your sources.

Displaying unicode *SCS spooled files

A problem related to the special unicode spooled is, that unicode characters are represented by 2 bytes and thus cannot be fully displayed via a normal DSPSPLF command. To help you to around that problem InterForm400 is delivered with a command simular to DSPSPLF: **APF3812/DSPUNISPLF**.

Where a normal DSPSPLF command will not show any unicode text the DSPUNISPLF command will display any unicode character that is represented in the code page of the current 5250 session.

The DSPUNISPLF command is included in the **APF3812/APFWRKOUTQ** command so if you display an *SCS spooled file with **USRDFNOPT('IF-UCS2')** the DSPUNISPLF command is used instead of DSPSPLF.

Printing out unicode *SCS spooled files (without merge)

When using the special *SCS unicode spooled file you will normally merge them in InterForm400, but you might want to print them out directly without merging.

The special unicode sequences are not supported by the standard printing process so you need to do a small change of the used output queues (for remote writers) or printer devices to print out the *SCS unicode spooled files.

InterForm400 is delivered with a special program, **APF3812/IFWTRTRP**, that can be used as a Data Transfer Program with the parameter: **USRDTATFM(APF3812/IFWTRTRF)** on either output queue or printer device.

For any spooled file that does not have **USRDFNOPT('IF-UCS2')** the program will run as if it was not there. Only spooled files with this option will be inspected and any unicode text will printed (all supported characters will be printed).

If you are using a data transfer program you will be forced to specify TRANSFORM(*NO) i.e. disabling host print transform. That is no problem as host print transform is done in the called program (IFWTRTRF).

Using the data transfer program with your own WSCST

If you have defined your own workstation customizing object (*WSCST) and you want to use that combined with a data transfer program like above you will need to do a workaround to make it work.

Please note, that this is a problem only if you are using **MFRTYPMDL(*WSCST)** combined with a *WSCST object in field **WSCST** on the output queue (for remote writers) or printer device description. It is NOT a problem if you are using any of the predefined *WSCST objects in QSYS, that are selected via the MFRTYPMDL parameter on output queues and printer devices.

If you try to combine a *WSCST object with MFRTYPMDL(*WSCST) you will get the error message: **CPD83F0 Device class of the customizing object mismatched**.

The workaround

The workaround can according to IBM be done by replacing any of the predefined *WSCST objects in QSYS (use one that you would never use e.g. QWPIBM4019 might be a candidate..) with your own *WSCST object. It is a very good idea to just rename the *WSCST object in QSYS and then move or copy you own *WSCST object into QSYS - with that same name..

Note, that the workaround have the problem, that you will need to do this each time you upgrade the machine you run on...

Appendix E - Codepage Support

InterForm400® makes a complete protocol conversion of EBCDIC/SCS data to ASCII/PCL data.

This requires the National Code Page ID of the system to be known as well as the available ASCII codepage in the PCL Printer.

InterForm400® determines the System Code page from the system value QCHRID and makes an EBCDIC to ASCII conversion on basis of this.

The supported national languages are listed in the table below which also indicates the resulting ASCII symbol set.

Country	EBCDIC Codepage	EURO codepage	ASCII Symbol Set
USA/Canada	037	1140	850
Austria/Germany	273	1141	850
Denmark/Norway	277	1142	850
Finland/Sweden	278	1143	850
Italy	280	1144	850
Spanish-Speaking	284	1145	850
United Kingdom	285	1146	850
France	297	1147	850
Arabic	420		
Hebrew	424		
Multinational	500	1148	
Thailand	838		Unicode
Latin	870	1153	852
Iceland	871	1149	850
Greece	875		
Japan Katakana	930		DBCS
Korea	933		DBCS
Simplified Chinese	935		DBCS
Traditional Chinese	937		DBCS
Japan English	939		DBCS
Cyrillic (Russia)	1025/880	1154	
Turkey	1026		
Farsi	1095		
Latvia	1112	1148	850
Lithuania	1112	1148	850
Hong Kong	1377		DBCS
Unicode*	13488*		

***** Note that the UCS2 (unicode) code page (**13488**) is supported via a special *SCS unicode spooled file format or via Unicode AFPDS . The code page 13488 code page can **not** be specified for a merge, but is indicated via **USRDFNOPT('IF-UCS2')** on the spooled file to be merged. Refer to **Appendix D** on page 482 for additional information.

Appendix F - Font-ID Information

This appendix lists the standard fonts shipped with InterForm400 for both PCL/PDF and Zebra printers. Also a list showing typefaces of the most used resident fonts of PCL printers is included.

IBM 3812 font-ID Information

The system uses the IBM font ID's to select fonts.

This font list will include the standard IBM 3812 font set (3 to 2103). If printed on a PCL printer the fonts will be emulated by the selection of PCL printer type (refer to page 134, 341 and **478**).

The most complete emulation is obtained by selecting the **HP4** or **HP4D** printer types.

The available font definitions can be prompted by **F4** from different locations in the system and will include the fonts defined under option **Description of additional fonts** in the menu **Work with Fonts** (see page **360**)

Note that the extra fonts (e.g. 9903), predefined for use in the sample described in the **Getting Started** section on page **26**, has been added to the prompted list. These fonts are not available on standard IBM SNA printers (such as 3812, 4028, 3916 and 3116) but only on PCL5 compatible printers.

Note that your printer may contain a number of native resident fonts, which are most likely not described in the **System i Guide to Programming for Printing from IBM**. These fonts therefore have to be declared to the system under **Description of additional fonts** (page **360**) in order to have them listed on the font list generated by the InterForm400® system and in the list prompted by **F4** (displayed on page **60**)

IBM Compatible Font List

Font Name	CPI	Font-ID
OCRB	10	3
Orator	10	5
Courier10	10	11
Prestige Pica	10	12
Artisan 10	10	11
Courier Italic 10	10	18
Pica	10	12
Orator Bold	10	38
Gothic Bold 10	10	39
Gothic Text 10	10	40
Roman Text 10	10	41
Serif Text 10	10	42
Serif Italic 10	10	43
Courier Bold 10	10	46
Gothic Text 12	12	66
Gothic Italic 12	12	68
Gothic Bold 12	12	69
Serif Text 12	12	70
Serif Italic 12	12	71
Serif Bold 12	12	72
Script	12	84
Courier 12	12	85
Prestige Elite	12	86
Letter Gothic 12	12	87
Light Italic 12	12	112
Letter Gothic Bold	12	110
Prestige Elite Bold	12	111
Prestige Elite Italic	12	112
Boldface Italic	PS	155
Modern	PS	175
Boldface	PS	159
Essay	PS	160

Essay Italic	PS	162
Essay Bold	PS	163
Essay Light	PS	173
Document	PS	175
Gothic Text 13	13	204
Prestige 15	15	230
Courier 15	15	230
Serif Text 15	15	229
Gothic Text 15	15	230
Courier 5	5	244
Courier Bold 5	5	245
Courier 17	17	252
Courier Bold 17	17	253
Courier 17 (sub/super)	17	254
Gothic Text 20	20	281
Gothic Text 27	27	290
Sonoran-Serif 8-pt Roman Medium	typ	751
Sonoran-Serif 10-pt Roman Medium	typ	1051
Sonoran-Serif 10-pt Italic Bold	typ	1053
Sonoran-Serif 10-pt Italic Medium	typ	1056
Sonoran-Serif 12-pt Roman Medium	typ	1351
Sonoran-Serif 16-pt Roma Bold	typ	1653
Sonoran-Serif 24-pt	typ	2103

Shipped Zebra Fonts

These fonts are known by the Zebra printers and the font definitions are shipped with InterForm400®:

Font number	Description
6	Triumvirate 6 pt
7	Triumvirate 7 pt
8	Triumvirate 8 pt
9	Triumvirate 9 pt
10	Triumvirate 10 pt
11	Triumvirate 11 pt
12	Triumvirate 12 pt
13	Triumvirate 13 pt
14	Triumvirate 14 pt
15	Triumvirate 15 pt
16	Triumvirate 16 pt
17	Triumvirate 17 pt
18	Triumvirate 18 pt
20	Triumvirate 20 pt
22	Triumvirate 22 pt
24	Triumvirate 24 pt
28	Triumvirate 28 pt
30	Triumvirate 30 pt
36	Triumvirate 36 pt
48	Triumvirate 48 pt
72	Triumvirate 72 pt
1001	Matrix 9 x 5 dots
1002	Matrix 11 x 7 dots
1003	Matrix 18 x 10 dots
1004	Matrix 26 x 13 dots
1005	Matrix 60 x 40 dots
1006	OCR-A
1007	OCR-B

Typefaces known by PCL-Printers

PCL printers normally have several resident fonts. Below a few possible resident fonts and the most likely typeface number are listed.

Font Description	Typeface number
Albertus	4362
Antique Olive	4168
Arial	16602
CG Omega	4113
CG Times	4101
Clarendon Cond	4140
Coronet	4116
Courier	4099
Garamond	4197
Letter Gothic	4102
Marigold	4297
Symbol ( )	16686
Times New Roman	16901
Univers	4148
Windings (♆♓■♎♓■♑♦)	6826 / 31402

☝ **NOTE** ☝

Italic/Bold/Normal/Condensed may not be supported for some of the typefaces.

💣 WARNING 💣

*Not all typefaces are supported on all PCL printers and the actual typeface number **can** vary depending on printer model. Print out a font list on your printers to make sure, that this coincides with the mapping of your printers if in doubt.*

☺ **TIP** ☺

If you want to use a font/typeface, that is known by only some of your printers you could consider to install a TTF file with the same font and auto download it to the printers missing the font. Refer to page ***370*** *and* ***372****.*

Appendix G - Limitations of the Light Version

The following are rules given for the Light version:

1. Spool entries for manual merge can only be selected from the queues named **AFC_INPUT1** and **AFC_INPUT2**.

2. The program will support only two sets of AFC print queues. These queues are named **AFC_INPUT1**, **AFC_OUT1**, **AFC_INPUT2** and **AFC_OUT2**. The queues can be mixed (e.g. AFC_INPUT1 **->** AFC_OUT2), and input from e.g. AFC_INPUT1 can, by the existing AFC functions, be split up to print merged data to both AFC_OUT1 and AFC_OUT2.

3. The queues **AFC_INPUT1** and **AFC_OUT1** is the set of queues installed according to the **Getting Started** section. These queues can of course be used in production also, but care should be taken when calling the program **AFCINSTALL** as all definitions in the AFC definition **AFC_INPUT1** will be overwritten by the sample definitions.

4. All 4 queues must be placed in the library **APF3812**. Therefore, in the screen shown when choosing **F6=add** under **1.Functions attached to output queues**, the Library field will not be displayed.

5. Make sure the Light code is entered in the old version before making a Release Update (APFRELUPD). (make sure the Main Menu indicate **Light** before you rename the APF3812 library to APF3812OLD). If the light code is not entered prior to the update, the AFC definitions in the AFC job/queue **AFC_INPUT1** in the new version will **not** be updated with your AFC definitions from library APF3812OLD.

6. When running a Release Update, existing AFC definitions, other than **AFC_INPUT1** and **AFC_INPUT2**, will be updated as well, even though the Light code has been entered prior to the Release Update.
   However, it is the customers responsibility to change the Output queue and the AUTO_FORM job names of these AFC job/queues to either AFC_INPUT1 or AFC_INPUT2, or to set Auto-start = N for the AUTO_FORM jobs.

7. Attempts to start AFC jobs with other names than **AFC_INPUT1** or **AFC_INPUT2** will result in error conditions.
   It is the customers responsibility not to start AFC jobs with other names (avoid by setting Auto-start job = N).

8. Attempts to start the AFC jobs AFC_INPUT1 or AFC_INPUT2 (updated by a Release Update) with AFC definitions containing other queue names than **AFC_INPUT1/2** or **AFC_OUT1/2**, will result in error conditions.
   It is the customers responsibility not to change the names.

9. Output queues (updated by a Release Update) defined under **2. Forms Type Table** must be either **AFC_OUT1** or **AFC_OUT2**. It is the customers responsibility to correct existing definitions.

10. Function **5=Move Spooled File** in Auto Forms Control is NOT supported in the light version.

11. The CL Command **APF3812** does not work in the light version.

12. No PDF and e-mail support.

13. The ***USER** option for **1=Merge with overlay** in Auto Forms Control is not supported.

Conditions for new features will be added as they are being implemented.

Appendix H - Commands in Spooled Files

The system contains a command interpreter. This means you have a possibility of inserting command lines as a part of the print out.

When InterForm400® identifies a command line, the system will execute the command instead of just printing it.

A command line is a line, where the first two positions contain a command specification.

The command recognition characters '&&' are normally used. A special command can change these characters into something else.

The requirement for the commands in the spool file to take effect is that the spool file is merged with an InterForm400 overlay e.g. in Auto Forms Control. The overlay used for the merge, do not need to contain any format definitions, i.e. the line spacing, font selection, rotation etc. can be set to *INPUT.

The command lines cannot be the first non-blank line on a page. The line will be ignored if that is the case. No other texts (apart from the command specification) is allowed on the same spooled file line.

INPEL is an abbreviation of Inches and Pels, and must be written with preceding zeros e.g. 03120 indicates 3½ inch.

NOTE

The only command line supported for PDF and ZPL output is &&IMG. Refer to page 497 and 498 for further information.

Command line Overview :

Command	Position	Contents	Description
BOX	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 18 - 18 19 - 23 24 - 24 25 - 29 31 - 33 35 - 35 37 - 38 39 - 39 40 - 44 45 - 45 46 - 50 52 - 54	'&&' 'BOX' sign (+/-) top border upper border distance to edge INPEL sign (+/-) left border left border distance to edge INPEL sign (+/-) right border right side distance to edge INPEL sign (+/-) bottom border distance bottom border to edge INPEL line width PPP (0-31) round/sharp corners (R S) pattern for filling sign (+/-) move right move right INPEL sign (+/-) move down move down INPEL number of moves	Draws a frame of which the upper and lower borders are defined relatively to the top edge of the paper, and the left and right borders are defined relatively to left edge of the paper. IN indicates measurement in inches. PEL indicates measurement in Pels. Leading zeros must be filled in. If a distance is stated without a leading sign the distance is calculated relative to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current line. If position 39-54 is filled in, the frame will be repeated as many times as stated in position 52-54.

Command	Position	Contents	Description
VAN	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 18 - 18 19 - 23 25 - 27 28 - 28 29 - 33 34 - 34 35 - 39 41 - 43	'&&' 'VAN' sign (+/-) distance to paper top edge distance to top edge INPEL sign (+/-) left end point distance left end point to left paper edge INPEL sign (+/-) right end point distance right end point to left paper edge INPEL line width PPP (0-31) sign (+/-) move right move right INPEL sign (+/-) move down move down INPEL number of moves	Draws a horizontal line. The line is horizontal to the paper rotation, regardless of rotation of the contents. IN indicates measurement in inches. PEL indicates measurement in Pels. Leading zeros must be filled in. If a distance is stated without a leading sign the distance is calculated relatively to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current line. If position 28-43 is filled in, the line will be repeated as many times as stated in position 41-43.
LOD	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 18 - 18 19 - 23 25 - 27 28 - 28 29 - 33 34 - 34 35 - 39 41 - 43	'&&' 'LOD' sign (+/-) distance to top end point distance top end point to top paper edge INPEL sign (+/-) distance to left paper edge distance to left paper edge INPEL sign (+/-) bottom end point distance bottom end point to top paper edge INPEL line width PPP (0-31) sign (+/-) move right move right INPEL sign (+/-) move down move down INPEL number of moves	Draws a vertical line. The line is vertical to the paper rotation, regardless of rotation of the contents. IN indicates measurement in inches. PEL indicates measurement in Pels. Leading zeros must be filled in. If a distance is stated without a leading sign the distance is calculated relative to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current line. If position 28-43 is filled in, the line will be repeated as many times as stated in position 41-43
LIN	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 18 - 18 19 - 23 24 - 24 25 - 29 31 - 33 35 - 35 36 - 36 37 - 41 42 - 42 43 - 47 49 - 51	'&&' 'LIN' <u>1. Point</u> sign (+/-) distance top edge distance to paper top edge INPEL sign (+/-) distance left edge distance to left paper edge INPEL <u>2. Point</u> sign (+/-) distance top edge distance to paper top edge INPEL sign (+/-) distance left edge distance to left paper edge INPEL line width PPP (0-31) round/sharp ends (R S) sign (+/-) move right move right INPEL sign (+/-) move down move down INPEL number of moves	Draws a line between 2 points. The line is oriented to the paper rotation, regardless of rotation of the contents. IN indicates measurement in inches. PEL indicates measurement in Pels.. Leading zeros must be filled in. If a distance is stated without a leading sign the distance is calculated relatively to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current print line. If position 36-51 is filled in, the line will be repeated as many times as stated in position 49-51.

Command	Position	Contents	Description
TXT	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 19 - 21 23 - 26 28 -198	'&&' 'TXT' sign (+/-) distance top edge distance to paper top edge INPEL sign (+/-) distance left edge distance to left paper edge INPEL rotation font text for print	Prints a text line, for which the appearance is independent of the normal text lines in the data stream.
IMG	1 - 2 3 - 5 7 - 16 17 18 - 22 23 24 - 28 30 - 32 34 35 36 - 45 47 - 56	'&&' 'IMG' image name sign (+/-) distance to top edge distance to paper top edge INPEL sign (+/-) distance to left edge distance to left paper edge INPEL resolution (600 300 150 100 075) 'R' = reverse image Image rotation (N, E, W, S) file name library **Special for ZPL output**: The positions 30-32 contains the rotation, which can be 000, 090,180 or 270. Positions 34 and 35 are not used for ZPL and the image cannot be scaled for ZPL. If position **6** is '**K**' (for keep), then the image will be kept in the ZPL printers memory to prevent multiple downloads of the same image within the same spooled file - up to 25 images can be 'kept' in this way. (36-56 is only used if the image is located in another file than APF3812/IMAGE) If 7-16 is '***PATH**' or '***PATHBMP**' a B/W BMP file is looked for in position 36-98. If 7-16 is '***PATHTIF**' a TIF file is looked for in the (IFS) path in position 36-98. If 7-16 is '***PATHTIF2**' then position 36-38 are the number of rows of dots to cut from top of the TIF image (position 1-35 have the same meaning as above). Position 40-42 are the number of dots to cut off from the left of the TIF image. (Remember to precede both with zeroes). For *PATHTIF2 the path to the image is placed in positions 44-106. If 7-16 is '***PATHTIF3**' then you can set this for PDF and color PCL output only: Position 29 may contain a resolution or size code: Position 29=H is a Height size code. Position 29=W is a Width size code. Position 29=blank: Use the resolution. Position 30-34 sets the size as iippp if position 29 is either H or W else the resolution in position 30-32 is used. Position 37 is the image rotation: N,E,W,S. Position 38-198: The path to the tiff image.	Prints an image with the same rotation as the paper rotation. If a distance is stated without a leading sign the distance is calculated relatively to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current print line. If no resolution is stated, the image will be printed with 300 dpi. *PATHTIF is also supported for PDF output - but only for compressed TIF files. *PATH is also supported for PDF output. The BMP file must be sharp Black/white i.e. no grey. The size in *PATHTIF3 marked as iippp is the size in inches and pels, where the ii denotes the inches and ppp the pels. Preceeding zeroes are required so e.g. 00120 set a size of half an inch.

Command	Position	Contents	Description
IMG ***COLOR**	1 - 2 3 - 5 7 - 16 17 18 - 22 23 24 - 28 29 30 - 32 34 - 36 30 - 34 37 ---------- 38 - 47 - or - 38 - 198 - or - 38 - 198	'&&' IMG *COLOR sign (+/-) distance to top edge distance to paper top edge INPEL sign (+/-) distance to left edge distance to paper left edge INPEL Resolution / size code H=height, W=width blank= resolution For resolution (pos. 29) = blank, resolution horizontal For resolution (pos. 29) = blank, resolution vertical For resolution (pos. 29) = H or W, size in INPEL Image rotation (N,E,W or S) color image name /IFS BMP, GIF, PNG or JPEG file Link to image server: http://my_imageserver.com/myimage	This image extension (***COLOR**) makes it possible to insert color BMP or JPEG images in PDF and PCL output. This is ignored when specifying COLORSUPP(*NO) when you merge into pdf files. For PCL output you need to use either the HP4500, HP4500D or HP5C printer type. JPEG images can be inserted in **PDF and PCL output** and they need to be formatted for 16 mill. colors. Please notice that **printing PCL** with JPEG images via this function includes a conversion into bmp which takes a while - so use this function for smaller images only. BMP color image name or JPEG/GIF/PNG file in IFS (include the slash "/")

If you state H or W in position 29 (for resolution), then you state the size (height or width) in positions 30-34. The size is written as inches and pels with preceding zeroes: 2 digits for the inches and 3 for the pels. If you state either H or W in position 29, the image will be resized to fit the size and the other dimension (height or width) will be resized, so the ratio between width and height is kept.

If you leave position 29 blank, the horizontal and vertical sizes are written in positions 30-32 and 34-36 - also as inches and pels in the same manner.

NOTE

Note, that if you place two images at the exact same position, then only the first will be printed. If you place a color image and then a black and white image at the same position, then only the color image will be printed when merging with color support, and the black and white image is printed for black and white output.

Command	Position	Contents	Description
OVL	1 - 2 3 - 5 7 - 16 17 18 - 22 23 24 - 28	'&&' 'OVL' overlay name sign (+/-) distance top edge distance to paper top edge INPEL sign (+/-) distance left edge distance to left paper edge INPEL	Prints an overlay containing the definitions listed in an overlay created in InterForm400®.
FNT	1 - 2 3 - 5 7 - 10	'&&' 'FNT' font-id	Changes the font type for the rest of the page.
PPL	1 - 2 3 - 5 7 - 9	'&&' 'PPL' points per line	Changes the line density for the remaining text lines on the page.
ESC	1 - 2 3 - 5 7 - 8	'&&' 'ESC' new command recognition character string	Changes the command recognition character string from '&&'.
GL2	1 - 2 3 - 5 7 - 16 17 18 - 22 23 24 - 28 30 - 34 35 - 39	'&&' 'GL2' plot name (member in APF3812/GL2) sign (+/-) distance to top edge distance to paper top edge INPEL sign (+/-) distance to left edge distance to left paper edge INPEL hight INPEL width INPEL	Prints a HP-GL/2 plot with the same rotation as the paper rotation, i.e. which edge is regarded as the upper edge is of no importance. If a distance is stated without a leading sign the distance is calculated relatively to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current print line. If hight or width are not stated the plot can reach the lower right edge. The GL2 command only works on PCL5 printers.

Command	Position	Contents	Description
PCL	1 - 2 3 - 5 7 - 16 17 18 - 22 23 24 - 28 36 - 45 47 - 56	'&&' 'PCL' PCL-file name sign (+/-) distance to top edge distance to paper top edge INPEL sign (+/-) distance to left edge distance to left paper edge INPEL file name library (36-56 is only used if the PCL date is located in another file than APF3812/PCL) If 7-16 is '*PATH' a PCL file is looked for in the (IFS) path in position 36-	Prints a PCL-file with the same rotation as the paper rotation, i.e. which edge is regarded as the upper edge is of no importance. If a distance is stated without a leading sign the distance is calculated relatively to the paper edge. If a sign (+/-) is stated, the distance will be calculated according to the base line of the current print line. PCL-files can not be used on IBM 3812 and 3816 printers.
SKU	1 - 2 3 - 5 6	'&&' 'SKU' tray number	Used for control of paper trays. The command must be stated in line number 1 of the print file. On IBM3812 and IBM3816: 1=top paper tray 2=bottom paper tray On other printers: 1=top paper tray 2=manual feed 3=manual envelope feed 4=bottom paper tray 6=envelope feeder When duplexing this command will cause forced front page.
HPM	1 - 2 3 - 5 7 - 10	'&&' 'HPM' macro number 00000-32767	Executes an HP-macro. The macro must be down loaded to the printer prior to this command call. In order to avoid mixing of the internal use of macros in the InterForm400® system, it is recommended to define macro numbers larger than 09999.
INK	1 - 2 3 - 5 6 - 6 8 - 8	'&&' 'INK' Foreground color: B=black, W=white, U=unchanged, 1-7=HP raster Background color: B=black, W=white, U=unchanged, 1-7=HP raster **WARNING:** This command will change the ink of any text being printed after this command has been issued. Print sequence considerations: The sequence of printing command lines versus normal text lines and constants in the overlay cannot be predicted. Only a sequence of command lines in succession can be guaranteed to be printed in the specified sequence.	Changes the ink of any preceding text being printed. **Example of valid use of &&INK:** &&INK B W &&TXT ... &&BLA ... &&BLO ... &&BLO... &&INK W B **TIP:** To avoid any problems you should always reset foreground ink to black and the background ink to white immediately after having used any special ink in your command lines.

Command	Position	Contents	Description
BLA	1 - 2 3 - 5 6 - 6 7 - 11 12 - 12 13 - 17 19 - 21 23 - 26 28-32 34-36 38-40 42-44 45-48 50-52 53-56 58-60 61-64 66-68 69-72 74-76 77-80 82-84 85-88 90-92 93-96 98-100 101-104 106-108 109-112 114-116 117-120 122-124 125-128	'&&' 'BLA' sign (+/-) distance top edge distance to paper top edge INPEL sign (+/-) distance left edge distance to left paper edge rotation font Maximum line width of lines in the block INPEL when being printed. Spacing between lines (PEL) Percentage of line width to cause right-margin-adjustment.If printing a line in the block (using normal spacing) would exceed this percentage (of the block width), spaces between words will be increased in size to cause the line of text to occupy the entire line. Escape sequence 01 Escape function 01 Escape sequence 02 Escape function 02 Escape sequence 03 Escape function 03 Escape sequence 04 Escape function 04 Escape sequence 05 Escape function 05 Escape sequence 06 Escape function 06 Escape sequence 07 Escape function 07 Escape sequence 08 Escape function 08 Escape sequence 09 Escape function 09 Escape sequence 10 Escape function 10 Escape sequence 11 Escape function 11 **Escape function 1-11** defines the function of an escape sequenc. The following functions are supported **Function Description** UL Start underlining text. ENUL End underlining text. - Syllable hyphen. A '-' is inserted only if a part of the word (the part before syllable hyphen) can fit the line width. Then the rest of the word are moved to the next line. NL New line forces the following text to begin at the next line. HLUP Half line up/superscript. HLDW Half line down/subscript. ENHL End half line up/down NORM End underlining, ends half line up/down and set font to font specified in the &&BLA command (font number) Change to APF-font number.	(BLA = Block attributes) Sets the attributes for any preceding block-commands (See **BLO**). These attributes will be used for any BLO-commands until another BLA is issued. Escape sequences and functions are used together. Sequence 01 are used in conjunction with function 01 and so on. **Escape sequence 1-11** defines the allowed escape sequences in the text of the &&BLO-commands. An escape sequence can consist of 1 to 3 characters.
BLO	1 - 2 3 - 5 7 - 198	'&&' 'BLO' Text to be printed (incl. any esc. sequences)	BLO = Block Adds a line of text to the block The line of text will be included with other &&BLO-commands and wrapped to fit the line width specified in the &&BLA-command. A &&BLA-command must proceed any &&BLO command.

Command	Position	Contents	Description
BMK	1-2 3-5 7 9 11-13 15 17 18-22 24-103	'&&' 'BMK' Bookmark level code 0-6 Code telling if bookmark on higher level should be open to start with: 0=Closed, 1=Open Colour number. Non numeric will be interpreted as black. Code for focus. 0= Show page. 1=Show specific place on the page specified by Y-coordinate. sign (+/-) distance top edge. Blank is absolute, +/- is relative to place of the command. Y-Coordinate: Absolute/relative distance from the top of the page. Insert as inches and pels: IIPPP with preceding zeroes. Bookmark text	Inserts bookmark in PDF output files. If there is no lines with bookmark level code = 0 the bookmarks will be shown automatically when opening the PDF file. If there are more than one line with level=0 the last one will be used. Level=0 lines outside the pagerange will be ignored. Level 1 to 6 must be written in order and holes in this order are allowed. Refer to page 320 for another way to insert PDF bookmarks.
CPY	1-2 3-5 7-11	'&&' 'CPY' Number of copies	Inserts addtional copies of each pages. This works until the end of the spooled file or until another &&CPY command overrides it.
URI	1-2 3-5 6 7-11 12 13-17 19-21 23-26 28-378	'&&' 'URI' Sign (+/-) distance top edge Distance to paper top edge INPEL Sign (+/-) distance left edge Distance to left paper edge INPEL Rotation Font Link (Optionally followed by <Space> and text to be shown in the PDF file)	INPEL is an abbreviation for 2 chars defining inches and 3 for pels. Use preceding zeroes. The web-address to link to followed by one or more spaces. If additional text is found after the spaces this text will be shown in the PDF file for this link.

☺ **TIP** ☺

*Insert the text below in the *SCS spooled file to insert a link in the resulting PDF file to www.interform400.com with the text 'company' appearing in the PDF file:*

```
&&URI 03000 02120 000 0011 www.interform400.com company
```

The link will appear 3 inches from the top and 2½ inches from the left on the PDF file.

Command	Position	Contents	Description
RFID	1-2 3-6 8-13 14 15 16 17 18 19-24 25 26 27-37	'&&' 'RFID' 'SSCC96' ',' Filter, F. (Value 0-7) ',' Partition, P. (Read below..) ',' Company prefix, CCCCCC. ',' Extension digit, E Serial number, SSSSSSSSSSS.	Sends a command to a RFID ZPLII compatible printer to print or burn a RFID label. If you need to print anything else on the page print another line with line spacing=0. There is no check-digit. If there are more than one &&RFID command on a page only the last will be encoded. The filter value can be 2 for shipping unit. If the length of CCCCCC + ESSSSSSSSSS is not 17 or they contains non numeric data, the tag will not be encoded.

The Partition value gives the length of the company prefix and serial number:

Partition value	Length of Company prefix	Length of extension + serial number
0	12	5
1	11	6
2	10	7
3	9	8
4	8	9
5	7	10
6	6	11

Example of using Escape Commands in the Data Stream

Using the Edit Print Command **APF3812/APFEDTPRT** in InterForm400® below example has been created, based on the Demo Spool Entry in InterForm400®.

In the example below we have made use of the escape commands for Font, Frames, images, and Block formatting.
Furthermore we have created 2 additional fonts in InterForm400®:
Font ID 7510 = New Times Roman 10 (Typeface 16901)
Font ID 7610 = New Times Roman 10 BOLD (Typeface 16901)

When you have finished editing the spool file, according to the below, press F3 to exit and press **Enter** to create the revised spool entry.

```
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+..
                                                                          1
&&FNT 0066
&&BOX 00160 00120 03100 02040 005 R B
       Herring Marine Research
       Seaweed Street 14
       9000 Battleaxe
       DK-Denmark
       ----------------------
       Att: Martin Merman
&&IMG DEMOIMAGE  01080 04220 600
                                                        1004/PDC.20-02-2008
&&BLA 03100 02120 000 7510 03180 040 080 /ULUL   /BO7610 /NONORM /NLNL
&&BLO  Re. Your new InterForm400 modules./NL
&&BLO  ----------------------------------
&&BLO
&&BLO  Congratulations with your new /BOInterForm400/NO module(s).
&&BLO  You are now able to fully exploit the benifits of combining
&&BLO  /BOInterForm400/NO with one or more of the powerful modules to impre
&&BLO  your customers and ease the workflow in your organisation.
&&BLO
&&BLO
&&BLO
&&BLO  The following license code(s) will be needed to activate the
&&BLO  module(s) permanently to your /BOSystem(s)/NO:
&&BLO
&&BLO  Product          Model   i-Group     Serial No.     License Code/NL
&&BLO  ------------------------------------------------------------------/NL
&&BLO  Interword400     510       i300       44A2971       81 20 01 3A /NL
&&BLO  PDF security     520       i100       44A9032       3F 78 66 99 /NL
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO
&&BLO  Should you have any questions regarding the modules, you are
&&BLO  welcome to contact our technical support via:
&&BLO
&&BLO  support@interform400.com
&&BLO
&&BLO  Or download the latest documentation from the Internet on:
&&BLO
&&BLO  /ULwww.interform400.com/NO
&&BLO
&&BLO
&&BLO
&&BLO  Regards/NL
&&BLO  InterForm A/S
```

As mentioned before in this chapter, a Merge with overlay has to be made in order for the Escape sequences in the spool file to take effect.

Create a similar overlay as defined below, and call this overlay in a AFC definition.

```
Design InterForm 400 overlay                                    APF300D

Overlay name         NOOVERLAY

Overlay text         Escape sequences in datastream
Line spacing         040       in 1/240 of an inch (*INPUT, 1-720)
Rotation             *INPUT    (*INPUT, 0, 90, 180, 270)
Extra left margin
        positions    _0        (0-99)
Maximum number of
  print positions    378       (1-378)
Extra blank lines
           on top     0        (0-99)
Font                 *INPUT    *INPUT, fontnumber     F4=List
Extended page def.   N         (Y N)
Drawer / Papertype   5         (*INPUT, *PRINTER, 1-255, Name)   F4=List
Paper Size           4         F4=List
Pages per side
Copy management      N         (Y N)



F3=Exit      F4=Prompt          F11=Delete this overlay          F12=Cancel
F13=Set view/print parameters   F14=PCL-view       F18=DSPSPLF   F19=DSPPFM
```

The resulting PCL-file from the merge, will look as per below. Notice that the &&-commands are not printed. Furthermore you will see the effect of the BLOCK defined spool lines, which are formatted according to the total width length of the BLOCK. Unless a NL (New Line) is inserted, blank lines will be ignored and the spool text from each line will be reorganised according to block width and consequently a full justification will be obtained. (Equal left and right margin).

Herring Marine Research
Seaweed Street 14
9000 Battleaxe
DK-Denmark

Att: Martin Merman

InterForm

1004/PDC.20-02-2008

Re. Your new InterForm400 modules.

Congratulations with your new **InterForm400** module(s). You are now able to fully exploit the benifits of combining **InterForm400** with one or more of the powerful modules to impress your customers and ease the workflow in your organisation.

The following license code(s) will be needed to activate the module(s) permanently to your **System(s)**:

Product Model	i-Group	Serial No.	License Code
Interword400	510	i300	44A2971 81 20 01 3A
PDF security	520	i100	44A9032 3F 78 66 99

Should you have any questions regarding the modules, you are welcome to contact our technical support via:

supportØinterform400.com

Or download the latest documentation from the Internet on:

www.interform400.com

Regards
InterForm A/S

Appendix I - InterForm400® CL Commands

NetServer Commands

The Add Netserver File Share Command

The **APF3812/ADDFILSHR** command can be used for sharing objects on the System i. It can e.g. be used for sharing the QDLS as below:

```
                    Add NetServer File Share (ADDFILSHR)

Type choices, press Enter.

Share name . . . . . . . . . . . > QDLS_____  Name
Object . . . . . . . . . . . . . > /QDLS_____________________________________
_______
Text 'description' . . . . . . .   QDLS_____________________________________
_______
Data authorities . . . . . . . .   *RW           *R, *RW
Maximum users  . . . . . . . . .   *NOMAX_____   Number, *NOMAX
```

The Add NetServer Printer share Command

With the **APF3812/ADDPRTSHR** command you can share a printer on the System i.

```
                   Add NetServer Printer share (ADDPRTSHR)

Type choices, press Enter.

Share name . . . . . . . . . . .   __________    Name
Output queue . . . . . . . . . .   __________    Name
  Library  . . . . . . . . . . .     *LIBL_____  Name, *LIBL
Text 'description' . . . . . . .   *OUTQ_____________________________________
_______
Printer driver . . . . . . . . .   'HP LaserJet III'_____________________
_______
Spooled file type  . . . . . . .   *USERASCII    *USERASCII, *AFP, *SCS
```

The printer driver is default ‘HP LaserJet III’ and describes a printer driver to use when installing this printer on e.g. a PC.

The Change Netserver Attributes Command

The APF3812/CHGNETSVRA command can change the netserver name and domain of the System i.

Related commands: DSPNETSVRA, STRNETSVR, ENDNETSVR and the netserver share commands: ADDFILSHR, ADDPRTSHR and RMVNETSHR.

The Display Netserver Attributes Command

The **APF3812/DSPNETSVRA** command displays the netserver name and domain name used for the System i. This can be used when configuring the netserver.

```
                        Display NetServer Attributes

Server name  . . . . . :   QS4449079

Domain name  . . . . . :   WORKGROUP

Text . . . . . :   Os/400
```

Enable NetServer User

With the command Enable NetServer User (APF3812/ENANETUSR) you can enable a user profile for NetServer use. This should not be mistaken for a normal disabled user profile.

Normally you can enable a user for NetServer use by doing a dummy change (CHGUSRPRF), but with specific OS400 PTFs this does not work, and that is where this command is especially handy. The command has a single parameter, USER, which is the user profile to enable. The cookbook includes details and other alternatives to this command. The cookbook can be downloaded via this link: http://download.interform400.com/shares/public/CookBook.zip

The End Netserver Command

The **APF3812/ENDNETSVR** command ends the netserver on the System i.

The Remove NetServer share Command

The **APF3812/RMVNETSHR** command can be used to remove a share of an object, that previously has been added either by use of Operations Navigator or ADDFILSHR or ADDPRTSHR.

The Start Netserver Command

The **APF3812/STRNETSVR** command can be used to start the Netserver on the System i - without the use of Operations Navigator.

Save/Restore and Export/Import Commands

The Export Chart Command

Chart resources can not be exported and imported in the usual way through the menus. The **APF3812/EXPCHT** can however save resources for a chart e.g. in the APFEXPORT library, which then can be saved as a save file or as a PC file using the normal export procedure.

This command is used in conjunction with the **APF3812/IMPCHT** command

When exporting and importing charts the following must be noted:

- Charts can only be exported by the APF3812/EXPCHT command.
- Charts can not be renamed or deleted (from the export library), when they are exported.
- Charts are not shown when viewing the resources in the export/import libraries.
- Charts can only be imported using the APF3812/IMPCHT command.
- Charts can be imported several times from the APFIMPORT library.

- The rebuild/journal function can not be used for charts.

Prior to execution of the command, it is required, that the APFEXPORT library has been created. See how on page 440.

The Import Chart Command

The APF3812/IMPCHT command is used for importing charts from the APFIMPORT library. Previously the chart have to be exported using the APF3812/EXPCHT command.

When importing it can be specified, wether or not an existing chart can be overwritten. Important notes are stated below the description of the APF3812/EXPCHT command at page 508.

Prior to this command you have to import resources into the APFIMPORT library. See how on page 443.

The Restore Library from Folder Command

The command **APF3812/RSTLIBFLR** command is intended to be used for support purposes to restore a complete library from a folder, originally saved with the command **APF3812/SAVLIB2FLR**.

```
                    Restore Library from Folder (RSTLIBFLR)

Type choices, press Enter.

Library  . . . . . . . . . . . . SAVLIB     ______ Name
From folder  . . . . . . . . . . FROMFLR    ______________
_____________________________________
From document  . . . . . . . . . FROMDOC    _______ Character value
Option . . . . . . . . . . . . . OPTION     _______ *ALL, *NEW, *OLD, *FREE
Database member option . . . . . MBROPT     _______ *MATCH, *ALL, *NEW, *OLD
Allow object differences . . . . ALWOBJDIF _______ *NONE, *ALL
Restore to library . . . . . . . RSTLIB     _______ name, *SAVLIB









                                                                       Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

The Save Library to Folder Command

The command **APF3812/SAVLIB2FLR** command is intended to be used for support purposes to save a complete library to a folder. The file created in the folder can then be sent as an attachment to an E-mail. The saved file can be restored with the command APF3812/RSTLIBFLR.

```
                    Save Library into Folder (SAVLIB2FLR)

Type choices, press Enter.

Library  . . . . . . . . . . . . LIB      ______     Name
To folder  . . . . . . . . . . . TOFLR    _____________________
_____________________________________________________________
To document  . . . . . . . . . . TODOC    ______     Character value
Replace document . . . . . . . . REPLACE  ______     *NO
Target release . . . . . . . . . TGTRLS   ______     *CURRENT

                                                                  Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The Save Library to Stream File Command

This command saves a library into a normal save file and copies the save file into a stream file in the IFS. You can e.g. restore library by placing the stream file in the folder system and use the APF3812/RSTLIBFLR command. The **APF3812/SAVLIBSTMF** command looks like this:

```
                 Save library into stream file (SAVLIBSTMF)

Type choices, press Enter.

Library  . . . . . . . . . . .   LIB        __________    Name
Stream file name . . . . . . .   TOSTMF     ____________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________
Replace document . . . . . . . .   REPLACE    *NO_          *NO, *YES
Target release . . . . . . . . .   TGTRLS     *CURRENT      *CURRENT,*PRV,V3R1M0.
Data compression . . . . . . . .   DTACPR     *NO_          *NO, *YES
Save active  . . . . . . . . . .   SAVACT     *NO_          *NO, *LIB

                                                                  Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The End Auto Forms Control Job Command

The **APF3812/ENDAFCJOB** command can be used for ending a specific Auto Forms Control job. The job can either be stopped immediately or controlled. This command can be used in conjunction with the APF3812/STRAFCJOB command.

The Start Auto Forms Control Job Command

The **APF3812/STRAFCJOB** command can be used for starting one specific Auto Forms Control job. Using this command it is e.g. possible to schedule a CL-program calling this command in order to start merging and printing at a giving time.

Remember, in order for the job to become active, it is necessary that the AUTO_FORM subsystem is active. Refer to page 146.

The Start OSC Job Command

The **APF3812/STROSCJOB** command is equivalent to choosing option 1 = Run OSC for a specific output queue, on the **Work with OSC definitions** screen (see page 333).

Remember, that in order for the job to become active it is necessary, that the OSCCTL subsystem is active. Refer to page 327.

The command has these parameters:

```
                          Start Osc Job (STROSCJOB)

Type choices, press Enter.

Output queue . . . . . . . . . . . OUTQ         > OSC IN       Name
  Library  . . . . . . . . . . . .                > QUSRSYS      Name
Job name . . . . . . . . . . . . . JOB            *ALL           Name, *ALL
User . . . . . . . . . . . . . . . USER           *ALL           Name, *ALL
Job number . . . . . . . . . . . . JOBNBR         *ALL           000000-999999, *ALL
User data  . . . . . . . . . . . . USRDTA         *ALL           Name, *ALL
```

OUTQ The output queue for which OSC is to merge the spooled files. The resulting output queue(s) is defined in the OSC setup.

If any of the following parameters are not *ALL, then the spooled file attributes must fit the specified values in order to be considered. Any spooled files that does not fit the filter will be ignored. The filter can be used e.g. to select spooled files for a specific document (e.g. insurance policy) if the document number is inserted in the USRDTA field.

Utilities relevant for AFC Exit programs

The Transform *AFPDS print Command

The **APF3812/AFPTOASCII** command converts AFPDS spool files to ASCII spool files.

This command operates in the same manner as function 3 = Transform AFPDS to *USERACII in Auto Forms Control. Description and limitations can be seen at page 163.

Note, if you want to make use of this function, and the AFPDS spool files are using resource libraries not listed in the system library list, then the job description, APF3812/AUTO_FORM must be changed in order to include these libraries in the library list.

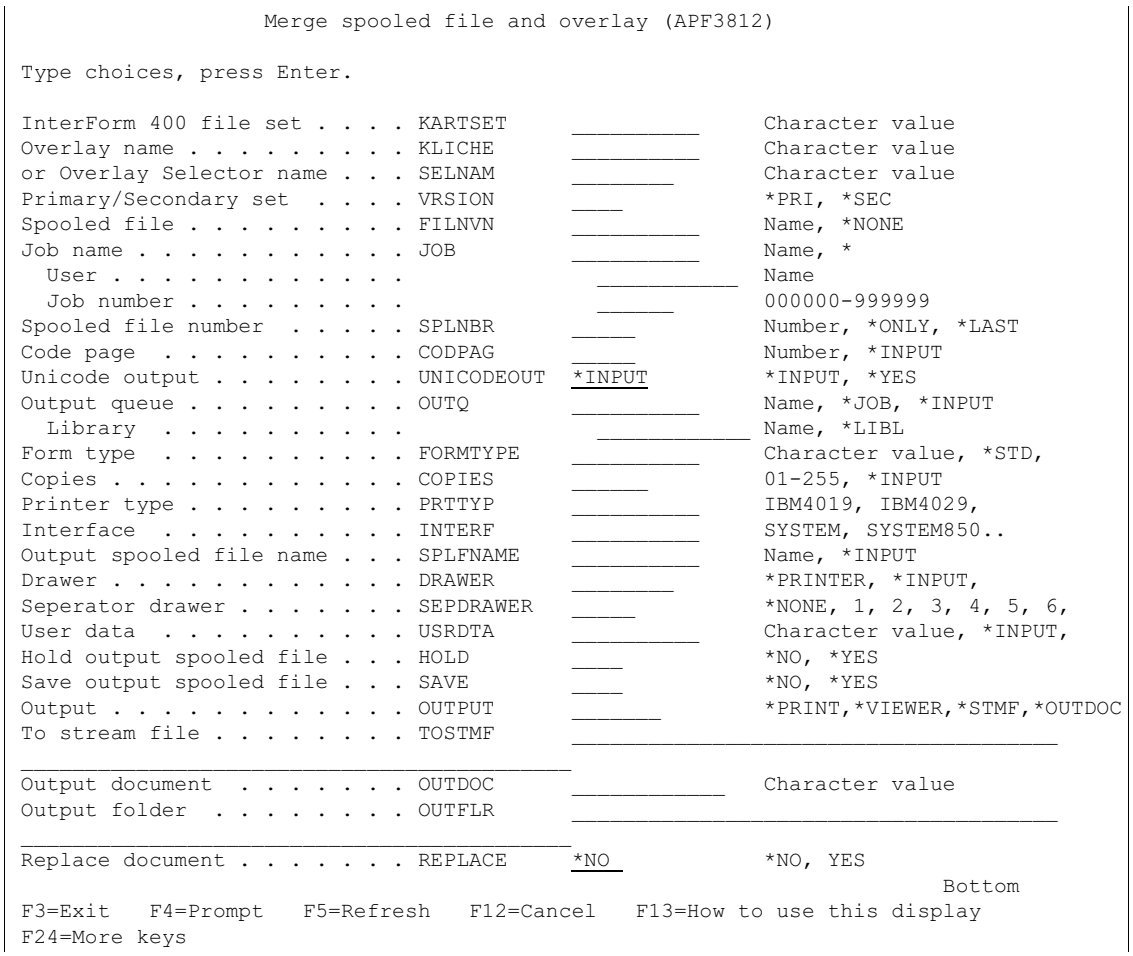
> 💣 WARNING 💣
>
> *As the only command in InterForm400, the AFPTOASCII command does NOT support selection between identical spooled files. (Where the job ID, spooled file name and spooled file number are all identical for more than one spooled file).*

> ☺ **TIP** ☺
>
> *If you alternatively use the AFPDS spooled files directly in InterForm400 only the text visible via DSPSPLF will be used, but all functions in InterForm400 are supported.*

The APF3812 Overlay Merge Command

The command **APF3812/APF3812** is intended to be included in CL-programs, so a spool entry created in a program, can be merged with an overlay within a job.

The command contains the following parameters: (Press F9 to display all the parameters - including OUTDOC, OUTFLR and REPLACE.)



```
                Merge spooled file and overlay (APF3812)

Type choices, press Enter.

InterForm 400 file set . . . . KARTSET      __________     Character value
Overlay name . . . . . . . . . KLICHE       __________     Character value
or Overlay Selector name . . . SELNAM       ________       Character value
Primary/Secondary set  . . . . VRSION       ____           *PRI, *SEC
Spooled file . . . . . . . . . FILNVN       __________     Name, *NONE
Job name . . . . . . . . . . . JOB          __________     Name, *
  User . . . . . . . . . . . .                ___________  Name
  Job number . . . . . . . . .                ______       000000-999999
Spooled file number  . . . . . SPLNBR       _____          Number, *ONLY, *LAST
Code page  . . . . . . . . . . CODPAG       _____          Number, *INPUT
Unicode output . . . . . . . . UNICODEOUT   *INPUT         *INPUT, *YES
Output queue . . . . . . . . . OUTQ         __________     Name, *JOB, *INPUT
  Library  . . . . . . . . . .               ____________ Name, *LIBL
Form type  . . . . . . . . . . FORMTYPE     __________     Character value, *STD,
Copies . . . . . . . . . . . . COPIES       ______         01-255, *INPUT
Printer type . . . . . . . . . PRTTYP       __________     IBM4019, IBM4029,
Interface  . . . . . . . . . . INTERF       __________     SYSTEM, SYSTEM850..
Output spooled file name . . . SPLFNAME     __________     Name, *INPUT
Drawer . . . . . . . . . . . . DRAWER       _________      *PRINTER, *INPUT,
Seperator drawer . . . . . . . SEPDRAWER    _____          *NONE, 1, 2, 3, 4, 5, 6,
User data  . . . . . . . . . . USRDTA       __________     Character value, *INPUT,
Hold output spooled file . . . HOLD         ____           *NO, *YES
Save output spooled file . . . SAVE         ____           *NO, *YES
Output . . . . . . . . . . . . OUTPUT       _______        *PRINT,*VIEWER,*STMF,*OUTDOC
To stream file . . . . . . . . TOSTMF       ________________________________________
________________________________________
Output document  . . . . . . . OUTDOC       ___________    Character value
Output folder  . . . . . . . . OUTFLR       ________________________________________
________________________________________
Replace document . . . . . . . REPLACE      *NO            *NO, YES
                                                                          Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The **OUTPUT** parameter is used to select what kind of output you want:

*PRINT Using this value, the output is a merge PCL spool file. The file is placed in the output queue specified in the OUTQ parameter.

*VIEWER This will merge and open Swiftview to display the result. (Should only be used in an interactive job).

*STMF Outputs to a stream file in the IFS. The TOSTMF field is to contain the path and file name.

*OUTDOC This value requires, the OUTDOC, OUTFLR and REPLACE parameters to be filled out. A PCL file (name defined in OUTDOC) will be created in the folder defined in OUTFLR.

The Copy CPI Spooled File Command

When you press F19-DSPPFM in overlay design you can see the temporary file: QTEMP/APF3812P. With the command **APF3812/CPYCPISPLF** you can create another file with the same contents. It is mainly intended for spooled files with variable CPI. The CPI of the spooled file is placed in position 199-201.

The Page Builder Spooled File Command

Software developers can update a copy of an existing SCS spooled file by using the InterForm400® PageBuilder feature.

The Page Builder feature is invoked by entering the Create PageBuilder Spooled File command (**APF3812/CRTPBSPLF**).

Prior to using the PageBuilder feature, a PageBuilder program must be created. This program must be specified for the PAGBLDPGM parameter on the CRTPBSPLF command.

Description of the Create PageBuilder Spooled File command, CRTPBSPLF

```
                  Create PageBuild Spooled File (CRTPBSPLF)

Type choices, press Enter.

PageBuilder program  . . . . . .  PAGBLDPGM     __________     Name
  Library  . . . . . . . . . . .                   __________  Name
Data parameter definition:        DTAPARM      _
  Find 'string'  . . . . . . . .                 __________     Value, *PAGE, *ANY
  String length  . . . . . . . .                 *STR__         1-256, *STR
  Return length  . . . . . . . .                 *STRLEN        1-256, *STRLEN
  Minimum line . . . . . . . . .                 ______         1-255
  Maximum line . . . . . . . . .                 ______         1-255
  Minimum starting position  . .                 ______         1-378
  Maximum starting position  . .                 ______         1-378
             + for more values                   _
Spooled file . . . . . . . . . .  FILE           __________     Name
Job name . . . . . . . . . . . .  JOB            *_________     Name, *
  User . . . . . . . . . . . . .                   __________  Name
  Number . . . . . . . . . . . .                   ______      000000-999999
Spooled file number  . . . . . .  SPLNBR              *LAST_  1-9999,*ONLY,*LAST
Application ID parameter . . . .  APPIDPARM     ________________________________
_____________________________________________
Output queue . . . . . . . . . .  OUTQ           *INPUT____     Name, *INPUT
  Library  . . . . . . . . . . .                   __________  Name, *LIBL
Form type  . . . . . . . . . . .  FORMTYPE       *INPUT____     Character value
Output spooled file name . . . .  SPLFNAME       *INPUT____     Name, *INPUT

F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

- First the CRTPBSPLF command calls the PageBuilder program (specified by the PAGBLDPGM keyword) with parameter 1 = ‘STR’.
- Then the CRTPBSPLF command reads all pages from the input spooled file specified by the FILE, JOB and SPLNBR keywords.
- For every page in the spooled file the PageBuilder program is called having parameter 1 = ‘PAG’ and parameter DATA01-DATA10 equal to the data found on the active page according to the values for the DTAPARM keyword - unless you use ***PAGE** then the contents of the current page is transferred in an array 378 char wide by 255.
- The PageBuilder program now updates parameters (DATA01-DATA10) according to program logic - or the array if you use ***PAGE**.
- The CRTPBSPLF command creates a new page in a new SCS spooled file with the updated values (DATA01-DATA10).
- After processing all pages your PageBuilder program is called once more having parameter 1=’END’

The parameters of the command are these:

PAGBLDPGM The PageBuilder program that the command is to call for each page.

DTAPARM Use this to define each of parameters DATA01-DATA10. Insert a '+' in the first or last line to insert and define another DATA field. Each of the DATA fields are defined like this:

Find 'string':
Type in e.g. ***PAGE** to transfer the contents of whole spooled file page to the page builder program without the use of DATA01-DATA10. Use of ***ANY** tells that you do not want to search after any specific text. Other values are interpreted as a string to search for in each spooled file page.

> **NOTE**
> If you use ***PAGE** for Find string, the rest of the fields for DTAPARM are ignored.

String length:
The length of the string to search for/compare with in 'Find string'. Use of ***STR** indicates that you want to use the length of the that string.

Return length:
The number of characters to insert in the spooled file from the DATAxx, that is returned from the page builder program.

Minimum/maximum line:
The interval of lines in the spooled file to search for the string. If you know what line you want to use just specify this for both.

Minimum/maximum starting position:
The interval of positions to search in the spooled file for the 'Find string'.

Pass data from position:
You can pass some spooled file data from the line where the string of text is found onto the page builder program (in DATAxx). Here you state the starting position of this text. Use *STRPOS to use the position where 'Find string' text is found.

Pass data length:
Works like the previous field. This just determines the length of the spooled file data to move to the page builder program.

FILE Spooled file name of the *SCS spooled file to operate on.

JOB Job name, user profile and job number of the spooled file.

SPLNBR Spooled file number.

APPIDPARM Application ID parameter. This is transfered onto the page builder program as a parameter. This can be useful if you e.g. want to call the same pagebuilder program from different uses of the CRTPBSPLF command.

OUTQ The output queue where the new and changed spooled file will be created. *INPUT will make the command create the new spooled file on the same output queue as the original spooled file.

FORMTYPE The formtype of the new, changed spooled file.

SPLFNAME The name of the new spooled file.

Example:

```
CRTPBSPLF   PAGBLDPGM(LIB1/BPSAMP)
            DTAPARM(('INVOICE NO' 10 10 1 80 51 51) (*ANY 9 9 11 11 12
            12))
            FILE(QSYSPRT)
            JOB(*)
            SPLNBR(*LAST)
            APPIDPARM('MY ID')
            OUTQ(DIAG)
```

This will process the last QSYSPRT spooled file for the current job, calling the program BPSAMP in library LIB1 for every page in this spooled file.

Keyword DTAPARM describes where to find the values for parameters DATA01-DATA10 (see PageBuilder program parameters below) which are passed to program BPSAMP.

('INVOICE NO' 10 10 1 80 51 51) = specification of DATA01.
Value will be 'INVOICE NO' (or blank if not found in line 1-80 position 51).
Length = 10 characters.
Length = 10 characters, when returned from the program BPSAMP,

(*ANY 9 9 11 11 12 12) = specification of DATA02.
*ANY indicate *whatever found* (in line 11 position 12).
Pass 9 characters to program BPSAMP
Return 9 characters from program BPSAMP.

NOTE

The DATA01-DATA10 parameters can be used for searching for a specific text in the spooled file. Note however that they return/find only the FIRST occurrence on the page.

PageBuilder program parameters

Parameter #	Length	Usage	Description
1	3	I	CRTPBSPLF call option STR, PAG or END
2	64	I	Value from the APPIDPARM keyword
3	256	I/O	DATA01 (input from spool file - DTAPARM)
4	256	I/O	DATA02 (input from spool file - DTAPARM)
.....	256	....	....
12	256	I/O	DATA10 (input from spool file - DTAPARM)

For examples of sources for a Page Builder Program see member **PAGBLDPGM** and **PAGBLDPGM2** in source file APF3812/APISRC. **PAGBLDPGM2** illustrates how to use the ***PAGE** option.

The Convert PCL Spooled File Command

The **APF3812/CVTPCLSPLF** command converts a PCL spool file to a SCS spool file. This command has been created mainly for converting J.D. Edwards OneWorld spool files to SCS, making it possible to merge the spool file in InterForm400®.

```
                    Convert PCL Spooled File (CVTPCLSPLF)

Type choices, press Enter.

Spooled file . . . . . .   FILE           __________     Name
Job name . . . . . .       JOB            *_________     Name, *
  User . . . . . .                          __________   Name
  Number . . . . . .                        ______       000000-999999
Spooled file number  . . . . . .   SPLNBR        *LAST_       1-9999, *ONLY,.
PCL command subset . . . . . .     PCLSUBSET     001          001
PCL application  . . . . . .       PCAPPL        *ANY_____    *ANY, *ONEWORLD,
Output queue . . . . . .           OUTQ          *INPUT____   Name, *INPUT
  Library  . . . . . .                           __________   Name, *LIBL
Form type  . . . . . .             FORMTYPE      *INPUT____   Character value
User data  . . . . . .             USRDTA        *INPUT____   Character value
Save output spooled file . . . .   SAVE          *INPUT       *INPUT,*YES,*NO
Code page  . . . . . .             CODPAG        *INPUT_      *INPUT, *SYSVAL,
Input page width . . . . . .       INPWID        *DFT____     1-28, *DFT, *A4,
Maximum page length  . . . . . .   OUTPAGLEN     255___       10-255
Maximum page width . . . . . .     OUTPAGWID     360___       80-360
                                                                        Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The Convert Spooled File to XML Command

If you want to create XML files with InterForm400 from input spooled files, then you need first to create an XML (or XML+) finishing definition as described on page 277 and 294. The actual conversion can be triggered either via the X-function in Auto Forms Control as described on page 177, or with this command, **APF3812/CVTSPLFXML**. The parameters to the command selects a spooled file and the XML/XML+ finishing definition. The command can also be called interactively to enable debugging of the conversion as described on page 306.

The Merge Spooled File IPL Command

When you want to merge a spooled file and print the result on an IPL (Intermec Printer Language) compatible printer, then you should consider to merge in Auto Forms Control and use either printer type IPL203 or IPL300.

If you want to merge the spooled file via a command, then you can consider the command: **APF3812/MRGSPLFIPL**

The command is VERY simular to the MRGSPLFZPL command, so please refer to the description of that command below on page 517 for further details.

The Merge Spooled File PDF Command

This command, **APF3812/MRGSPLFPDF** can be used for creating PDF files containing the result of a merge in InterForm400®. This PDF file can even be e-mailed as an attached file, directly from your System i. See more information at page 449.

NOTE

In order to get PDF output you need to purchase the PDF module for InterForm400.

The Merge Spooled File ZPL Command

The Merge Spooled File ZPL Command, **APF3812/MRGSPLFZPL** can be used e.g. to merge into a Zebra spooled file from an Auto Forms Control user exit program. This command is the Zebra printer equivalent to the commands APF3812/APF3812 and APF3812/MRGSPLFPDF. For details of the parameters see the APF3812/APF3812 command at page 512. Only additional parameters compared to the **APF3812/APF3812** command are these:

Print mode
(PRINTMODE):

***TEAROFF** mean that you will manually tear of the labels.
***REWIND** can be used for rewinding all printed labels onto another roll. This requires special hardware installed.
***PEELOFF** will print only one label at a time waiting for the current label to be peeled off. (This also requires additional hardware).
***CUTTER** (requires hardware cutter) normally cuts the media for each print job unless you use ***CONTINUOUS** - then ***CUTTER** will cut out each label.

Labels / Continuous
(MEDIATRACK):

Controls the feed of the labels on the printer. Select ***LABELS** if the media contains of separate labels. select ***CONTINUOUS** if the media is not separated into labels (in this case you would probably select ***CUTTER** for the **print mode** parameter). Other values are: ***WEBLABEL**
and ***MARKLABEL** - for various ways to mark the edge of a label on the media.

Media type
(MEDIATYPE):

Select ***TRANSFER** if you use a non heat sensitive media otherwise use ***THERMAL**.

> **NOTE**
> Creation of ZPL output from InterForm400 requires the purchase of the ZPL module for InterForm400.

The Merge Template with Variables command

The command, APF3812/MRGTPLVAR - Merge template with variables generates a new stream file in the IFS based on an input stream file, that may contain the variables, *V1-*V97. This can be e.g. be used a useful tool to interface with Interarchive and other archive solutions with a PDF file naming definition.

To use it you first need to build an input, template stream file. It can be XML, CSV, TXT or whatever you prefer. Here you refer to the dynamic variables (originating e.g. from an input spooled file) as *V1-*V97:

```
                  Merge template with variables (MRGTPLVAR)

Type choices, press Enter.

From template stream file  . . . TPLFIL        '/MyDir/index template.xml'
To output stream file  . . . . . OUTFIL        '/Archive_in/Index.xml'

Variable *V1 . . . . . . . . . . V1            'Company Name'
Variable *V2 . . . . . . . . . . V2            '1234'
Variable *V3 . . . . . . . . . . V3
Variable *V4 . . . . . . . . . . V4
Variable *V5 . . . . . . . . . . V5
Variable *V6 . . . . . . . . . . V6
                                                                    More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The CCSID of the output stream file will be the same as the input stream file.

You should ensure, that the CCSID of the input template stream file is correct e.g. with WRKLNK OBJ('/apf3812home/work/index_template.xml') and then use option 8=Display attributes:

```
                           Display Attributes

Object . . . . . :   /apf3812home/work/index_template.xml

Type . . . . . :   STMF

Owner  . . . . . :   KSE
System object is on  . . . . . :   Local
Auxiliary storage pool . . . . . :   1
  Object overflowed  . . . . . :   No

Coded character set ID . . . . . :   1252
Hidden file  . . . . . :   No
PC system file . . . . . :   No
Read only  . . . . . :   No

Need to archive (PC) . . . . . :   Yes
Need to archive (System) . . . . . :   Yes

                                                                      More...
Press Enter to continue.

F3=Exit   F12=Cancel   F22=Display entire field
```

In the example above the CCSID of the file is 1252, which is also known as ANSI or LATIN1. If the template file was created in another CCSID than the IBM i thinks, then you need to correct it before running the command. If e.g. the template stream file really is UTF-8 encoded, then you need to change the CCSID of the stream file before running the command into 1208 e.g. with this command:
CHGATR OBJ('/MyDir/index:template.xml') ATR(*CCSID) VALUE(1208)

The list of CCSID is found here:
http://www-01.ibm.com/software/globalization/ccsid/ccsid_registered.html

The command can be called from a closing exit program in the PDF file naming definition which is described on page **260**.

The PDFConcat Command

You can merge (or concat) two PDF files together with the command, **APF3812/PDFCONCAT**. A valid license, which includes the Advanced PDF module is required. Java version 1.7 is also needed. Java 1.7 is available for OS400 version 7.1 and higher.

The command has two parameters:

BASESTMF The PDF file onto which the second PDF file is to be added. This file will be changed after running the command.

ADDSTMF The PDF file, that should be added (concatenated) onto the BASESTMF file.

Example for use of the command:

```
                          PDF Concat (PDFCONCAT)

Type choices, press Enter.

Base PDF streamfile  . . . . . . BASESTMF     > '/apf3812home/view/kse.pdf'
                                                                            
                                                                            
                                                                            
Add PDF streamfile . . . . . . . ADDSTMF      > '/apf3812home/view/ik.pdf'
                                                                            
                                                                            
                                                                            
```

The Print ASCII File Command

The **APF3812/PRTASCF** command prints a ASCII file to an output queue as a SCS spool file. The ASCII file must be placed in IFS. The contents of the ASCII file must be PRTCTL(*FCFC), which means the first character of each line is a control code for the printer. E.g. a '1' in position 1 is specifying, that this line is to be printed as the first line of a new page. All other lines must have a blank in this position.

This command can substitute the OS/400 commands: PRTASCSTMF and CVTPCLSPLF. The input for CVTPCLSPLF and PRTASCF have to be symbol set ISO-8859-1 (Latin 1).

The Sign PDF File Command

The command, APF3812/SGNPDFF (Sign PDF file) is able to add a signature to an existing PDF file. The signpad module is required for this command. The command (and signpad) will await the signing of the document. After the pen has touched the screen, the signer has 5 seconds to complete the signing. Refer to **Appendix V** on page **685** for setup and prerequisites. The command looks like this:

```
                          Sign PDF file (SGNPDFF)

Type choices, press Enter.

PDF stream file  . . . . . . . . STMF         > '/apf3812home/view/kse.pdf'
                                                                            
Signature pad  . . . . . . . . . SGNPAD       > SALES DESK
                                                                            
Signature box:                   SGNBOX
  Page . . . . . . . . . . . . .                       1-32000, *LAST, *FIRST
  Top (II.PPP) . . . . . . . . .                > 10.120   Number
  Left (II.PPP)  . . . . . . . .                > 1        Number
  Height (II.PPP)  . . . . . . .                > 1        Number
  Width (II.PPP) . . . . . . . .                > 4        Number
Preview  . . . . . . . . . . . . PREVIEW        *NO        *NO, *YES
                                                                            
                                                                            
                                                                            
                                                                            
                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The parameters are:

STMF The stream file (PDF file) that is to have the signature added. The file will be replaced with the new, signed file.

SGNPAD The signpad to be used for the signing. This can be either the serial number of the signpad or the alternative name you can give it in the signpad administration (refer to page **688**).

SGNBOX The box or frame to use for the signing. The frame can either be specified on the command or a frame defined in the overlay. For the SGNBOX you can specify

either:
A specific page number (in the PDF file) for which the signature is to be added combined with the actual position and size of designated signature frame.

Or:
*LAST or *FIRST for the page. This means: Use either the last or the first frame in the used overlay(s) for signing. If you use this, then no values for Top, Left, Height and Width are allowed.

PREVIEW If you state preview=*YES, the whole PDF file will first be displayed on the signpad. The signer can read the whole document before signing the document.

The Split Spooled File Command

The command APF3812/SPLITSPLF makes it possible to split an *SCS spooled file without Auto Forms Control. You only identify the spooled file and an InterForm400 split definition:

```
                      Split Spooled File (SPLITSPLF)

Type choices, press Enter.

Split definition . . . . SPLITDEF  __________    Name
Job Name . . . . . . . . JOB       __________    Name, *
  User Name  . . . . . .             __________  Name
  Job Number . . . . . .             ______      000000-999999
Spooled File Name  . . . FILE      __________    Name
Spooled File Number  . . SPLNBR    *LAST         1-999999, *ONLY, *LAST

                                                                  Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Split definitions will normally be executed through a function **B** in Auto Forms Control. Refer to page 170 and 199 for more information about that.

After running the SPLITSPLF command in your own program you can e.g. find the new resulting spooled files if you give each resulting spooled file a unique spooled file name and refer to the last created spooled file with that name created by the current job e.g.:

```
CHGSPLFA FILE(<Spooled file name>) JOB(*) SPLNBR(*LAST)
OUTQ(<Library>/<New output queue>)
```

Spooled File Inspector (SFI)

The purpose of this feature is, that InterForm400® can look for a special string in a spool file and change the form type of the spool file depending on wether the string was found or not. This can be done without any programming.

To maintain SFI definitions use the **APF3812/WRKSFID** command. (See Sample SFI definition below). To use/run an SFI definition, enter a line in an Auto Forms Control definition using function 8 (Call Program), and specify program RUNSFI and library APF3812. (See Description of the RUNSFI program below).

```
         Create SFI definition                                    SFI110D

SFI definition . . . . . .   DEMO______

Description  . . . . . . .   My_test_____________________________________________

Search text  . . . . . . .   Total_errors____0_____________________________
  Page . . . . . . . . . .   *LAST_        *ANY, *FIRST, *LAST
  Print line . . . . . . .   1__ -_72
  Position . . . . . . . .   2__ -_18

New form type
  If text found  . . . . .   *SAME         Form type, *SAME
  - If not found . . . . .   ERROR         Form type, *SAME
```

When AFC invokes the RUNSFI program, it will look for a SFI definition having the same name as the form type of the spooled file. (I.e. if the form type of your spooled file is DEMO, the SFI definition named DEMO will be used).

The RUNSFI program then scans the spooled file for the search text string specified in the SFI definition (within the specified page-, line- and position-limits).

If the text string was found, the form type of the spooled file will be changed to the value specified in the 'New form type If text found' field. Likewise the form type will be changed to the value specified in the '- If not found' field if the text string wasn't found.
Finally the RUNSFI program will hold and release the spooled file - in order to let AFC process the spooled file with the new form type - unless the value for New form type is *SAME, then the spooled file will not be held and released.

Note:
If a SFI definition with the name of the spooled file's form type doesn't exist - no action will be performed. All comparisons in SFI are case sensitive - including the SFI definition / form type comparison.

Utility Commands relevant for E-mailing

The Clear Mail Log Command

The command Clear Mail Log (**APF3812/CLRMAILLOG**) is closely linked with the APF3812/WRKMAILLOG command. Whenever you e-mail from InterForm400 both the e-mail and the status of the e-mail is stored in a log. If you want to purge old e-mails and log entries you can use the Clear Mail Log command. As default all entries older than 120 days will be deleted when you run this command:

```
                        Clear Mail Log (CLRMAILLOG)

Type choices, press Enter.

Mimimum days old . . . . . . . . MINDAYS        120         14-365
OutBox directory . . . . . . . . OUTBOXDIR      *ALL        Name, *ALL
Reorganize physical file mbrs  . RGZ            *NO         *NO, *YES

                                                                    Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

The **OUTBOXDIR** (OutBox directory) can be used for specifying a specific sub directory (within /APF3812Home/OutBox), if you only want to clean up a specific subdirectory. With ***ALL** (default) all subdirectories will be cleaned for old e-mails.

You can also decide to reorganize the members of the physical files used for the mail log with this command. As default the members are not reorganized. For a description of what reorganizing is refer to the description of the OS400 command, **RGZPFM**.

The e-mails are stored in /APF3812Mail/OutBox.

> ☺ **TIP** ☺
> *It is a REALLY good idea to run the CLRMAILLOG command on a regular basis to prevent excessive disk usage as the e-mails will build up in /APF3812Home/OutBox.*

The End Mail Subsystem Command

The command **APF3812/ENDMAILSBS** can be used for ending the APF3812/MAILINTER subsystem which is used for InterForm400 SMTP. Refer to page 347 for details. The advantage of the ENDMAILSBS command compared to normal ENDSBS is e.g. that this will run faster.

The Merge Spooled File PDF Command

This command, **APF3812/MRGSPLFPDF** can be used for creating PDF files containing the result of a merge in InterForm400®. This PDF file can even be e-mailed as an attached file, directly from your System i. See more information at page 449.

Refer to the description of the SNDEMAIL command above for a description of the fields MSGSTMF and MSGVARS and how to refer to an html file in the IFS.

> **NOTE**
> In order to get PDF output you need to purchase the PDF module for InterForm400.

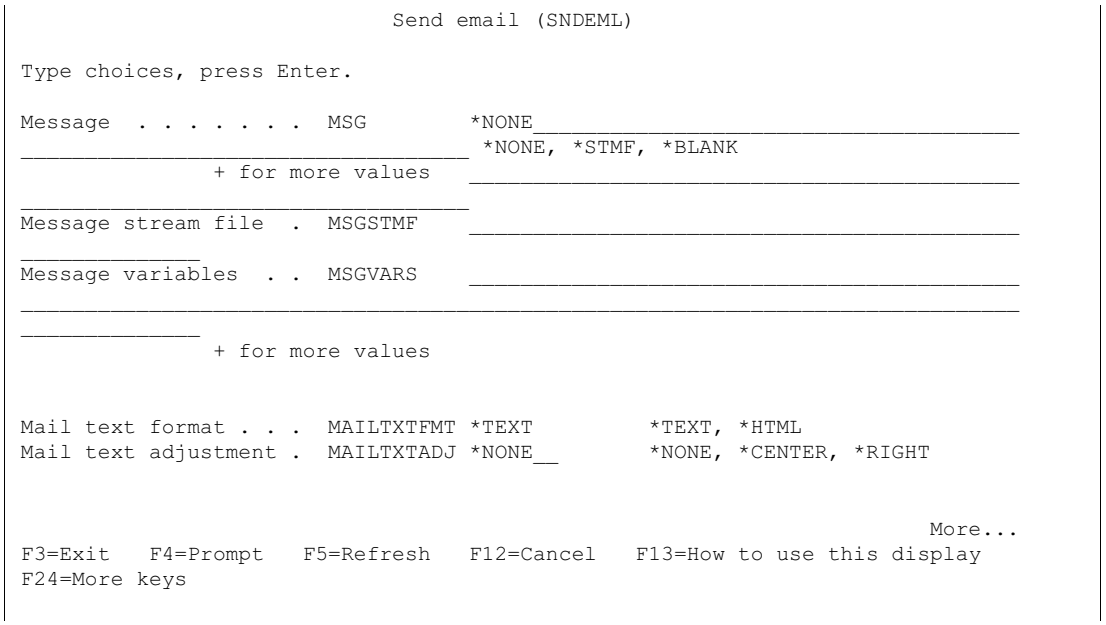
The SNDMAIL command

Note: The command, APF3812/SNDEMAIL is considered obsolete. It is still supported, but it is recommended to use the SNDEML command instead as this command offers the same functionality and more.

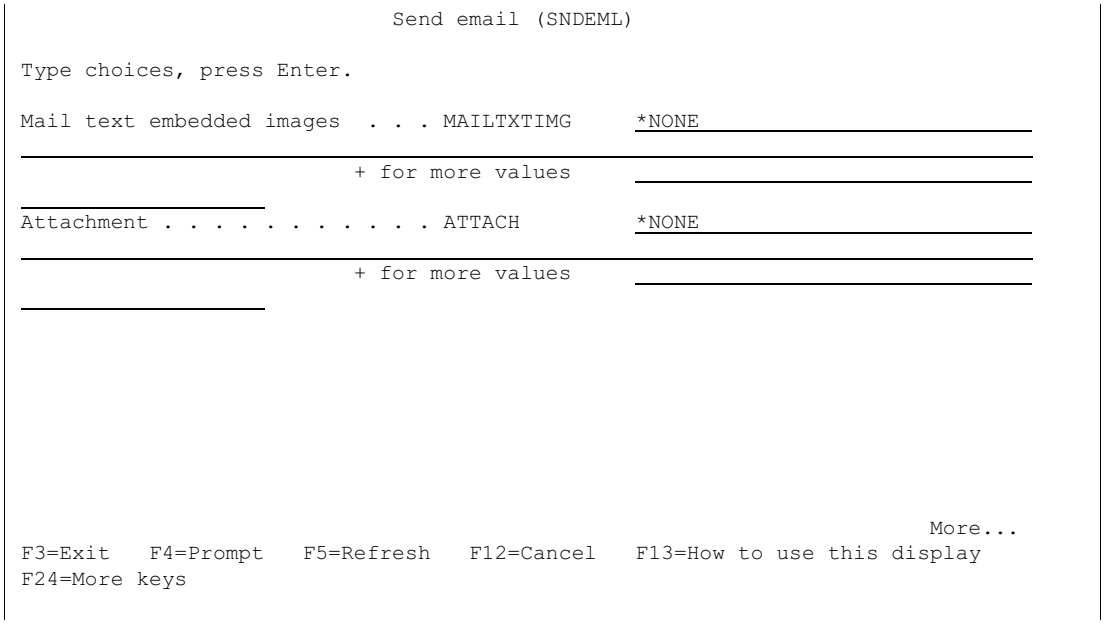
The Send email command (Newest)

The command **APF3812/SNDEML is** a newer version of both the APF3812/SNDMAIL and SNDEMAIL commands with the main difference that the SNDEML command is able to send to multiple receivers:

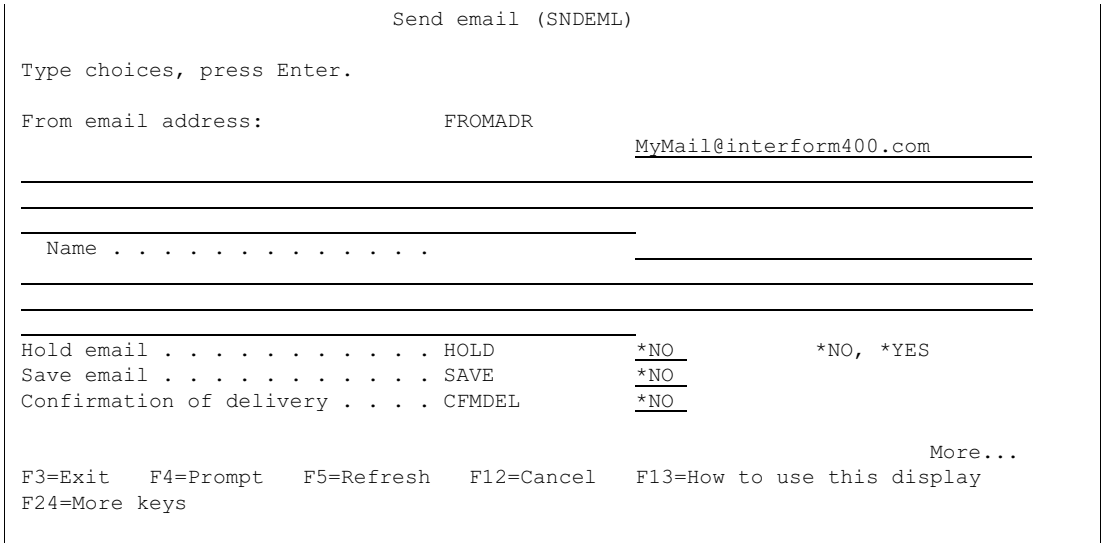
```
                            Send email (SNDEML)

Type choices, press Enter.

To email address:       TOADR      _
  Email address  . . . . . . . .   ____________________________________________
____________________________________________________________________________
____________________________________________________________________________
_____________________________
  Name . . . . . . . . . . . . .   *NONE_____________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
_____________ + for more values   _
Subject  . . . . . . .  SUBJECT    *NONE_____________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
_____________

                                                                        More...
F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
F13=How to use this display         F24=More keys
```



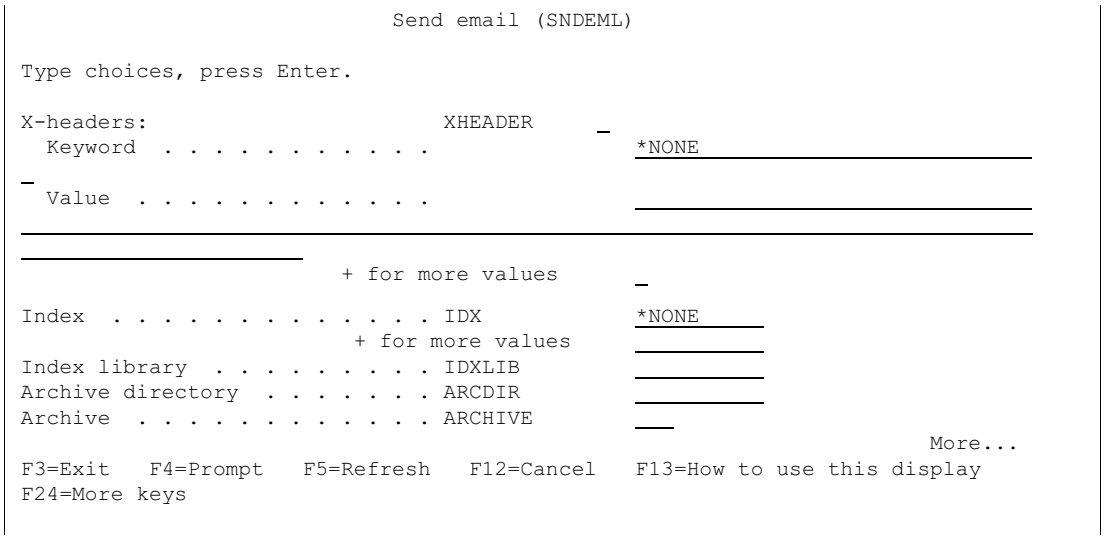
```
                              Send email (SNDEML)

Type choices, press Enter.

Message  . . . . . .  MSG        *NONE_____________________________________
_____________________________  *NONE, *STMF, *BLANK
               + for more values  _____________________________________________
_____________________________
Message stream file  .  MSGSTMF   _____________________________________________
_____________
Message variables  . .  MSGVARS   _____________________________________________
_____________________________________________________________________________
_____________
               + for more values


Mail text format . . .  MAILTXTFMT *TEXT         *TEXT, *HTML
Mail text adjustment .  MAILTXTADJ *NONE__       *NONE, *CENTER, *RIGHT


                                                                        More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

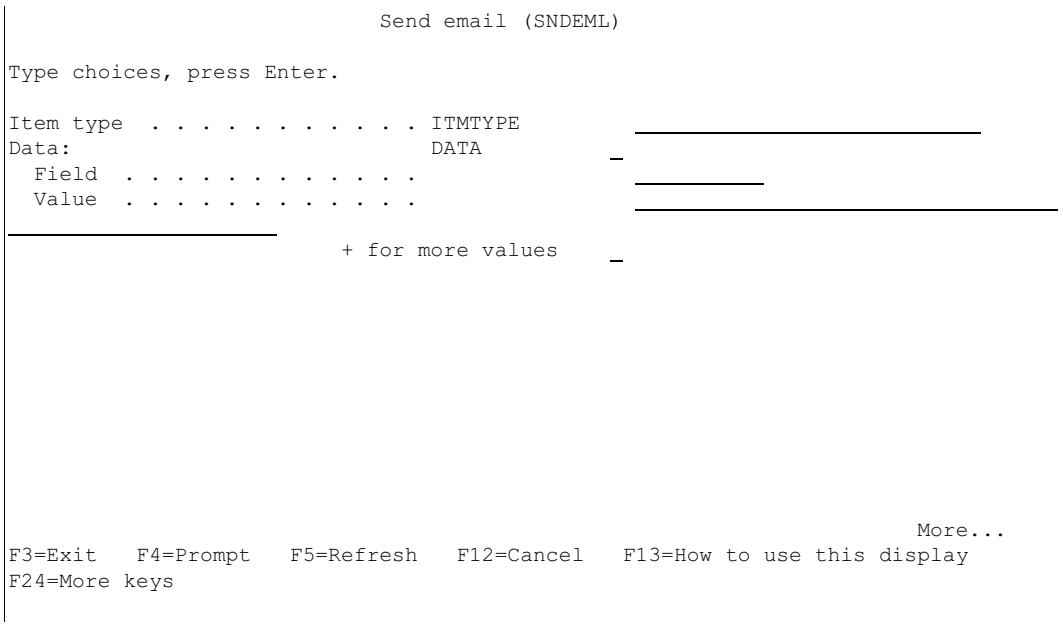


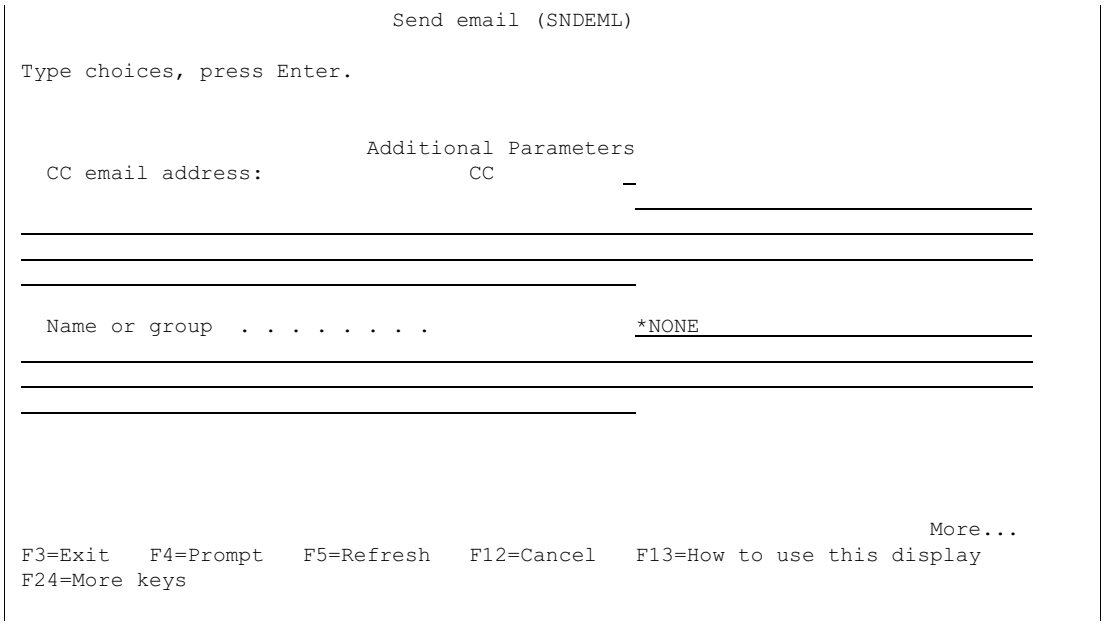
```
                              Send email (SNDEML)

Type choices, press Enter.

Mail text embedded images  . . . MAILTXTIMG     *NONE_____________________________
_____________________________________________________________________________
                          + for more values     _____________________________________
_____________________
Attachment . . . . . . . . . . . ATTACH         *NONE_____________________________
_____________________________________________________________________________
                          + for more values     _____________________________________
_____________________




                                                                        More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```



```
                              Send email (SNDEML)

Type choices, press Enter.

From email address:              FROMADR
                                                MyMail@interform400.com_____
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________
  Name . . . . . . . . . . . . .                _____________________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________
Hold email . . . . . . . . . . . HOLD           *NO           *NO, *YES
Save email . . . . . . . . . . . SAVE           *NO
Confirmation of delivery . . . . CFMDEL         *NO

                                                                        More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```


Send email (SNDEML)
Type choices, press Enter.
X-headers: XHEADER
Keyword . . . . . *NONE
Value . . . . . .
+ for more values
Index . . . . . IDX *NONE
+ for more values
Index library . . . . . IDXLIB
Archive directory . . . . . ARCDIR
Archive . . . . . ARCHIVE
More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys


Send email (SNDEML)
Type choices, press Enter.
Item type . . . . . ITMTYPE
Data: DATA
Field . . . . . .
Value . . . . . .
+ for more values
More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys


Send email (SNDEML)
Type choices, press Enter.
Additional Parameters
CC email address: CC
Name or group . . . . . *NONE
More...
F3=Exit F4=Prompt F5=Refresh F12=Cancel F13=How to use this display
F24=More keys

```
                             Send email (SNDEML)

Type choices, press Enter.

BCC email address:              BCC            _______________________________
______________________________________________________________________________
______________________________________________________________________________
________________________________________________

  Name or group  . . . . . . . .               *NONE__________________________
______________________________________________________________________________
______________________________________________________________________________
________________________________________________
OutBox directory . . . . . . . . OUTBOXDIR     _____________




                                                                       Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Type '+' in TOADR, CC or BCC if you want to add another receiver.

The message can be typed into the MSG field or you can refer to an html file in the IFS if you type ***STMF** in the **MSG** field and type the stream file name (html file) in the parameter **MSGSTMF**. You can even substitute any variable (*V1-*V9) typed either in the MSG text or in the SMTF referred to via MSGVARS. The first lines added as **MSGVARS** is substituted for *V1 the next for *V2 and so on..

Mail text format (MAILTXTFMT) indicates how the message of the e-mail is to be sent - either as simple text (in a fixed font) or with html commands within.

If you are specifying your own html either in the MSG parameter or in the referred html file, then you can also embed local images directly in the html - instead of linking to images, that are globally available . You can do that in two ways:

1. State a directory in which all the local images inside the html are stored in the MAILTXTIMG parameter. The html should then only refer to the image file names like e.g. `<img src="bottom-banner1.jpg">`.
2. List the images in the MAILTXTIMG parameter like:
   ```
   MAILTXTIMG('/pcdata/temp/png/Interform-01-01.png'
                  '/pcdata/temp/png/as400.jpg')
   ```
   - and refer to the images by the number in the MAILTXTIMG parameter list inside the html e.g. like so:

```
MSG('<b>This email is from InterForm 400! :)</b><br>'
'Here is an image:<br>'
'<img src="cid:image1" alt="Manual"><br>'
     'Here is another image:<br>'
     '<img src="cid:image2" alt="AS400">')
```

Remember to specify the FROMADR as the default value, *CURRENT will refer to the email information stored in system directory of the user running the current job. If you forget you might get this error message:

```
                      Additional Message Information

Message ID . . . . . :   APF4705       Severity . . . . . :   00
Message type . . . . . :   Information
Date sent  . . . . . :   06/01/14      Time sent  . . . . . :   14:33:29

Message . . . . :   No email address for sender (<USERID>) exists.
Either specify an email address for the sender, or add the preferred name,
  SMTP user ID and SMTP domain (email address) to the system directory for
  user KSE.
Use the Work with Directory Entries (WRKDIRE) command to add the user
  information, if you prefer to use the system directory.
```

To solve this error you need either to specify the sender or alternatively update the needed information for the user profile running the current job e.g. via WRKDIRE.

If you want to send to an email group, you should state it like 'TOADR((*GROUP SALES_GRP))', where MAIL_GRP is the name of the email group defined (written in capital letters).

HOLD Holds the email. It will appear in the mail log with status= Held, from where you can send it later. This option is only supported for InterForm SMTP.

SAVE Saves a copy of the email in the /APF3812Mail/Log directory.

For archiving in InterArchive you should use the parameters:
ARCHIVE The archive to archive in.
ITMTYPE The Interarchive Item type to archive as.
DATA Fields and corresponding data to use for archiving.

OUTBOXDIR states the subdirecory (if any) to use (inside /APF3812Home/OutBox) to store the e-mail. If you state *CURUSR the directory will be the same as the owner of the original spooled file. The subdirectory will be created automatically, if it does not exist.

Note: In the ATTACH parameter you state the path and file name of the files you want to attach to the email. Up to max. 30 files can be attached.

The XHEADER field is described on page **231**.

The Send Mail Command

Note: This command is considered obsolete. It is still supported, but it is recommended to use the SNDEML command above instead as this command offers the same functionality and more.

The **APF3812/SNDMAIL** command can be used for sending an E-mail from the System i with up to 30 attached files of your choice, but it does not support an InterForm400® merge in the same manner as APF3812/MRGSPLFPDF.

Note, that this command has the parameter: Confirmation of delivery (CFMDEL). With this you will get a confirmation e-mail when the receiver opens the e-mail. Note however, that this confirmation does not work with e.g. Notes.

Refer to the description of the SNDEML command above for a description of the fields MSGSTMF and MSGVARS and how to refer to an html file in the IFS. Please note that the html file referred to as MSGSTMF must be utf-8 encoded.

It is recommended to use the SNDEML command above instead as the SNDEML command can do the same as SNDMAIL - and send the email to multiple receivers.

The Send Mails Command

The Send Mails command (**APF3812/SNDMAILS**) is to be used only by installations, that have

chosen to use '3=InterForm SMTP (register only)' in option '**3. Configure email**' of the InterForm400 Configuration menu (Refer to page 347). It will send out any e-mails, that have been registered to be sent.

With option '*3=InterForm SMTP (register only)*' the e-mails are only registered and stored waiting for execution of the command APF3812/SNDMAILS. Use the **APF3812/WRKMAILLOG** command to see any waiting e-mail (they will have status *READY). Refer to page 347 for information of how to register e-mails.

The Start Mail Subsystem Command

The **APF3812/STRMAILSBS** command can be used for starting the APF3812/MAILINTER subsystem which is used for InterForm400 SMTP. Refer to page 347 for information of InterForm400 SMTP.

The Work Mail addresses Command

The **APF3812/WRKMAILADR** command enables the possibility to give access to maintenance of E-mail addresses without entering the InterForm400® menues. These addresses are used in combination with the E-mail finishing function - see page 243.

The command should be called with a parameter, MAILTASK, that identifies the E-mail finishing definition to work with.

The Work Mail Log Command

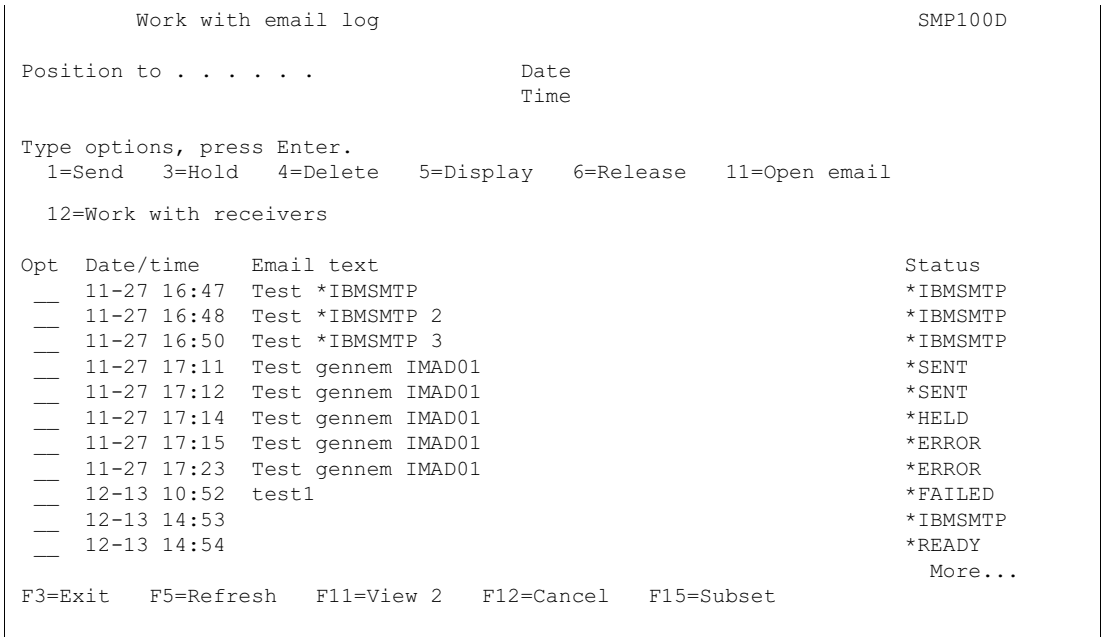
This command works exactly like the menu option '5. Work with email log', which can be found via '80. Administering InterForm 400', '40. Email administration'.

The command can be called with these parameters:

```
                      Work with mail log (WRKMAILLOG)

Type choices, press Enter.

Job name . . . . . JOB            *ALL        Name, *ALL
User . . . . . . . . . . USER       > *ALL        Name, *ALL
OutBox . . . . . . . . . OUTBOX     > INVOICES     Name, *ALL
Text . . . . . . . . . . TEXT         *ALL
_____________________________
From email address . . . FROMADR      *ALL
_____________________________
To email address . . . . TOADR        *ALL
_____________________________
Status . . . . . . . . . STATUS     > *FAILED      *ALL, *READY, *SENT...
Views  . . . . . . . . . VIEWS        *ALL        *ALL, *SUBJECT, *FROMADR...
                          + for more values




                                                                      Bottom
F3=Exit    F4=Prompt    F5=Refresh    F12=Cancel    F13=How to use this display
F24=More keys
```

All of them selects a subset of the emails except the VIEWS field. The VIEWS field can be used for selecting which fields, that you want to include on the list of emails. Possible values are: *ALL,*SUBJECT, *FROMADR,*TOADR,*OUTBOX. You can select one or more of these fields.

The Work Mail Log Command (APF3812/WRKMAILLOG) shows a list of the e-mails, that have been sent:



With option **4=Delete** you can delete emails, that have not been sent. To delete other emails you need to use the command, **APF3812/CLRMAILLOG**, which is described on page **523**.

Possible statuses for e-mails sent via InterForm400 SMTP are:

***ERROR**, ***FAILED**, ***HELD**, ***READY**, ***RETRY**, ***SENT** and combined ***RSEF**.

E-mails sent via **OS400 SMTP** cannot be monitored in the same details so such e-mails always have the status ***IBMSMTP** to indicate that the e-mail have been transferred onto the OS400 SMTP/MSF servers.

The other statuses means this:
(See details via option **12=Work with receivers** if the status indicates a problem.)

***ERROR** Indicates that the e-mail could not be sent. InterForm400 SMTP tried once, but got an error message back. Perhaps the receiving e-mail account does not exist?

***FAILED** Indicates that InterForm400 attempted to send the e-mail more than once, but after all retry attempts the e-mail still could not be sent.

HELD** An e-mail that have been registered to be sent (READY**), that have been held via option 3=Hold or generated with held. Refer to page **347** for information of how to register e-mails. A held email can be sent via option 1=Send.

***READY** E-mails that have been registered to be send later (via the APF3812/SNDMAILS command). Refer to page **347** for information of how to register e-mails.

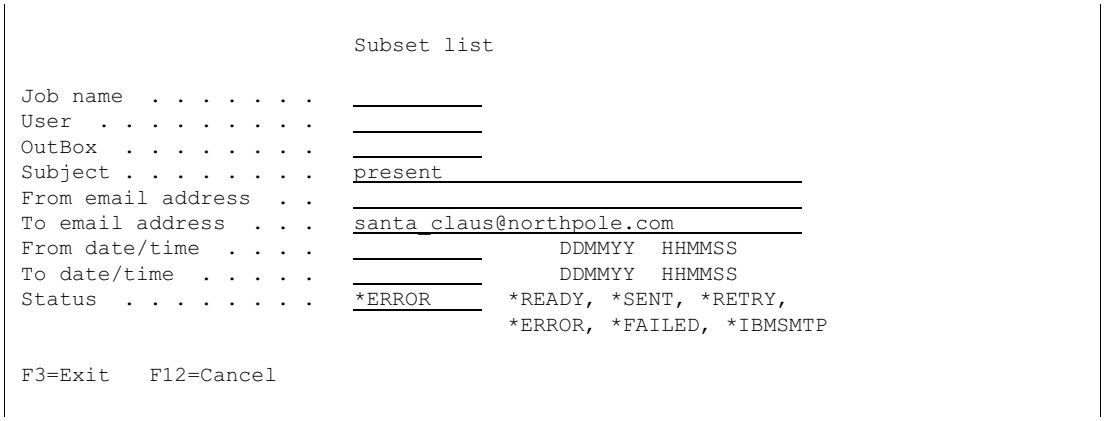
***RETRY** InterForm400 SMTP did not succeed in sending out the e-mail in the first attempts but it is still trying...

***SENT** The e-mail have been successfully sent via InterForm400 SMTP.

***RSEF** This is a combined status of e-mails that are sent to multiple receivers. The status includes some of the letters R,S,E and F depending on the status of the e-mails sent to each receiver:

R is included if ***RETRY** or ***READY** is the status for at least one receiver.
S is included if ***SENT** is the status for at least one receiver.
E is included if ***ERROR** is the status for at least one receiver.
F is included if ***FAILED** is the status for at least one receiver.

With **F15=Subset** you can subset the list above to include only specific emails. You can e.g. chose to only see the emails in error or emails for a specific email address:



You could e.g. use the subset above to subset the list to only include emails containing the phrase “present” in the subject for the email address “santa_claus@northpole.com”, which are in status “*ERROR”.

Regarding the status of the emails:

The email consists of 2 parts: user name and domain. The user name is to the left of the @-sign and then domain is to the right of the @-sign.

When you try to send an email, then there can be 3 error scenarios:

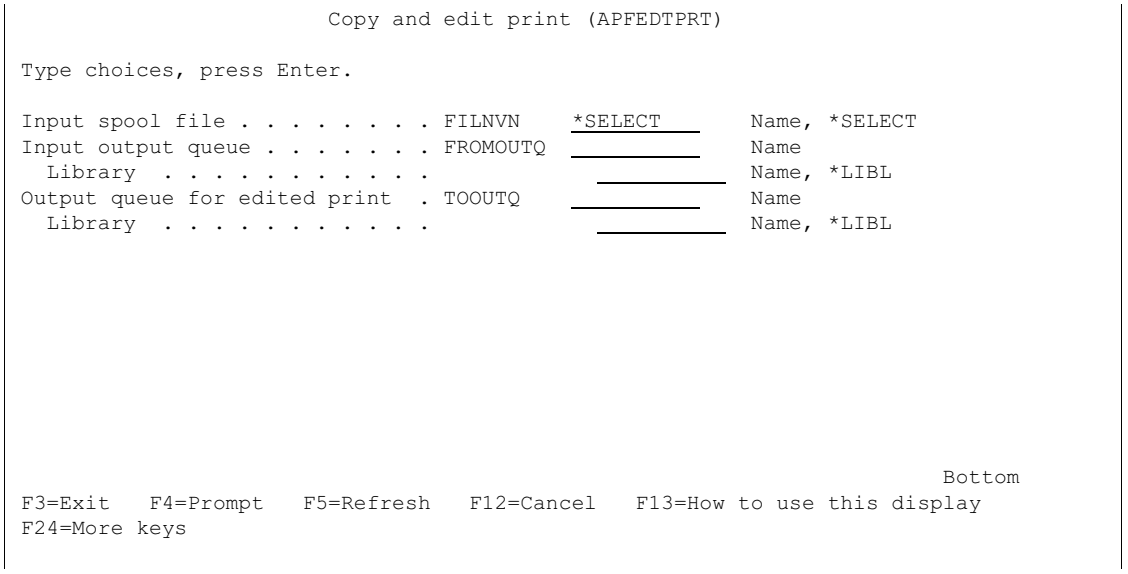
1) The domain does not exist or the receiving mail server does not answer within the specified retries.
2) The domain exists, but the user name does not exist.
3) The syntax of the email address is wrong (e.g. missing an @-sign or invalid characters are used).

Each scenario is handled like this:

1) If the domain does not exist: You will get an error in the InterForm400 mail log - status *ERROR or *FAILED.
2) If the domain exists and the user does not exist, then the status of the email will be *SENT, but the email address, which is setup as the sender will receive an email telling that the email could not be delivered. This scenario cannot be found in InterForm400 as the email goes directly to the sender.
3) If there is a syntax error in the email address e.g. a missing @-sign, then one of two things can happen:
   a) If you on the email finish definition has selected option '13. Email address syntax error handler' and here setup an email address which will receive those emails with a bad email address. The email will contain this as the subject: 'Syntax error in email address: <wrong email address>' and the rest of the email (including attachments). The special subject is possible to use as a condition e.g. in **F15=Subset** above.
   b) If you have not setup a syntax error handler as above, then you will get an error message in the AFC job when you try send the email.

The Edit Print Command

The **APF3812/APFEDTPRT** command makes it possible to edit a spool entry before merging with an overlay.



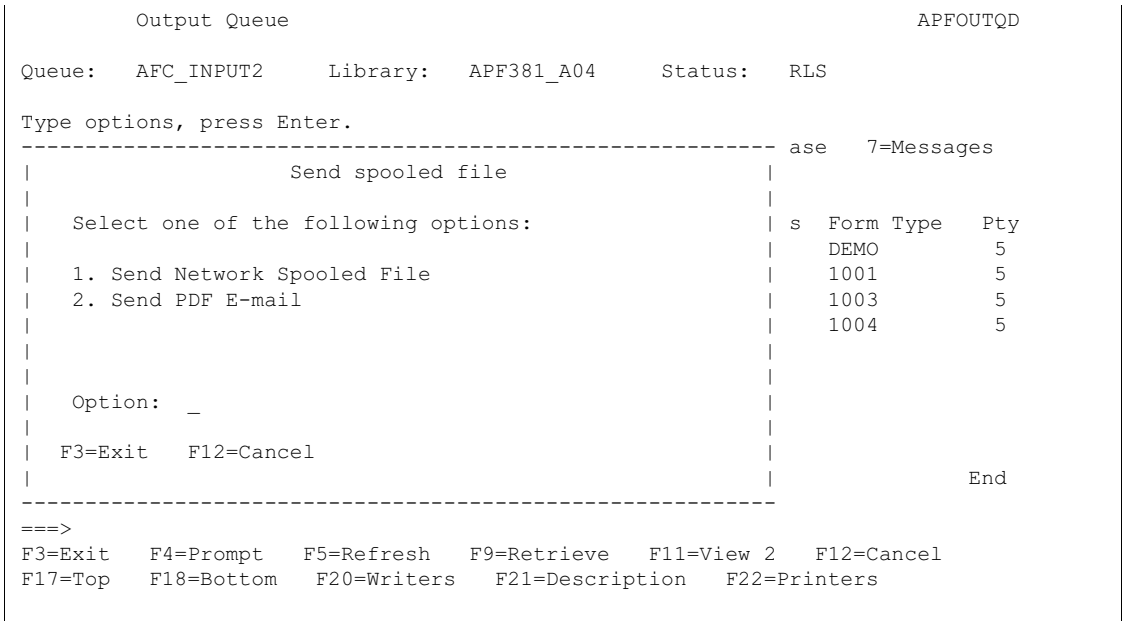
State the output from where you want to select the spooled file to be edited and on what output queue you want to create the edited spooled file. After selecting the spooled file with '1' you enter an editor (EDTF) where you can change the contents as you please. When done with the editing just press F3. The new, edited spooled file is named EDTPRT.

The APF Work Output Queue Command

The command **APF3812/APFWRKOUTQ** looks and acts like the WRKOUTQ command, except that this command opens up a Swiftview window on the PC, if a spool file containing PCL codes is displayed with option 5. If the spooled file contains ZPL codes, it is displayed as a PDF file. Two other things differs from the standard OS/400 WRKOUTQ:

- If you have used a PJL printer type in InterForm400 when you did the merge, you can actually change **PAGERANGE** on the merged PCL spooled file, if you change this attribute through option 2 on this command. In this manner you can print only a part of the merged spooled file. Note however, that the full spooled file will be downloaded to the printer even though only a part will be printed. (This requires, that the printer is PJL compatible).

- If you select option **1=Send** for a spooled file you will get this screen:



So if the spooled file is *SCS you can use option 2 to merge the spooled file with an overlay and send the merged PDF file as an attachment in an e-mail. In this manner you can send the e-mail interactively.

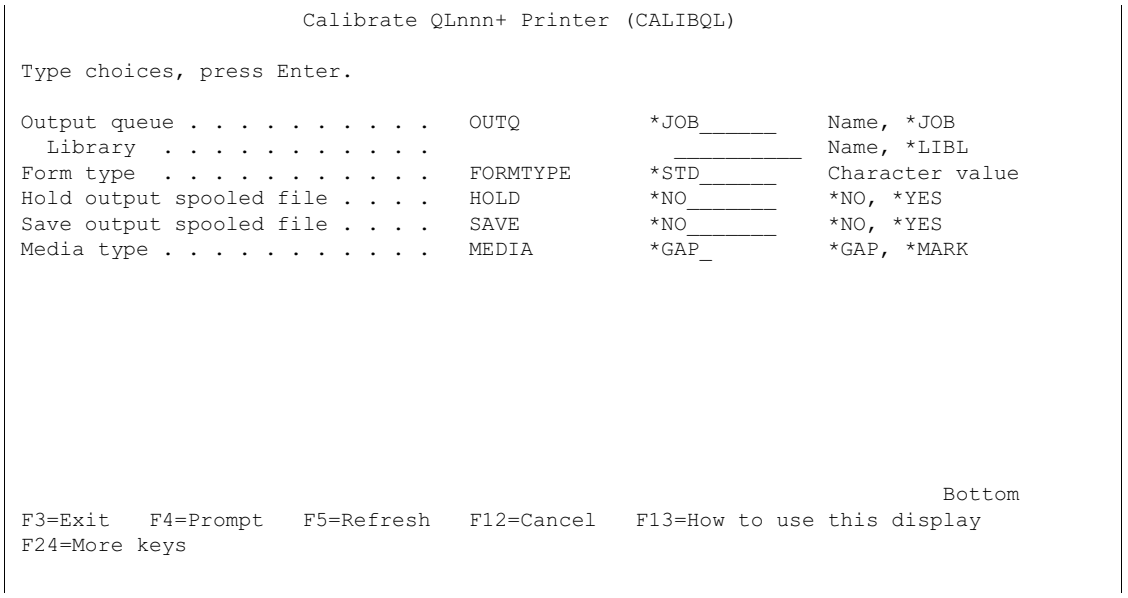
The APF Work Spooled Files Command

Simular to the APFWRKOUTQ command, the command APFWRKSPLF is an InterForm400 version of an OS400 command - in this case WRKSPLF, with additional functionality. Refer to the APFWRKOUTQ command above for a description of the extra functionality.

The Calibrate QLnnn+ Printer Command

The wireless **QLnnn+** printers (e.g. the QL420+ printer) can be used via the **QLZPL203** printer type on the InterForm400 merges. The printer however is not able to calibrate when e.g. the media is changed. To help you with that, the **APF3812/CALIBQL** (Calibrate QInnn+ Printer) command have been added.

The command will create a spooled file, that will calibrate the printer when printed. You can e.g. activate the save attribute of the spooled file so it can be released from the output queue whenever a calibration is necessary. The command looks like this:



The **media type** indicates the media used: ***GAP** means that the labels are separated by a gap, and ***MARK** indicates labels indicated by a mark on the back of the media.

The Compare Overlays Command

The compare overlays command, APF3812/CMPOVL compares two overlays and lists any differences:

```
                        Compare overlays (CMPOVL)

Type choices, press Enter.

Overlay 1  . . . . . . . . . . . OVERLAY1     > OVL1_____      Name
  File set . . . . . . . . . . .               >   KSE_____     Name
Overlay 2  . . . . . . . . . . . OVERLAY2     > OVL2_____      Name
  File set . . . . . . . . . . .               >   KSE_____     Name
Output . . . . . . . . . . . . . OUTPUT       > *PRINT         *, *PRINT
```

The output is a report, that you can display or get as a spooled file (output(*PRINT)).
After the the headers of each overlay the elements are included like this:
First a list of all elements in overlay1, that are not found in overlay2 (only the sequence number may be changed).
Then the list of all elements in overlay2, that are not found in overlay1.
If any detail of an element is changed in overlay2 compared with overlay1, then the old element will be included in the list of overlay1, and the new element is included in the list of overlay2.

The Display Black/White image Command

The command, **APF3812/DSPBWIMG** can be used for graphically viewing a black and white TIFF image using SwiftView.

If the image has been imported to InterForm400® via option 5. Work with Images in the Administration Menu, only the parameters IMAGE and RESOLUTION has to be filled out (then the TIFF image is a member in the APF3812/IMAGE file).

If the image is not placed in the APF3812/IMAGE file, this image can be viewed by stating *FILE as the IMAGE parameter and the file and member name as the FILE and MBR parameters.

```
                    Display Black/White image (DSPBWIMG)

Type choices, press Enter.

Image  . . . . . . . . . . . . . > IMAGE         *FILE_____    Name, *FILE
Resolution . . . . . . . . . . .   RESOLUTION    300           75, 100, 150, 200,
File . . . . . . . . . . . . . .   FILE          __________    Name
  Library  . . . . . . . . . . .                   *LIBL_____  Name, *LIBL,*CURLIB,
Member . . . . . . . . . . . . .   MBR           __________    Name









                                                                        Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The Display IP Address Command

If you program yourself you might want to know the ip-address of the connected 5250 session for an interactive job. You can find that out via the Display IP Address command (APF3812/DSPIPADR). The command have no parameters and displays the result like this:

```
                            Display IP address

Device name . . . . . :   QPADEV000F
Device IP address . . . :   222.2.1.100









F3=Exit    F12=Cancel
```

The Display Unicode Spooled File Command

This command (**APF3812/DSPUNISPLF**) can be used for displaying special *SCS unicode spooled files as defined in **Appendix D** on page 482. Only the characters represented in the code page of the running 5250 session are displayed. Unsupported characters are shown as a large square as below:

The parameters for the command are the same as for the DSPSPLF command. Note, that the command have also been built into option 5=Display of the APF3812/APFWRKOUTQ command.

Encrypt InterForm400 PDF File

With this command (APF3812/ENCIFPDF) you can take an existing InterForm400 PDF file and copy it to another encrypted PDF file. You can add an owner password, which will enable any function and a user password, that will open the PDF file with the restrictions stated under 'User Access Limitations'.

It is possible to encrypt some PDF files, that have not been created by InterForm400, but it cannot be guaranteed, that all pdf files can be encrypted in this manner.

NOTE

Password protection/encryption and/or digital signature of the PDF file requires a purchase of the Digital Signature/PDF security module for InterForm400.

```
                    Encrypt InterForm PDF File (ENCIFPDF)

Type choices, press Enter.

Input PDF File . . . . . FROMPDF      _____________________________________
_____________________
Output PDF File  . . . . . TOPDF      _____________________________________
_____________________
Replace stream file  . . . . . REPLACE      *NO_        *NO, *YES
Owner Password . . . . . OWNERPWD     _____________________________________
______
User Password  . . . . . USERPWD      _____________________________________
______
User Access Limitations  . . . . LIMITS       *NONE_____  *NONE,*NOPRINT,*NOCOPY,
                          + for more values   __________  *NOEDIT
                                              __________




                                                                       Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Note, that the input PDF file cannot be the same as the output PDF file.

The HP Macro Command

The command **APF3812/HPMACRO** is intended to be included in your CL-programs or activated from the command line. This command can only be used in relation to HP printers and compatibles.

The command gives you the possibility of down loading an overlay in the printer, where it is stored as a macro, which can either be printed automatically on every succeeding page or activated on macro calls in your print data.

This command is very useful if you want to create an overlay that should be activated on all pages printed from the printer, and when printing word processing documents containing advanced features such as Justification, super/sub script, fonts etc.

The macro can then be activated from a word processing document (e.g. Office DisplayWrite 400) by inserting a command in the header or the footer text in the document (e.g. on some interfaces you could enter the text **/1B&f999y3X** in a header text to add the overlay defined as MACRO-ID **999** to the printout).

You can also have the macro called as a sub-overlay from an overlay definition. This is done by the **?=if...then** command (see page 93). The overlay name entered in the If...then sentence should be **MACROXXXXX** where the XXXXX denotes the HP Macro ID entered into the HPMACRO command.

```
                  Download overlay as a HP-macro (HPMACRO)

Type choices, press Enter.

InterForm 400 file set . . . . . KARTSET     ______  Character value
Overlay name . . . . . KLICHE     ______  Character value
Printer type . . . . . PRTTYP     ______  IBM4019, IBM4029, IBM4039...
Interface  . . . . . INTERF     ______  SYSTEM, SYSTEM850, ASCIIR8...
Macro-id (0 32767) . . . . . MACROID    ______  0-32767
Automatic on every page  . . . . AUTOMATIC  ______  *NO *YES
Place into Flash Memory  . . . . FLASHMEM   ______  *NO *HP4 *IBM4039
Output queue . . . . . OUTQ       ______  Name, *JOB
  Library  . . . . . .            _______  Name, *LIBL
Form type  . . . . . FORMTYPE   ______  Character value




                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

KARTSET: Defines the name of the file-set, in which you have defined the overlay you wish to download as an HP macro.

KLICHE: Is the name of the overlay you wish to download.

PRTTYP: States the printer type you wish to use. If you are using another printer type than the ones listed in PRTTYP you should select HP4. Refer to page 478 for further information on the printer types.

INTERF: This parameter is no longer used.

MACROID: An HP macro must be given an ID in the interval 0-32767. The printer can store a number of different macros. If a macro is down loaded with the same macro ID as one already resident in the printer, the new macro definition will override the old one. If you choose to work with several macros in the printer simultaneously you should number the macros unambiguously.

AUTOMATIC: This parameter defines if the macro should be executed on all pages (*YES) or only when called from a macro definition incorporated in the print data (*NO).

FLASHMEM: This parameter indicates if the macro should be stored in e.g. the optional Flash SIMM module on a printer. Valid values are:

*No = Only downloaded to the memory of the printer.
*HP4 = Store in HP Flash SIMM.

OUTQ: Here the output queue for the final printout is stated. The macro will be transformed into a spool-entry with the filename MACROnnnnn, where nnnnn is the macro ID. The description of the spool entry will be the name of the overlay.

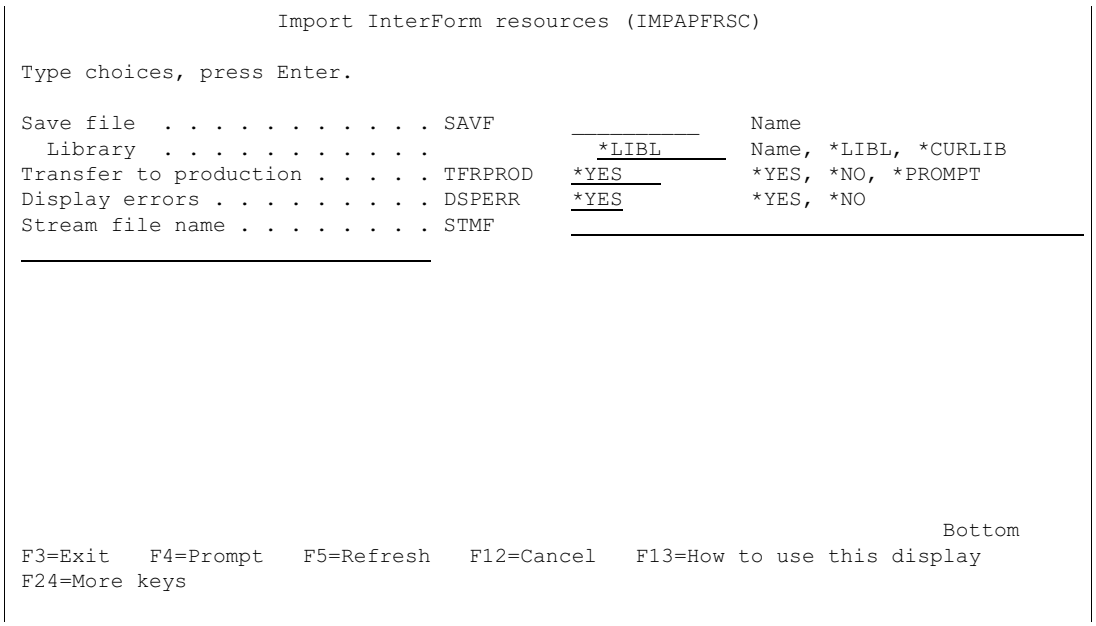
FORMTYPE: This is the forms type you want the macro to have when placed as a spool-entry on the output queue defined by OUTQ.

The output will be placed in the output queue with status **HOLD(*YES)** and **SAVE(*YES)**.

When you wish to download the macro you only have to release the spool entry.

The Import InterForm400 Resources Command

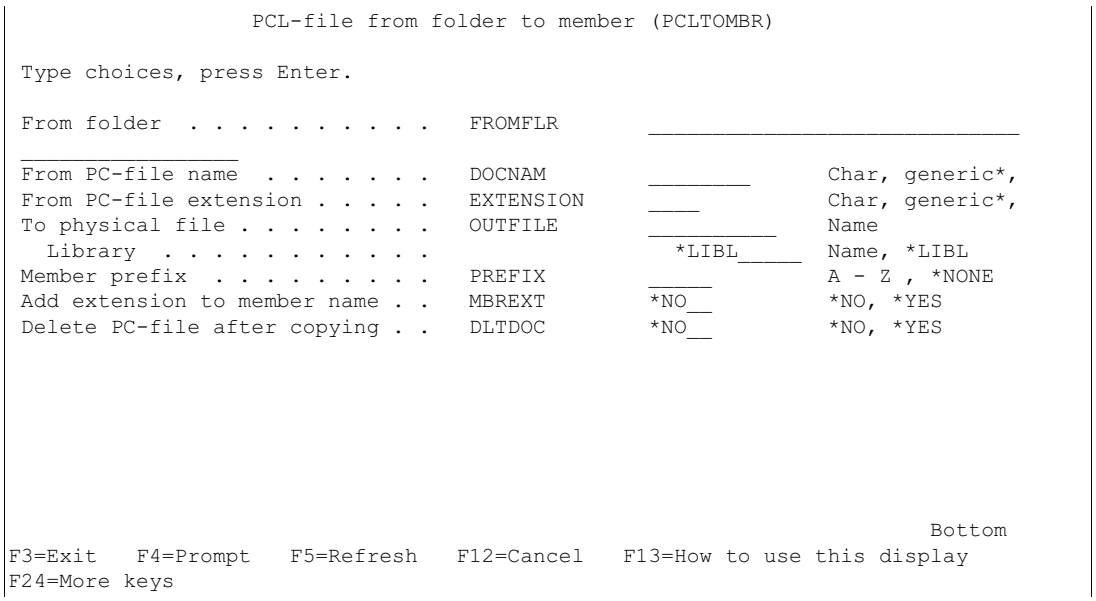
With this command you can import InterForm400 resources directly into production (into the APF3812 library) without a lot of menu selections:



Refer to page **634** for more information of this command.

The PCL-file from folder to Member Command

The **APF3812/PCLTOMBR** command can be used for inserting one or several PCL files (from a folder) into a physical file as members. The PCL files can be specified as generic or *ALL.



A member prefix can be specified (A-Z or *NONE). If the prefix is a letter, the member name of the PCL files will then be the name of the PC file preceded by this character.

Note, that in order to be able to use the PCL files when designing overlays, the PC files have to be placed as members in the APF3812/PCL file (for Black and white) or the APF3812/PCLCOL file (for colour files).

PCL files not placed in PCL and PCLCOL can only be used by inserting &&-commands in the

spool file.

TIF files can be inserted with a simular command, as seen at page 542.

The Print PCL-member Command

This command can be used in conjunction with PCL files, that are already installed in InterForm400. With this command you can print such an installed black/white PCL file:

```
                        Print PCL-member (PRTPCLMBR)

Type choices, press Enter.

Member . . . . . . . . . . . MEMBER       __________    Name
Rotation . . . . . . . . . . ROTATION     0__           0, 90, 180, 270
Top offset . . . . . . . . . TOPOFFSET    0_____        -1200-1200
Left offset  . . . . . . . . LEFTOFFSET   0_____        -1200-1200
Output queue . . . . . . . . OUTQ         *JOB______    Name, *JOB
  Library  . . . . . . . . .                __________  Name, *LIBL
Form type  . . . . . . . . . FORMTYPE     *STD______    Character value, *STD
Paper Size . . . . . . . . . SIZE         *A4_______    *LETTER,*LEGAL,*LEDGGER
Copies . . . . . . . . . . . COPIES       1__           1-255
Output spooled file name . . SPLFNAME     *MEMBER___    Name, *MEMBER
Drawer . . . . . . . . . . . DRAWER       *PRINTER__    1-255, *PRINTER
User data  . . . . . . . . . USRDTA       *MEMBER___    Character value, *MEMBER
Hold output spooled file . . HOLD         *NO_          *NO, *YES
Save output spooled file . . SAVE         *NO_          *NO, *YES


                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

(After installation and preparation the installed B/W PCL files are saved as members in the PCL file in InterForm400). The unit used for displacement is dots measured in 300 dots per inch. A negative value for an offset will move the PCL file up/left compared to the original. Remember, that any top margin is removed from the PCL as a part of the install in InterForm400.

The Print PDF file Command

The command PRTPDF enables you with the possibility to print a pdf file directly on the System i.

```
                           Print PDF file (PRTPDF)

Type choices, press Enter.

From IFS path name . . . . . . . PATH     > '/apf3812home/view/kse.pdf'
_____________________________
Output format  . . . . . . . . . OUTFMT   > *SCS         *PCL,*PCLCOLOR,*PCLGREY..

Output queue . . . . . . . . . . OUTQ     > *JOB         Name, *JOB
  Library  . . . . . . . . . .                _________   Name, *LIBL
Form type  . . . . . . . . . . . FORMTYPE   *STD         Character value, *STD
Output spooled file name . . . . SPLFNAME   PDFPRINT     Name
User data  . . . . . . . . . . . USRDTA     PDFPRT       Character value,*INPUT..
Hold output spooled file . . . . HOLD       *NO          *NO, *YES
Save output spooled file . . . . SAVE       *NO          *NO, *YES
Paper Size . . . . . . . . . . . SIZE       *A4          *INPUT, *LETTER, *LEGAL..
Copies . . . . . . . . . . . . . COPIES     1            1-255
Drawer . . . . . . . . . . . . . DRAWER     *PRINTER     1-256, *PRINTER
To stream file . . . . . . . . . TOSTMF     ____________________________________
_____________________________
Replace stream file  . . . . . . REPLACE    *NO          *NO, *YES
                                                                      More...
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
```

```
F24=More keys
```

```
                              Print PDF file (PRTPDF)

Type choices, press Enter.

Right Adjust Version . . . . . ADJUSTVER  *NONE
Code page  . . . . . . . . . . . CODPAG     037
Windows PC . . . . . . . . . . . WINPC      *SELECT
_____________________________
Windows printer  . . . . . . . . WINPRT     *SELECT
_____________________________

                                                                       Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The special fields of the command are explained below:

OUTFMT The output format (**OUTFMT**) defines the format of the spooled file generated.

- ***PCL** Print the PDF file in black/white PCL5.
- ***PCLCOLOR** Print the PDF file in color PCL (PCL5c).
- ***PCLGREY** Print the PDF file in grey PCL5.
- ***PDF** Prints the PDF file as a PDF spooled file. Note, that PDF spooled files can only be printed on printers, that supports the PDF printer data stream.
- ***TXT** Converts the PDF file into a text file (stream file) as specified in **TOSTMF**.
- ***SCS** Prints the PDF file as an *SCS spooled file. Notice the **ADJUSTVER** field to adjust the process.
- ***WINPRINT** Prints the PDF file through WinPrint as specified on the **WINPC** and **WINPRT** fields. Notice, that the value ***SELECT** for the WINPC and WINPRT fields should only be used for interactive jobs!

Notice that it is not guaranteed that all PDF files can be printed via this command. Encrypted pdf files (that are not protected with a password) can be printed.

The Print TIFF File Command

Use the command, APF3812/PRTTIFF to print TIFF file placed in the IFS. The TIFF file must be black/white and in a format supported by InterForm400. Refer to page 407 for a list of the supported TIFF formats.

```
                          Print TIFF file (PRTTIFF)

Type choices, press Enter.

From IFS path name . . . PATH          _____________________________________________
____________________
Output queue . . . . . . OUTQ          *JOB______     Name, *JOB
  Library  . . . . . . .                 __________   Name, *LIBL
Form type  . . . . . . . FORMTYPE      *STD______     Character value, *STD
Paper Size . . . . . . . SIZE          *A4_______     *LETTER, *LEGAL, *LEDGGER...
Copies . . . . . . . . . COPIES        1____          1-255
Drawer . . . . . . . . . DRAWER        *PRINTER       1-256, *PRINTER
Rotation . . . . . . . . ROTATION      *AUTO          *AUTO, 0, 90, 180, 270
Resolution . . . . . . . RESOLUTION    *AUTO          *AUTO, 75, 100, 150, 200...
Shrink to fit print.area SHRINK        *NO ____       *NO *WIDTH *HEIGHT *BOTH









                                                                          Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The Print X-Ref List Command

The command APF3812/PRTXREF prints a list of all InterForm400 resources and lists any reference to each resource including the autodownload specifications. Refer to page 435 for more information of this list. The command has no parameters - it prints to the default output queue of the job.

The Retrieve Data Queue Information Command

The command, APF3812/RTVDTAQI (Retrieve Data Queue Information) can be used for retrieving the sequence of a data queue. Data queues are used in Auto Forms Control, so the setup effects the sequence in which the incoming spooled files are handled. The sequence should normally be SEQ(*FIFO) - First In First Out.

The Start Screen Attention Command

The command APF3812/STRSCNATN provides you the possibility to call predefined functions when pressing the <Escape> key on the current call level. The functions are to be defined via the command Work with Screen Definitions (APF3812/WRKSCNDFN) - refer to page 544 for information of this command.

The APF3812/STRSCNATN command can e.g. be included in the initial program of the relevant users. (Remember to use MONMSG so the users can sign on even during an upgrade of InterForm400...).

The command looks like this:

```
                    Start Screen Attention (STRSCNATN)

Type choices, press Enter.

Command . . . . . . . . . . . . CMD           > GO MENU(MAIN)



Default program . . . . . . . DFTPGM    > *ASSIST     Name,*USRPRF,*ASSIST,*NONE
  Library . . . . . . . . .                           Name, *LIBL, *CURLIB










                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Above the command 'GO MAIN' is issued after the function has been activated. If the user press <Escape> on a screeen that is not looked for in the definitions defined in WRKSCNDFN, then the default program is called - above the ASSIST menu is run.

Refer to page 638 in Appendix Q for an example of how this can be used.

The TIF-file from folder to member Command

The APF3812/TIFTOMBR command can be used for inserting one or several TIF files (from a folder) as members in a physical file. The TIF files can be specified as generic or *ALL.

```
                  TIF-file from folder to member (TIFTOMBR)

Type choices, press Enter.

From folder . . . . . . . . . .   FROMFLR        _____________________________
_________________
From PC-file name . . . . . . .   DOCNAM         ________      Char, generic*,
From PC-file extension . . . . .  EXTENSION      ____          Char, generic*,
To physical file . . . . . . . .  OUTFILE        __________    Name
  Library . . . . . . . . . . .                    *LIBL_____  Name, *LIBL
Member prefix . . . . . . . . .   PREFIX         _____         A - Z , *NONE
Add extension to member name . .  MBREXT         *NO__         *NO, *YES
Delete PC-file after copying . .  DLTDOC         *NO__         *NO, *YES








                                                                      Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

A member prefix can be specified (A-Z or *NONE). If the prefix is a letter, then the member name of the TIF files will be the name of the PC file preceded by this character.

Note, that in order for being able to use the TIF files when designing, the PC files have to be placed as members in the APF3812/IMAGE file.

TIF files not placed in IMAGE can only be used by inserting &&-commands in the spool file.

PCL files can be inserted with a simular command, as seen on page 538.

The Transform XML file Command

The transform XML file command, TFMXMLF is able to transform (or convert) an input XML file into an output XML file with different contents:

```
                        Transform XML File (TFMXMLF)

Type choices, press Enter.

XML stream file  . . . . . . . . XMLSTMF        MyInputFile.xml
                                                ____________________
Transform stream file  . . . . . TFMSTMF        Transform.xsl
                                                ____________________
Output stream file . . . . . . . OUTSTMF        MyNewFile.xml
                                                ____________________
Replace stream file  . . . . . . REPLACE        *NO
```

The fields are these:

XMLSTMF The input XML file to be transformed.

TFMSTMF The transform stream file. This can either be an xsl (or xslt) file, which you use use to transform the input xml file into a different format. Alternatively you can also here refer to an xent file with which you can include both an SQL expression to include additional data from a Database (via SQL) or add new nodes with xpath expressions. The xent format is described in the InterFormNG manual, which you can download via this link:
http://download.interform400.com/shares/public/Manual_InterFormNG_2015.zip

OUTSTMF The output XML file resulting from the transform.

REPLACE If *YES the output XML file will be replaced if it already exists. If *NO and the file already does exist, then the job will halt with an error.

The Work with Profile Jobs Command

The APF3812/WRKPRFJOB command can be used to list all active jobs for a specific user profile. This command will also display all server jobs serving this user profile.
Server jobs are used for the Graphical Designer and this command can be used for ending all jobs for a user profile is necessary. This is the list shown (if e.g. you have the graphical designer running for this user profile):

```
         Work with Job                                              WRKPRFJO

Position to . . . . . .   __________  Job name

Type options, press Enter.
  5=Work with

Opt  Job name      User        Job number
 _   QGYSERVER     QUSER         029983
 _   QNPSERVS      QUSER         029837
 _   QNPSERVS      QUSER         029972
 _   QPADEV000B    KSE           029982
 _   QRWTSRVR      QUSER         029849
 _   QZHQSSRV      QUSER         029843
 _   QZRCSRVS      QUSER         029956




                                                                      End
F3=Exit   F5=Refresh   F12=Cancel
```

Use option ‘5' to work with a job and then option 41 to end the job if wanted. If you want to

release a lock of overlay in InterForm400 you can also do that in InterForm400 by selecting option ‘80. Administering InterForm 400' followed by ‘50. Work with Designer job overlay locks’ and ending the job locking the relevant overlay.

Work with Screen Definitions

The command APF3812/WRKSCNDFN (Work with Screen Definitions) can be used for defining actions on various screens when the <Escape > (or Attention) key is pressed. The command has no parameters and when run you will see this:

```
         Work with screen definitions                                SCR100D

Position to . . . . . .   __________   Screen definition
  Required library  . .   __________

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt  Screen      Req.lib     Description
 _   COPY_SPLF   *NONE       Copy spooled file via SNDTCPSPLF from APFWRKOUTQ
 _   WRKACTJOB   *NONE       Joblog as PDF in E-mail from WRKACTJOB
 _   APFMENU     APF3812     Enter InterForm400 from Main if APF3812 is in LIBL

                                                                        End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

Above we have defined actions for 3 different screens. A screen definition looks like this: (Use <Page Down> to view the second screen)

```
         Change screen definition                                    SCR110D

Screen definition  . . . :   APFMENU    Name
  Required library . . . :     APF3812  Name, *NONE

Description  . . . . . .   Enter InterForm400 from Main if APF3812 is in LIBL


Type comparisons, press Enter. Specify OR to start each new group.
Leave line and/or position blank to select cursor line/position.

AND/OR  Line  Pos.  Opr.  Compare value
        __1   __33  EQ    OS/400 Main Menu_____________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
                                                                       More...
F3=Exit   F12=Cancel
```

(Here we only want to call this function IF we are on the OS/400 Main Menu screen AND the APF3812 library is in the library list of the job). If the ‘Required library’ field is *NONE then no special library is required (in the library list).

What to do is defined on the next screen:

```
         Change screen definition                                SCR110D

Screen definition  . . . :   APFMENU
  Required library . . . :     APF3812

Command  . . . . . . . . .   APF3812/APFMENU KARTSET(&A)
_____________________________________________________________________
_____________________________________________________________________

Leave line and/or position blank to select cursor line/position.

        Line  Pos.  Len   Description
 &A      20    7    10    File set
 &B      ___   ___  ___   _____________________________________________
 &C      ___   ___  ___   _____________________________________________
 &D      ___   ___  ___   _____________________________________________
 &E      ___   ___  ___   _____________________________________________
 &F      ___   ___  ___   _____________________________________________
 &G      ___   ___  ___   _____________________________________________
 &H      ___   ___  ___   _____________________________________________
 &I      ___   ___  ___   _____________________________________________
                                                                  End
F3=Exit    F4=Prompt    F12=Cancel
```

Here the first 10 characters from the command line is taken as used as identification of the file set that you want to work with. You can use the variables &A to &I on the command in the top.

To invoke the commands in a specific job you need to run the APF3812/STRSCNATN command, which will activate the function in the current call level. You can find information of the STRSCNATN (Start Screen Attention) on page 541.

For a few examples of how to implement and use the APF3812/WRKSCNDFN and APF3812/STRSCNATN commands please refer to page 638 in **Appendix Q**.

Work with Stream File Locks

With this command (APF3812/WRKSTMFLCK) you can list which jobs, that has a lock on a certain file in the IFS. You state the path as the only parameter. Here you can see any job, that locks the object:

```
         Work with Stream File Locks                             WRKSTMFL

Position to . . . . . .               Job name

Type options, press Enter.
  5=Work with job

Opt  Job name      User        Job number
 _   QZLSFILE     QUSER         074244

                                                                  End
F3=Exit    F5=Refresh    F12=Cancel
```

From this screen you can select to work with the job that has the lock e.g. in order to end it. Be

sure, that you are not causing a problem by ending the job - it might be doing something important...

The Unzip to current directory Command

This command unzips a zip file into the current directory (after it is changed). The command **APF3812/UNZIP** can be used for unzipping files in the IFS. It can e.g. be used for installations where you have a limited bandwidth connection to the iSeries. With this command you can upload/FTP a zip file onto the IFS and then unzip it before you use it.

Note: Licensed program **5722JV1 Java development kit** is required in order to run this command.

The command have 2 parameters:

ARCHIVE - path to archive	This is the path and file name of the zip file e.g.'/PCDATA/MYFILE.ZIP'.
CURDIR - current directory	The current directory is temporarily changed to this and the unzipped file(s) are placed here e.g. '/unzip'. If the command halts with an error or otherwise stopped during execution, then this will be the current directory on return.

The Zip Stream File(s) Command

The APF3812/ZIP command can be used for zipping (compressing) stream files in IFS or folders (QDLS).

```
                          ZIP stream file(s) (ZIP)

Type choices, press Enter.

Archive path . . . . . . . . . . ARCHIVE        _____________________________
_________________
Create / Add to archive  . . . . CREATE         *CREATE  *CREATE, *ADD

Current directory  . . . . . . . CURDIR         _____________________________
_______________
From stream file . . . . . . . . FROMSTMF       _____________________________
_____________________________________________________________________________
_____________________________________________________________________________
_____________________________________________________________
Work dir, if FROMSTMF is /QDLS   WORKDIR        _____________________________
_________________




                                                                        Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

Archive path This is the path and name of the archive (the zipped file). This must have the extension '.zip'.

Create / Add This specifies if you want to add files to the archive. If you select *CREATE the file will be replaced if it already archived.

Current directory This directory will be added in front of the path stated in 'From stream file'. This command:

```
APF3812/ZIP ARCHIVE('/ZIPDIR/ARCH1.ZIP') +
CURDIR('/MYDIR') FROMSTMF('/STATEMENT/*')
```

This will zip all files in the directory '/MYDIR/STATEMENT' and in the archive the files will be named '/STATEMENT/file.ext'.

From stream file This is the path and name of the file(s) to be zipped. If you are zipping file(s) in the folder system (QDLS) this can only hold the file name, the path should be stated in 'current directory'. Generic names can be used e.g. '*' and 'A*.*'.

Work directory If you want to archive files placed in the folder system (QDLS), you need to state a work directory. InterForm400® will create a temporary subdirectory in the work directory called ZIP_nnnnnn, where nnnnnn is the jobnumber, which is removed before the command ends.

Appendix J - Handling InterWord400™ Spooled Files

If the system should operate with **InterWord400**, you should be aware that some specific word processing features will disappear from the spooled file during merge with an InterForm400® overlay - if you use conditions, tabulators, remap windows or other simular functions in your overlays.

The features in question are **sub-script**, **super-script**, **font changes** and **justification**. The reason is that OS/400 does not allow these attributes with the **Copy spool file** function, which is one of the basic operations of the InterForm400® system. OS/400 will report a message if such unsupported attributes are found in the spool entries when the **Copy spool file** operation is carried out.

There are, however, two ways to avoid using the Copy spool file operation and still add overlays to InterWord400 spooled files.

1. Merging with InterWord400 spooled files with limited overlay features
Merge in Auto Forms Control or 3. Merge spool entry with overlay are used as normal, but the overlay must not include any of the following elements:

Tabulators
Remap Window
If-then statements
Copy management
Extended page definition

Besides this, Finishing functions are not allowed. In addition the main overlay definitions **Line Spacing, Rotation, Font** and **Drawer** should all be set to ***INPUT**.

InterForm400® will add the overlay and make conversions of the advanced word processing features of the Office Spool file (SCS/DCA). If however just one of the above restrictions are not obeyed the spool file will be regarded as a normal SCS spool entry, and the advanced features will be ignored.

☺ **TIP** ☺
*A good idea is to make use of the overlay selector possibility for InterWord400 spooled files. You can include information in line 1 of the spooled file via the **PAGDTA** field on the **DCA400/PRTPCD** command. (This command is used for printing in InterWord400).*

2. Downloading the overlay as a macro
The overlay should be downloaded as a HP macro and the command APF3812/HPMACRO (see page 536) should be used to create the spool entries containing the HP macro. The macro can then be called directly from the document by inserting a call command in the header or footer text.

Note that this method neither uses **Auto Forms Control** nor the interactive merge with option **3. Merge spool entry with overlay**.

Limitations for InterWord400 spooled files

InterWord400 spooled files are quite special so they need to be handled in a special way in InterForm400. This means that not all functions in InterForm400 are supported for InterWord400 spooled files.

The special functions supported for InterWord400 spooled files are:

- Use of soft fonts
- Creation of both PCL and PDF output - if you use MRGSPLFPDF to create the PDF files.
- Output Schedule Control
- Overlay selectors: Please note that only information in line 1 of the spooled files (generated via the PAGDTA field on the DCA400/PRTPCD command) are placed in fixed positions so they can used for conditions in e.g. overlay selectors

Special functions that are unsupported for InterWord400 spooled files are:

- Split definitions
- Sort definitions
- Finishing definitions

Please ask you local InterForm400 contact if you want to use an InterForm400 function for InterWord400 spooled files that are not listed above.

Appendix K - Forms Server for non-System i environments

InterForm400® can act as a Forms Server for other environments, such as WindowsNT, UNIX, Novell etc.
For instance it is possible with iSeries Access to create a printer in Windows, which directs print jobs either as PCL (datatype *ASCII) or print jobs which has been converted to SCS (datatype *SCS) to an System i attached printer. The latter function was originally designed for printing PC print jobs on twinax printers, but can be used as input for InterForm400® to print electronic forms.

Adding Overlays to *SCS PC Print Jobs (PC Mail Merge)

This function is a popular way of doing large mailings with advanced graphics. For example the normal situation when merging database records with a graphical MS-Word document is, that each page in the resulting output will have all graphics included. This takes long time to process on both the PC and the printer, it requires lots of hard disk space and not least, it generates a lot of network traffic.
With InterForm400®, you can load the form document as an overlay and send the data records as a simple SCS print job to a queue monitored by InterForm400®. This is an extremely effective way of making large mailings.

The following is a short description of the procedure for setting up the environment in Windows with iSeries Access:

1. In Windows Click Start, Printer and Click the “Add Printer” icon. The same printer should be used as input to InterForm400®. Tag “Network Printer” and click Continue, Locate your System i under the “iSeries Access network” and chose a printer on the System i.

   Note: If no printers are displayed (if all printers are defined as remote writers), or if you do not have a printer available on the System i to use as input queue to Auto Forms Control, you must create a “dummy” writer. This automatically creates an output queue, which you can use as input queue to AutoFormsControl:

   ```
   CRTDEVPRT DEVD(LAN_FSP) DEVCLS(*VRT) TYPE(3812)        MODEL(1)
   FONT(11) ONLINE(*NO)
   ```

   The printer installation wizard will now ask you to select a driver for the printer. Select an older twinax printer type like an IBM 5256 or IBM 4214. Now finalise the add printer wizard.

2. Create a simple forms document in e.g. MS-Word to merge the data into. This forms document should be without any formatting. It should contain nothing but the fields where the data from the data source are inserted. Now merge the data source with this forms document, and send the merged document to the printer created in step 1. The spool file would look like this on the System i:

```
                           DISPLAY SPOOL FILE
File  . . . . . :   QPRINT                          Page/Line 1/800
Function  . . . .                                   Columns    1 - 78
Search for  . . .
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
       Florence Flowers
       Tulip Road 16
       4000 Marigold
       DK-Denmark
       ---------------------
       Att: Susan Sunflower
       Forrest Friends Inc.
       Oak Street 88
       4000 Marigold
       DK-Denmark
       ---------------------
       Att: Archie Acorn
       Herring Marine Research
       Seaweed Street 14
       9000 Battleaxe
       DK-Denmark
       ---------------------
       Att: Martin Merman
F3=Exit     F12=Cancel     F19=Left     F20=Right     F24=More keys
```

3. Create the forms document in e.g. MS-Word , which you want to use as mail letter, but do not include any codes for position of merge records (address field). Now create an InterForm400® overlay including this document. Refer to section **Importing PCL Overlay from PC Print File page** **413**, on how to import the document as an overlay in InterForm400®.

4. Locate the spool file from step 2 on the System i, and use it to insert remap lines in the overlay created in step 3.

5. You can now either make a manual merge of the overlay with the forms document and the spool file, or you can activate Auto Forms Control on the queue for which you created the printer in step 1.

Adding overlays to *ASCII PC printjobs (PCL)

InterForm400® only requires the spool entry to be of data type *ASCII, and the input data to be PCL4, PCL5 or PCL5e (Including PCL color commands). InterForm400® will add an overlay to the print job while maintaining the formatting of the document. Therefore the following overlay command lines will be ignored:

Tabulators
Remap Window
If-then statements
Copy management
Extended page definition

InterForm400® will also ignore all global settings of the overlay (used for pre-formatting variable spool data) except for the ROTATION. When defining *INPUT for ROTATION InterForm400® will detect the PCL orientation command in the spool file, and print the overlay with the same orientation.

Merging of overlays and data can be done by either the APF3812 CL command, interactively with 3. Merge spool entry with overlay, or by Auto Forms Control.

The overlay selected for merge in InterForm400® will be applied to all pages in the PCL (*ASCII) spool entry. Should you require another overlay to be applied to specific pages in the PCL spool entry, you can insert the text string "**##overlayname**" in the document. InterForm400® will pick this overlay instead of the one defined in the merge definition, but will

pick it from the same file set. Note that the string “##overlayname” must be written in the document with a font that is resident in the printer (e.g. Courier).

In order to avoid the overlay to be added to certain pages in the overlay, you must create an empty overlay (eg. with the name “blank”), and insert the text “##blank” on all pages which should be printed without overlay. Alternatively, you can define the merge on the System i to use the overlay “blank”, which means all pages in the spoll entry which do not specifically have an overlay call (##overlayname) will be printed without overlay.

Defining a Virtual printer in iSeries Access:
In Windows Click Start, Printer and Click the “Add Printer” icon. The same printer should be used as input to InterForm400®. Tag “Network Printer” and click Continue, Locate your System i under the “iSeries Access network” and chose a printer on the System i.

Note: If no printers are displayed (if all printers are defined as remote writers), or if you do not have a printer available on the System i to use as input queue to Auto Forms Control you must create a “dummy” writer. This automatically creates an output queue, which you can use as input queue to Auto Forms Control:

CRTDEVPRT DEVD(DUMMY) DEVCLS(*VRT) TYPE(3812) MODEL(1) FONT(11) ONLINE(*NO)

The printer installation wizard will now ask you to select a driver for the printer. Select a PCL driver that corresponds to the PCL emulation supported by the laser printer connected to the System i.

WARNING

*Note that the each page in the *ASCII spool entry must not exceed 80kb. If you receive an error because of this, you should try to remove elements, especially graphics, in order to stay within this limit.*

TIP

You can convert a ASCII file in IFS into a SCS spool file by using the command APF3812/PRTASCF. See page 520.

Appendix L - PDF and PCL Viewing

The PCL Viewer SwiftView included with InterForm400® will display PCL spool files with data type *USERASCII containing PCL5 and PCL5e data. This is a true WYSIWYG feature, which is unique for verifying results of forms design, and to view the contents of spool files in the System i output queues, that has been merged with InterForm400® overlays.

NOTE

For easy design of your overlays you can also install a graphical designer on your PC. Refer to page **584** for more details.

NOTE

In order to get PDF output you need to purchase the PDF module for InterForm400.

PDF viewing:

If you have Acrobat Reader (or another PDF file viewer) installed on your PC you can also choose to use this program to view the PDF result of a merge. This requires:

1. That this program (e.g. Acrobat Reader) is associated with the extension **.PDF** on the PC. (Try to double click on a PDF file on your PC. It should open up the PDF file viewer and display the file).

2. That the PC can 'reach' the /apf3812Home/view directory on the System i - follow the steps as indicated for PCL viewing.

3. That the Netserver is running and the name is registered as described for PCL viewing below.

4. IMPORTANT: The PDF viewing option is limited for users, that has a user profile with **max. 8 characters**.

Refer to page **66** for how to activate the PDF view.

PCL viewing:

SwitftView exploits the iSeries Access connection to a Windows PC, and is currently integrated with the menus **1. Design Overlay**, and **10. Work with actual output queue**.

The command for **10. Work with actual output queue is**:

```
APF3812/APFWRKOUTQ
```

If you use option 5 to display a merged PCL spooled file on this APFWRKOUTQ command the spooled file will be shown in Swiftview.

SwiftView licenses:

WARNING

When InterForm400® is running in test mode you can setup an unlimited number of users to use SwiftView. 1 SwiftView license is included with InterForm400® free of charge. Additional licenses can be ordered from your local InterForm400® dealer. The minimum licenses to order is 5. You will receive the license in form of a code, which matches the serial number of your System i. Refer to page 459 for more information on ordering and entering license code.

Requirements for running SwiftView:

1. You must connect to the System i via TCP/IP from a Windows PC with iSeries Access or

other 5250 emulator supporting both STRPCO and the STRPCCMD commands.

2. The user must have full authorisation over the directory: `\\system\APF3812Home\VIEW`. You can grant these rights with the command:

```
CHGAUT OBJ('/apf3812home/view') USER(*PUBLIC) DTAAUT(*RWX)
OBJAUT(*ALL)
```

3. The system name defined in the InterForm400® administration menu **2. Configure InterForm 400** (see page 37), must correspond to the system name shown with the command APF3812/DSPNETSVRA or use the IP-address of the System i.

4. Port number 445 must be open in any firewall the PC may access the iSeries through.

Setting up a SwiftView user.

1. Use option 60. Install SwiftView at drive C:,located in 12. Service Functions, to create a directory on the users PC's C drive called C:\APF3812, and copy the program **SVIEW.EXE** from the directory \\system\APF3812Home\VIEW into this directory on the PC. Notice that the (C:) -Drive is configurable.

2. If InterForm400® is running in test mode, **F14** in menu **1. Design overlays** and option **5=display** in menu **10. Work with actual output queue** will now activate PCL viewing. (See page 65 for more information on using **F14**),

   If InterForm400® is running in production mode, you will only have permission to one license. If a code is installed for activating more SwiftView licenses, the user profiles activating the viewer will automatically be assigned to the group of users for access to SwiftView (The Configuration menu point **51. Swiftview users**).

   If all licenses are already occupied, every new user will be informed about this, when trying to activate the viewer. In this case, either order the needed number of SwiftView licenses, or replace an existing user profile in menu **51. SwiftView users**, with the user profile that needs access to PCL viewing.

Setting up iSeries Access Express, enabling PCL-viewing

1. Use the command:

```
APF3812/DSPNETSVRA
```

- to display the NetServer Name and Domain of the System i. The Netserver name is the name, that you could use for your System i when configuring iSeries Access Express - you can also use the IP-Address instead.

> **WARNING**
> *The NetServer Name should not be the same as the System i System name. The system name can be displayed with the command, DSPNETA. If the names are identical you could change the Netserver name with the command, APF3812/CHGNETSVRA.*

3. Start the NetServer with the command:

```
APF3812/STRNETSVR
```

4. The person that should be able to view, must have full authorisation over the directory: \\system\apf3812Home\view. You can grant these rights with the command:
`CHGAUT OBJ('/apf3812home/view') USER(*PUBLIC) DTAAUT(*RWX)`

OBJAUT(*ALL)

☝ NOTE ☝

When viewing graphically (PCL or PDF) a file will be created in the APF3812Home/VIEW directory, that others can access/view. To avoid that you can specify, that the PUBLIC authority of these temporary files should be *EXCLUDE. Refer to page 38 for more information.

5. Create a new System i connection in iSeries Access stating the new System i server name.

6. Start up a new session and change the new network name to Qxxxxxxxx
under option 2. Setup default output queue and printer type, in 80. Administration Menu.

7. If you are running iSeries Access Express, you should also make sure to start the Netserver on the System i. This can be done with the command: STRHOSTSVR SERVER(*ALL). You should also make sure to use the **System i** system name (on the PC and in InterForm400®, that you can find using the Explorer and opening the **Other Computers** folder.

8. Boot your PC and connect to the new server name Qsxxxxxxx via the Operations navigator.

9. If you are running Window95/98 is it necessary to have to same User-ID and password on the PC as on the System i.

☺ TIP ☺

*You can choose to map a Network drive to APF3812Home from Explorer on your PC: Choose **'Tools'** and **'Map Network drive..'** and **'\\<IP-Address of System>\APF3812Home'** as the directory. This is helpful later when moving resources to/from the shared /APF3812Home/Work directory.*

When configuring Netserver and share these commands could be very helpful:
(All are placed in library, APF3812)

NetServer commands:

DSPNETSVRA	Display NetServer Attributes
CHGNETSVRA	Change NetServer Attributes
STRNETSVR	Start NetServer
ENDNETSVR	End NetServer

NetServer share commands:

ADDFILSHR	Add NetServer File Share
ADDPRTSHR	Add NetServer Printer Share
RMVNETSHR	Remove NetServer Share

Troubleshooting problems using SwiftView:

If you receive an error when starting up SwiftView (using e.g. F14), you might get some help here.

When using the full iSeries Access the System i name used on the PC can be found, by choosing Start, Programs, IBM iSeries Access, Connections. Additional information for iSeries Access Express can be found below.

Problem: When pressing F14 from the design screen a DOS window opens and shuts very quickly.
Solution: Install SwiftView as described above in the first paragraph of Setting up a SwiftView user. Make sure, that the APF3812 directory is created at the C-drive of the PC AND that the file SVIEW.EXE has been copied to that directory. If the directory and file has not been copied make sure, that you are authorized to the /APF3812Home/VIEW directory (see requirement 5), and that the System i name in InterForm400® is the same as used on the PC (see requirement 5) and then try installing SwiftView again.

Problem: When starting up SwiftView, you get a small window with the message: **Unusual file access failure, check NDGDBUG \\systemi\APF3812Home\VIEW\user.**
Solution: Make sure, that the AS400 system name set up in InterForm400® is the same as used on the PC (see requirement 5 above). If the System i is not found on the same network and not on the DNS server, you might need to add the System i to the HOSTS file on the PC like described below.

Problem: When starting up SwiftView, you get a small window with the message:
Access to the file is not permitted \\systemi\APF3812Home\VIEW\user.
Solution: You are not authorized to the APF3812Home/VIEW directory. Do as described in requirement 3 as above. You will also get this error message if your User ID and password on the PC does not fit with the User ID and password of the System i.

Problem: When trying to access APF3812Home through a mapped network drive on the PC and you get this error message:
'An error occoured while connecting <Drive>: to \\<ServerName>\APF3812Home.
Microsoft Windows Network: The local device name is already in use.
This connection cannot be restored.'
Solution: Use the same User ID and password on both the PC and System i or map a network drive to /APF3812Home using the System i user ID and password (possible in Windows XP).

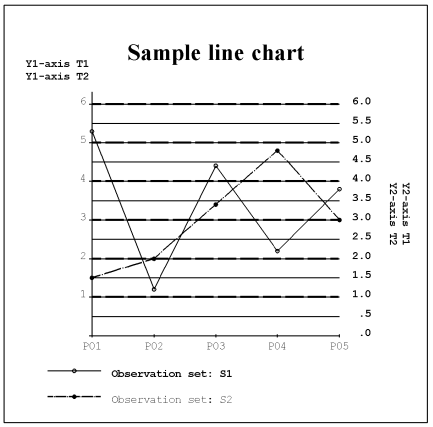
Problem: The PC cannot 'see' the System i NetServer Name through a search of the Network Neighbourhood and can because of that not access /APF3812Home.
Solution: Make sure, that the NetServer is started on the System i and you are using the NetServer name - not the System Name of the System i (APF3812/DSPNETSVRA). If the System i is placed in another Network it might be necessary to add the System i NetServer name to the HOSTS file on the PC. You can also just use the IP address as the Netserver name in InterForm400 configuration.

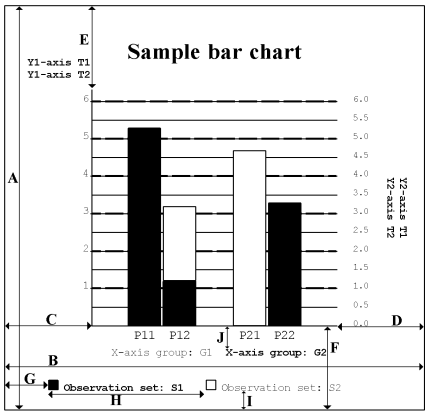
Appendix M - InterForm400 charts

InterForm400 supports the following two types of charts:

- Bar charts and
- Line charts

Samples are seen below:





A Chart height
B Chart width
C Chart margin, left
D Chart margin, right
E Chart margin, top
F Chart margin, bottom
G Legend margin
H Legend width
I Legend spacing
J Displacement of group texts

You can define both types of charts by using the *Work with Charts* (WRKCHT) command.

By using the WRKCHT command you can define the complete layout of your charts including data to be presented in the charts.

To print a chart enter the &&CHT command inside your spooled file.

The &&CHT command also enables you to do the following while printing:

- Change the layout of your chart
- Change the data to be presented in the charts
- Create a chart without using the WRKCHT command.

The Work with Charts command, WRKCHT

When using the Work with Charts command, **APF3812/WRKCHT**, the following display is shown:

```
          Work with Chart definitions                                CHA100D

 Position to . . . . . .              _____________ Chart

 Type options, press Enter.
   2=Change   3=Copy   4=Delete   5=Display   6=Print chart

 Opt   Chart       Description
  _    DEMOSALES   Demo of Bar chart
  _    SAMPLEBAR   Sample bar chart
  _    SAMPLELINE  Sample line chart









                                                                       End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

Pressing F11 will result in an alternative display as seen below, where the size of the charts is displayed. Status is *PARTIAL if the setup of the chart is not complete.

Pressing F11 again will alternate between the two displays.

```
          Work with Chart definitions                                CHA100D

 Position to . . . . . .               Chart

 Type options, press Enter.
   2=Change   3=Copy   4=Delete   5=Display   6=Print chart

 Opt   Chart       Type        Chart heig  Chart widt  Status
  _    DEMOSALES   *BAR             4,000       4,000
  _    SAMPLEBAR   *BAR             4,000       4,000
  _    SAMPLELINE  *LINE            7,000       7,000  *PARTIAL
```

```
                                                                       End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

If a chart is complete, it is possible to printout the chart using option **6. Print chart**. The chart will be printed out on the default output queue for the current job.

Press F6 to create a new chart:

```
        Create Chart definition                                  CHA110D

Chart  . . . . . . . . . . _____
Type . . . . . . . . . . . _____   *BAR, *LINE

Description  . . . . . . . _____________________________________

F3=Exit   F12=Cancel
```

Chart: The name of the chart, which is been created.
Type: Write ***BAR** for a Bar chart and ***LINE** for a Line chart.
Description: Description of chart (not printed).

After entering the parameters above and pressing Enter, the '*Create Chart definition*' display is shown:

```
        Create Chart definition                                  CHA300D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Type options, press Enter.
  1=Select

Opt    Definition
 _   R Define general layout
 _     Define layout of the X-axis
 _   R Define X-axis points
 _   R Define layout of the Y1-axis
 _     Define layout of the Y2-axis
 _   R Define observations




F3=Exit   F12=Cancel
```

Note: **R** indicates required information.

Enter '**1'** next to the definition you want to create or change.

When finished editing the chart, press **F3** to exit and save the chart definition.

Define general layout

When selecting '*Define general layout*' the display below is shown. Here it is possible to set up parameters, that describe the general layout of the chart.

```
         Define general layout                                    CHA300D

Chart  . . . . . . . . . :   MYBAR
Type . . . . . . . . . . :   *BAR

Type choices, press Enter.

Chart header . . . . . .   ________________________________________
Chart header font  . . . .   ____
Chart header font color  .   ___
Chart height . . . . . .   ______   Inches.pels
Chart width  . . . . . .   ______   Inches.pels
Chart margin, left . . . .   ______   Inches.pels
Chart margin, right  . . .   ______   Inches.pels
Chart margin, top  . . . .   ______   Inches.pels
Chart margin, bottom . . .   ______   Inches.pels
Frame line width . . . . .   __       Dots
Frame line color . . . . .   ___
Legend margin  . . . . . .   ______   Inches.pels
Legend width . . . . . .   ______   Inches.pels
Legend spacing . . . . . .   ___      Pels

F3=Exit   F4=Prompt   F12=Cancel
```

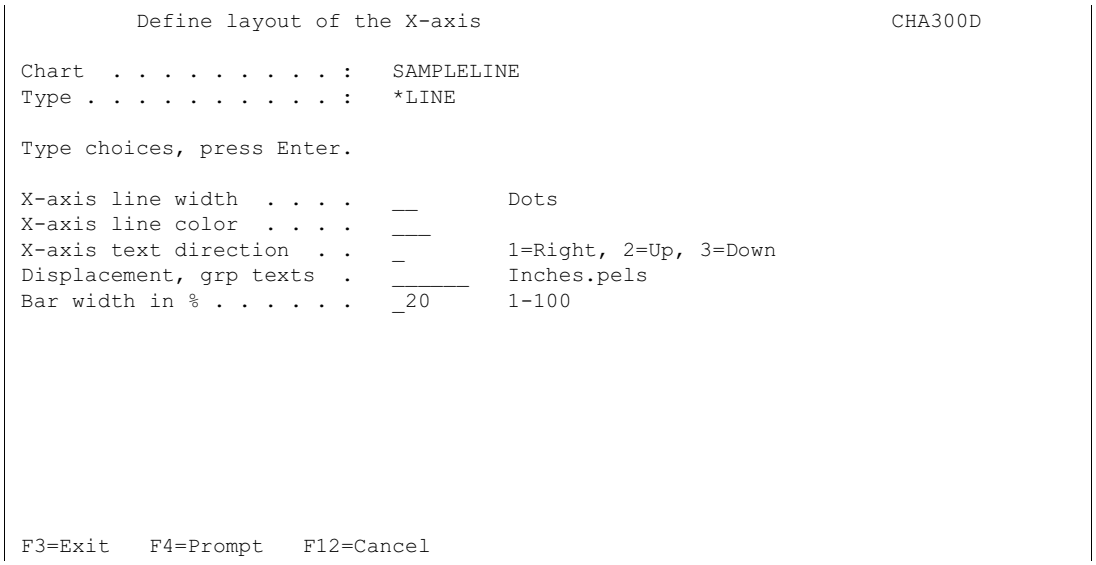
Chart header: The header of the chart.
Chart header font: Font used for the header text (prompt with F4).
Chart header font color: Color used for the header text (prompt with F4).

Chart height/width: Height and width of the frame in which the chart is printed.
Chart margins: The distances from the chart to the frame.
Frame line width/color: The line width (in dots) and color of the frame.

Legend margin: Distance from left edge of the frame to the text of the first observation set.
Legend width: Distance between text of the various observation sets.
Legend spacing: Distance from bottom edge of the frame to the text of the observation sets.

Define layout of the X-axis

When defining the layout of the X-axis, it is possible to define the layout of the axis it self, but also direction and displacement of the text belonging to the X-axis groups, if used.



X-axis line width/color: Specifying the width and color of the X-axis of the chart.

X-axis text direction: The direction and rotation of the text for the X-axis: Right means horizontal text. Up or down means vertical text (going up or down).

Displacement, grp. texts: Distance from bottom edge of the chart to the text of the X-axis groups.

Bar width in %: Width of bars. The is measured in percentage of the maximum width.

Define X-axis points and X-axis groups

When selecting *Define X-axis points* you get the screen below, which overviews the existing X-axis groups:

```
        Work with X-axis groups                                    CHX100D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Position to  . . . . .          Seq number

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display
  7=Assign new seq nbr to x-axis grp   12=Work with X-axis points

Opt   Seq number  ID   Text
 __       10      MON  Month









                                                                      End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

It is possible to change, copy and display the X-axis groups, it is also possible to change sequence numbers and to work with X-axis points for the specific group.

Pressing F6 for creating a new X-axis group will display this:

```
        Create X-axis group                                        CHX110D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Seq number . . . . . . . .   ___

X-axis group ID  . . . . .   ___
Text . . . . . . . . . . .   ____________________________________________
Text font  . . . . . . . .   ____
Text font color  . . . . .   ___









F3=Exit   F4=Prompt   F12=Cancel
```

Seq number:	Specify a sequence number. This will decide the order of the groups.
X-axis group ID:	ID of the specific X-axis group.
Text:	Text used to specify group on print out. (Printed below chart).
Text font/color:	Font and color of the text above.

The position of the text is based upon the legend fields on the 'General Layout' display and the layout of the x-axis.

Using option 12 it is possible to change sequence numbers and to work with X-axis points for the specific group as seen below.

Work with X-axis points

You can assign X-axis points to an existing X-axis group, by using option **12=Work with X-axis points** in front of the group as described above.

In the example above, where we have created a group called Month, we might add 12 X-axis points for that group, marking the 12 months of the year.

```
         Work with X-axis points                                  CHX200D

Chart  . . . . . . . . . . :   SAMPLELINE
Type . . . . . . . . . . . :   *LINE
X-axis group ID  . . . . . :   G1

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display
  7=Assign new seq nbr to X-axis point

Opt   Seq number  ID   Text                                      Spc

(No X-axis points to display)









                                                                    End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

If you press **F6=Create** to create a new X-axis point the following is displayed:

```
         Create X-axis group                                      CHX110D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Seq number . . . . . . . .   __1

X-axis group ID  . . . . .   __A
Text . . . . . . . . . . .   Jan._____________________________________________
Text font  . . . . . . . .   __11
Text font color  . . . . .   __1
Relative spacing . . . . .   _60
















F3=Exit   F4=Prompt   F12=Cancel
```

Seq number:	Sequence number which decides the order of the axis points.
X-axis point ID:	ID of the X-axis point for this specific X-axis group. This ID must be unique i.e. no other X-axis point can have the same ID – not even in other X-axis groups.
Text:	Text below the chart to mark this point.
Text font/color:	Font and color of the text.
Relative spacing:	Specifies the spacing in pels between the bars (only used for bar charts).

Define layout of the Y1 (and Y2)-axis

InterForm400® offers the possibility to define two Y-axis'. This can be used for printing graphs on the same chart with two different units of measure.

Choose this option from the chart definition display, and the following is displayed:

```
         Define layout of the Y1-axis                                CHA300D

Chart  . . . . . . . . . :   MYBAR
Type . . . . . . . . . . :   *BAR

Type choices, press Enter.
Text 1 . . . . . . . . . .   Number of installations_____________________
Text 2 . . . . . . . . . .   ________________________________________________
Text font  . . . . . . . .   __11
Text font color  . . . . .   __1
Text direction . . . . . .   1                    1=Right, 2=Up, 3=Down
Line width . . . . . . . .   _2                   Dots
Line color . . . . . . . .   __1
Minimum  . . . . . . . . .   _________0.00000
Increment  . . . . . . . .   _________1.00000
Maximum  . . . . . . . . .   ________10.00000
Edit word  . . . . . . . .   '_________________'
Values font  . . . . . . .   __11
Values font color  . . . .   __1
Grid line type . . . . . .   9                    1-9
Grid line width  . . . . .   _2                   Dots
Grid line color  . . . . .   __1
F3=Exit   F4=Prompt   F12=Cancel
```

Text1: First line of text for the Y1-axis.

Text2: Second line of text for the Y1-axis.

Text font/color: Font and color for the text fields above.

Text direction: Specifying the direction and rotation of the text for the Y1-axis text:
Right means horizontal text. Up or down means vertical text (going up or down).

Line width: Width of the Y1-axis in dots.

Minimum: Specifies the smallest value for the Y1-axis.

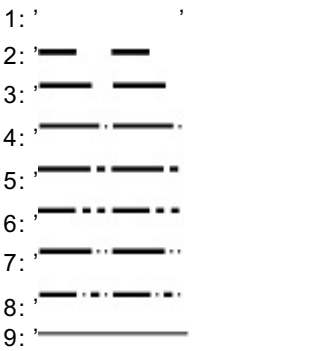
Increment: Specifies the difference between the Y1-grid lines (measured in Y1-units).

Maximum: Specifies the maximum value for the Y1-axis.

Edit word: Defines placement of commas, punctuation and minus sign. The value is written like ' , .-' (apostrophes must be included).

Values font/color:
Defines the font and color used for writing the values on the Y1-axis.

Grid line type: The type or pattern of the grid line. The type number corresponds to the pattern as follows:



Grid line width/color: Defines the width and color of the grid line.

Define observation set

When selecting **Define observations** from the **Create chart definition** menu, the following will be displayed:

```
      Work with Observation sets                                  CHS100D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display
  7=Assign new seq nbr to observation set   12=Work with sample observations

Opt   Seq number  Obs set  Text

(No Observation sets to display)









                                                                       End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

Here it is possible to work with existing observation sets. It is also possible to create a new observation set using **F6=Create**, which will result in the display below.

For charts with type *BAR the entry screen looks as follows:

```
         Create Observation set                                   CHS110D

Chart  . . . . . . . . . . :   MYBAR
Type . . . . . . . . . . . :   *BAR

Seq number . . . . . . . .   ___

Observation set  . . . . .   ___
Text . . . . . . . . . . .   ________________________________________

Text font  . . . . . . . .   ____
Text font color  . . . . .   ___
Use Y1/Y2-axis . . . . . .   _      1=Y1, 2=Y2
Line type  . . . . . . . .   _      1-9
Line width . . . . . . . .   __     Dots

Color  . . . . . . . . . .   ___
Pattern  . . . . . . . . .   _      0-8
Pattern color  . . . . . .   ___
F3=Exit   F4=Prompt   F12=Cancel
```

For charts with type *LINE the screen looks like this:

```
        Change Observation set                                  CHS110D

Chart  . . . . . . . . . :   SAMPLELINE
Type . . . . . . . . . . :   *LINE

Seq number . . . . . . . :   ___

Observation set  . . . . .   ___
Text . . . . . . . . . . .   ____________________________________________

Text font  . . . . . . . .   ____
Text font color  . . . . .   ___
Use Y1/Y2-axis . . . . . .   _      1=Y1, 2=Y2
Line type  . . . . . . . .   _      1-9
Line width . . . . . . . .   __     Dots
Point marker . . . . . . .   _      C, C1-C8
Color  . . . . . . . . . .   ___









F3=Exit   F4=Prompt   F12=Cancel
```

Seq number: The sequence number of this observation set. The sequence number is used for in which sequence this observation set is shown in relation to other observation sets.

Observation set: Name of this observation set.

Text: Description of the observation set. Printed below the chart.

Text font/color: Font and color used for the text above.

Use Y1/Y2-axis: Links the observation set to either the Y1- or Y2-axis.

Line type: For charts with the type *LINE this decides the type of line representing this observation set. The various types can be seen above under '*Define layout of the Y1(and Y2)-axis'.* The types used for grid lines are the same as these types.

Line width: Define the width of the line representing this observation set.

Color Color used for the line representing this observation set.

Pattern: Define the pattern inside the bars representing this observation set.

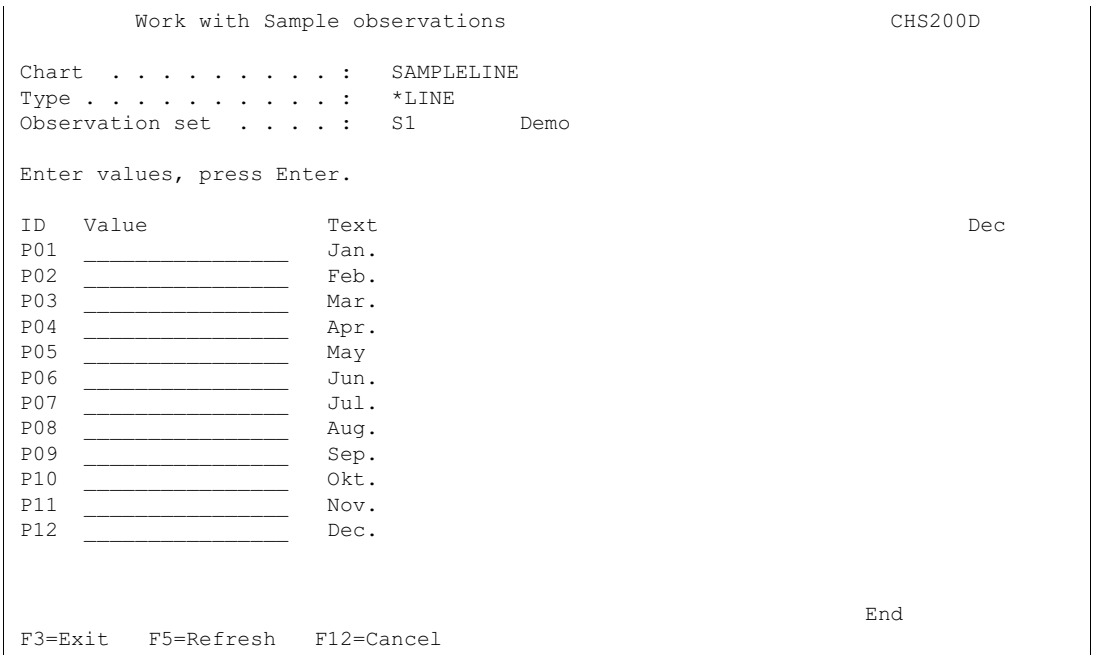
Pattern	Description
0	100% white
1	2% shading
2	10% shading
3	20% shading
4	35% shading
5	55% shading
6	80% shading
7	99% shading
8	100% shading

Pattern color: Color filling for the bars.

Point marker: For charts with type ***LINE** this decides the form of the points representing this observation set.

Marker	Description	
Blank	No point	
C	Point	0 % filled
C1	Point	2 % filled
C2	Point	10 % filled
C3	Point	20 % filled
C4	Point	35 % filled
C5	Point	55 % filled
C6	Point	80 % filled
C7	Point	99 % filled
C8	Point	100 % filled

When you press **Enter**, you will return to **Work with Observation sets**. Now it is possible to appoint values to this observation set. Select option **12=Work with sample observations**, and this will be displayed:



Prior to this an X-axis group has been created. In this case the group includes the ID's P01-P12 with the text, 'Jan.'- 'Dec.'. The **Work with sample observations** has value fields for all X-axis points no matter what -axis group they belong to.

Now we have been through all states of creating a chart. If you have done this, you can now view and print out the chart in the following ways:

If you have **Swiftview** installed, you are able to view the chart by pressing **F5** (Display chart), from the chart definition display.

You can print out the chart using option 6 from the **Work with Chart definitions**.

You can print out the chart when merging with a spool file, if the spool file has either the **&&CHA01 PRCH** or **&&CHA01 PRCM** command inside. See descriptions of the &&CHA commands below.

The &&CHA Chart commands

General format of the &&CHA commands

From	To	Description
1	5	&&CHA
6	7	Format version
9	18	Chart name
20	23	Function ID
25	Dep.	Function data

General description of the &&CHA commands
Chart naming:

To create an internally defined chart the first command issued must be the CRIC command. Internally defined charts are completely defined using the &&CHA commands in a spool file.

An *externally defined* chart is defined using the WRKCHT command before printing. First time you issue a &&CHA command for an *externally defined* chart, all parts of the chart definition - **except the sample data** - are automatically loaded. (To load the sample data use the LOEC command).

Internally defined chart names must begin with an asterisk (*) character as appose to *externally defined* charts, which **can not** begin with the asterisk character.

To reload an *externally defined* chart use the LOEC command.

Command examples
To print the Samplebar chart two inches down and two inches from the left margin print:

```
&&CHA01 SAMPLEBAR  PRSM 02000 02000 000
```

To print the Samplebar chart with the following data:

```
Observation set, S1:        Observation set, S2:
G11 = 1.2                   G11 = 3.1
G12 = 2.4                   G22 = 1.5
G21 = 1.4
G22 = 2.2
```

Print:

```
&&CHA01 SAMPLEBAR  OSDA  S1  G11    1.20000  G12    2.40000   G21    1.40000
G22    2.20000
&&CHA01 SAMPLEBAR  OSDA  S2  G11    3.10000  G22    1.50000
&&CHA01 SAMPLEBAR  PRCH
```

To print an internally defined bar chart:

```
&&CHA01  *INT1  CRIC ...   (Create internal chart)
&&CHA01  *INT1  GNLO ...   (General layout)
&&CHA02  *INT1  GNLO ...   (General layout)
&&CHA01  *INT1  XALO ...   (Define X-axis layout)
&&CHA01  *INT1  Y1LO ...   (Define Y1-axis layout)
&&CHA01  *INT1  Y1LO ...   (Define Y1-axis layout)
&&CHA01  *INT1  XGLO ...   (Define X-axis group layout)
&&CHA01  *INT1  XPLO ...   (Define X-axis point - 1. point)
&&CHA01  *INT1  XPLO ...   (Define X-axis point - 2. point)
```

```
&&CHA01  *INT1  OSLO ...   (Define observation set layout)
&&CHA01  *INT1  OSDA ...   (Add data)
&&CHA01  *INT1  PRCH ...   (Print chart)
```

Create/delete internal chart commands

Create internal chart (CRIC 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'CRIC'
25	34	*BAR or *LINE
Description: Creates a new internal chart definition.		

Delete internal chart (DLIC 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'DLIC'
Description: Deletes an internal chart definition.		

Load commands

Load external chart (LOEC 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'LOEC'
25	34	Load sample data for observation set ID / *NONE / *ALL
Description: Loads (or reloads) a chart definition.		

General layout commands

Define general layout (GNLO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'GNLO'
25	74	Chart header / *BLANK
76	79	Chart header font
81	83	Chart header font color
85	89	Chart height INPEL
91	95	Chart width INPEL
97	101	Chart margin, left INPEL
103	107	Chart margin, right INPEL
109	113	Chart margin, top INPEL
115	119	Chart margin, bottom INPEL
121	122	Frame line width in points
124	126	Frame line color
Description: Describes general layout of chart		

Define general layout (GNLO 02):

From	To	Description
1	5	'&&CHA'
6	7	'02'
9	18	Chart name
20	23	'GNLO'
25	29	Legend margin INPEL
31	35	Legend width INPEL
37	39	Legend spacing in pels
Desciption: Describes general layout of chart.		

X-axis commands

Define X-axis layout (XALO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'XALO'
25	26	X-axis line width in points
28	30	X-axis line color
32	32	X-axis text direction
34	38	Displacement, group texts
40	42	Bar width in % *1
Note: *1 For *BAR charts only.		
Description: Describes layout of the X-axis.		

Y1-/Y2-axis commands

Define Y1-axis/Y2-axis layout (Y1LO 01/Y2LO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'Y1LO'/'Y2LO'
25	74	Text 1 / *BLANK
76	125	Text 2 / *BLANK

Description:
Describes layout of the Y1- or Y2-axis.

Define Y1-axis/Y2-axis layout (Y1LO 02/Y2LO 02):

From	To	Description
1	5	'&&CHA'
6	7	'02'
9	18	Chart name
20	23	'Y1LO'/'Y2LO'
25	28	Text font
30	32	Text font color
34	34	Text direction
36	37	Line width in points
39	41	Line color
43	50	Minimum (Integer part)
51	51	Minimum (Decimal point)
52	56	Minimum (Decimals)
57	57	Sign minimum (- indicates negative value)
59	66	Increment (Integer part)
67	67	Increment (Decimal point)
68	72	Increment (Decimals)
74	81	Maximum (Integer part)
82	82	Maximum (Decimal point)
83	87	Maximum (Decimals)
88	88	Sign maximum (- indicates negative value)
90	109	Edit word (including '-s)
111	114	Values font
116	118	Values font color
120	120	Grid line type
122	123	Grid line width in points
125	127	Grid line color

Description:
Describes layout of the Y1- or Y2-axis.

X-axis group commands

Add/change X-axis group layout (XGLO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'XGLO'
25	27	X-axis group ID
29	31	Copy definition from X-axis group ID
33	82	Text / *BLANK
84	87	Text font
89	91	Text font color

Description:
Adds or changes the layout of a X-axis group.

Delete X-axis group (DLXG 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'DLXG'
25	27	X-axis group ID

Description:
Deletes a X-axis group.

X-axis point commands

Add/change X-axis point layout (XPLO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'XPLO'
25	27	X-axis group ID *1
29	31	X-axis point ID
33	35	Copy definition from X-axis point ID
37	86	Text / *BLANK
88	91	Text font
93	95	Text font color
97	99	Relative spacing
Note: *1 Required for new X-axis points.		
Description: Adds or changes the layout of an X-axis point.		

Delete X-axis point (DLXP 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'DLXP'
25	27	X-axis point ID
Description: Deletes an X-axis point.		

Observation set commands

Add/change observation set layout (OSLO 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'OSLO'
25	27	Observation set ID
29	31	Copy definition from observation set ID
33	82	Text / *BLANK
84	87	Text font
89	91	Text font color
93	93	Use Y1/Y2-axis
95	95	Line type
97	98	Line width in points
100	101	Point marker *1
103	105	Color
107	107	Pattern *2
109	111	Pattern color *2
Notes: *1 *LINE charts only *2 *BAR charts only		
Description: Adds or changes the layout of an observation set.		

Delete observation set (DLOS 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'DLOS'
25	34	Observation set ID / *ALL
Description: Deletes an observation set.		

Clear observation set data (CLOS 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'CLOS'
25	34	Observation set ID / *ALL

Description:
Clears a single or all observation sets.

Data commands

Add/change data by ID (OSDA 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'OSDA'
25	27	Observation set ID
29	31	Observation ID 1
33	40	Value 1 (Integer part)
42	46	Value 1 (Decimals)
47	47	Sign Value 1 (- indicates negative value)
49	51	Observation ID 2
53	60	Value 2 (Integer part)
62	66	Value 2 (Decimals)
67	67	Sign Value 2 (- indicates negative value)
69	71	Observation ID 3
73	80	Value 3 (Integer part)
82	86	Value 3 (Decimals)
87	87	Sign Value 3 (- indicates negative value)
89	91	Observation ID 4
93	100	Value 4 (Integer part)
102	106	Value 4 (Decimals)
107	107	Sign Value 4 (- indicates negative value)
109	111	Observation ID 5
113	120	Value 5 (Integer part)
122	126	Value 5 (Decimals)
127	127	Sign Value 5 (- indicates negative value)

Description:
Adds or changes data in an observation set by observation ID.

Print chart commands

Print **sample** chart (PRSM 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'PRSM'
25	25	Sign (+/-) distance top edge
26	30	Distance to paper top edge INPEL
32	32	Sign (+/-) distance left edge
33	37	Distance to paper left edge INPEL
39	41	Rotation
Description: Prints a sample chart.		

Print chart (PRCH 01):

From	To	Description
1	5	'&&CHA'
6	7	'01'
9	18	Chart name
20	23	'PRCH'
25	25	Sign (+/-) distance top edge
26	30	Distance to paper top edge INPEL
32	32	Sign (+/-) distance left edge
33	37	Distance to paper left edge INPEL
39	41	Rotation
Description: Prints a chart.		

☺ **TIP** ☺

The &&CHA commands in a spool file are interpreted when the spool file is merged with an overlay.

Appendix N - Sending E-mails from the System i

☝ **NOTE** ☝

In order to get PDF output you need to purchase the PDF module for InterForm400.

InterForm400 can be used for sending emails using either the OS/400 SMTP feature or via **InterForm400 SMTP**.

☺ **TIP** ☺

When you send out e-mails from InterForm400 the e-mails will be stored in the IFS in /APF3812Mail/OutBox. To prevent excessive disk usage it is a VERY good idea to run the APF3812/CLRMAILLOG command on a regular basis.

To email spooled files as attached PDF-files do one of the following:

1) Sending a complete, merged spooled file as an attached PDF file in an E-mail. For that purpose you would probably use the **APF3812/MRGSPLFPDF** command. Refer to page **449** for more information.

2) Send a complete spooled file having a program-generated front page.

The Spooled file must have PAGERANGE(2 n), where n=Any number or ***END**.

The e-mail front page must include lines with each of these keywords in any sequence:

Pos 20-30 = Keyword:
FROMADR,
FROMNAME
TOADR
TONAME
SUBJECT
ATTACH
MSG (up to 10 lines can be used).

Positions from 31 to 286 are used for the value of each keyword - except MSG. For MSG the text must be placed from position 31 to 106.

This is an example of a front page:

```
*...+....1....+....2....+....3....+....4....+....5....+....6....+....7....+...
To e-mail adr  . : TOADR      kse@interform400.com
Name . . . . . : TONAME     Kim Egekjaer
Subject  . . . . : SUBJECT    This is the e-mail subject
E-mail text  . . : MSG        Up to 10 lines of e-mail text. This is line 1
                              Second MSG line
PDF-file name  . : ATTACH     demo.pdf
From e-mail adr. : FROMADR    kse@interform400.com
Name . . . . . : FROMNAME   Name of e-mail sender
```

The spooled file should trigger a function **P=Send spooled file as PDF email** in Auto Forms Control and the merged spooled file will then be sent as an attached PDF file.
Refer to page 174 for more information.

3) Splitting the spooled file into parts for e.g. each customer, inserting e.g. information from the spooled file into the subject or contents of the E-mail or even into the name of the attached PDF file. This is done by use of an E-mail finishing definition. Refer to page 231 for more information.

4) Send e-mails via the APF3812/SNDMAIL command.

5) Send e-mails to multiple receivers with the APF3812/SNDEMAIL command.

Before the e-mails can actually be sent out you need to setup either InterForm400 SMTP or OS400 SMTP/MSF. You should really consider to use **InterForm400 SMTP** because of this:

a) The details of the InterForm400 SMTP **log information** is much more detailed than for OS400 SMTP/MSF. The APF3812/WRKMAILLOG command will just list *IBMSMTP if you use OS400 SMTP, but InterForm400 SMTP will be able to 'talk' directly with the receiving mailservers thus telling you the exact status.

b) InterForm400 SMTP is **easier** to setup.

c) E-mails sent via InterForm400 SMTP are sent out **faster**.

Setup of InterForm400 SMTP

The setup of InterForm400 SMTP is described on page 347.

Remember to add a start of the subsystem **APF3812/MAILINTER** in the IPL start up program if you chose to use the InterForm400 SMTP.

Setup of OS400 SMTP

The created E-mails can be sent out from the System i either directly from the System i or through a mail server. These are the commands, that you should use:

1) CFGTCP - Option 10. Work with TCP/IP host table entries
- Insert IP-address and Hostname of the mail server - if used.

2) CHGTCPDMN
- Insert the IP-adresses of Domain Name Servers at INTNETADR

3) Add possible unknown routes to the mail server
CFGTCP - Option 2. Work with TCP/IP routes

4) CHGSMTPA, press F4 to prompt

- Insert *YES to AUTOSTART SMTP server after IPL.
- Insert "HOSTNAME" of mail server at "MAILROUTER" - if used. If you want to mail directly from the System i you should specify *NONE for the MAILROUTER.
- Insert *YES as "FIREWALL" if the System i is not able to send directly through a firewall. The firewall parameter is ignored if you use *NONE for the MAILROUTER.

5) CHGPOPA
*NO at AUTOSTART, MSGSPLIT = *NOMAX or limit of mail server.

6) STRMSF
- Starts the Mail Server Framework.

7) STRTCPSVR *SMTP
- Starts the SMTP server on the System i

The commands STRMSF and STRTCPSVR should be called from the IPL Startup program of the System i.

More information can be found on the IBM web-pages:

http://publib.boulder.ibm.com/pubs/html/as400/v5r1/ic2924/index.htm
(Click on **Networking**, **TCP/IP** and **E-mail**.)

and
http://www-912.ibm.com/s_dir/slkbase.NSF/0cf528a492c9b4a886%2025680b0002037f/34879f5e413aa5cd8625697b0053f36a?OpenDocument&Highlight=0,SNDDST,%2520SNADS

Combining OS400 SMTP and Domino/400 on the same machine

If you are already running Domino on the same iSeries as the one where you have InterForm400 installed there will be a problem sending via SMTP unless you e.g. bind the OS400 SMTP to another IP-address than used for Domino.

An IBM Technical Document describing how to do that can be found via this link:

http://www-912.ibm.com/s_dir/slkbase.NSF/1ac66549a21402188625680b0002037e/b8a7f2a25678830686256c1c0052e8fa

(Document number 27850433)

Appendix O - Graphical Designer: Install and use

From InterForm400® an unlimited number of graphical designers can be installed. Below is a description of the requirements and how to install and use the designer.

Requirements for the Graphical Designer

Requirements for the System i:

- Select option '**75. Prepare server to support Designer**' on the **Service menu** to start all necessary servers. This option checks if these services are active (and checks if journaling is active) and then starts journaling/servers if necessary:
  ```
  STRTCPSVR SERVER(*DDM)
  STRTCPSVR SERVER(*DTAQ *RMTCMD *SIGNON *SVRMAP)
  ```
- Journaling of InterForm400® files must be started. (Refer to page 436).
- Execute the command: DSPNETA. Find the text/parameter 'DDM request access'. This should normally be *OBJAUT, it can also refer to a user program, but if it is *REJECT the DDM server will not work. Change the value if necessary with the command:

  ```
  CHGNETA DDMACC(*OBJAUT)
  ```
- If you want to use SSL when using the designer, then some configuration is needed in the Digital Certificate Manager (DCM) as described on page 681.

Requirements for the PC:

- The PC must be running Windows XP or newer.
- The PC must be connected to the System i via TCP/IP.
- Minimum 4 Gb RAM is required.
- JAVA Runtime Environment version 1.6 or later must be installed. (Currently support up to Java 1.8 has been confirmed).
- A minimum screen resolution of 1024x768 pixels is required.
- The InterForm400 graphical designer must be installed.

Requirements for the network:

If you access the iSeries through a firewall, be sure that these port numbers are not blocked:

Host Server	Port number
*CENTRAL	8470
*DATABASE	8471
*DTAQ	8472
*FILE	8473
*RMTCMD	8475
*SIGNON	8476
*SVRMAP	449

TCP-server	Port number
*DDM	446

Apart from that this port number must be open in order for to be able to activate Swiftview:

Service	Port number
Microsoft-DS	445

Limitations of the Graphical Designer

- **Barcodes** are not displayed correctly. Only an image looking like the barcode (in about the same size) is shown.
- **PCL files** included are not shown in the graphical designer. Only a frame indicating the PCL file is shown.
- Regarding **soft fonts:** If the True Type font is installed on the PC and linked via Autodownload to the used font number, and the True Type Font is uniquely identified via the first 16 characters in the description, then it will show correctly. If not the default font will be shown.
- **Rounding off**: The designer use inches and pels in the background for storing the overlay, so if you insert measurements in cm or in inches with a decimal point (i.e. no pels) then the designer will round up the positions to the nearest pels (1/240 of an inch). The rounding off is the clearest if you select 'inches' (instead of inches.pels) and change a measurement 0.001 either up or down. Such a slight change will disappear because of the designer rounding off.
- The special ZPLII fonts: 'CG Triumvirate Bold Condensed' and 'Dot Matrix' are shown in simular fonts, which does not look exactly like the original fonts.
- The preview option for label overlays (ZPLII/IPL) is not 100% correct. The data stream is converted in InterForm400 into PDF, so some differences may be expected compared to the final, printed result. It is however possible to get a 100% correct preview, if you preview via a ZPL compatible Zebra printer as described on page 41.

If you want to see the actual output you can activate Acrobat Reader or SwiftView from the graphical designer to see the exact result (after saving the design). (SwiftView will display the PCL files).

Installing the Graphical Designer

Installing JAVA Environment

Before installing the graphical designer you need to install JAVA Runtime Environment (if not already installed). The Java Runtime Environment can be installed in these manners:

1) From the InterForm400 **menus** by selecting '12. Service functions', '70. Install InterForm Designer on your PC' and '2. Launch JAVA Runtime Environment (JRE) setup program':

2) From the iSeries **IFS** by downloading and then run the file:
/APF3812Home/Designer/jre-6u5-windows-i586-p-s.exe

3) You can **download** the installation file from the web-site:

www.java.com

Make sure that you install a 64bit JRE, if you are running a 64bit version of windows.

You need to restart your PC to complete the installation.

Installing and setting up the Graphical Designer

☺ **TIP** ☺

Prior to installing the designer via the InterForm400 menu it might help to add a network share on the PC onto e.g. /APF3812Home.

You install the graphical designer from InterForm400® by entering InterForm400 with the command `APF3812/APFMENU` and selecting '12. Service functions' and '70. Install InterForm Designer on your PC'.

If this installation fails you can also find the installation file for the graphical designer in the IFS: /APF3812Home/Designer/. Find the directory with the highest number and download the .exe file to your PC and double click on the file.

Note, that you can setup a fixed code page to use for the graphical designer - per user.
(If blank the system codepage or spooled file codepage will be used).

You set it up from the InterForm400 menu:
80. Administering InterForm 400
1. Work with InterForm 400 users

Edit the user via option 2 and type in the EBCDIC code page to use in '*Designer code page*'.

Setting up the designer for DBCS use

You will need to use other fonts in the designer, If you want to use the the designer for DBCS. First you need to install the True Type Fonts on the PC and then you can refer to the fonts in the designer configuration file. The configuration file is found here:
C:\Documents and Settings\<PC user>\.interform\conf\client.conf

If you open the file in e.g. Notepad you will find these lines:

```
############################
## Font
############################
DefaultFontBarcode:     Free 3 of 9 Extended Regular
```

```
DefaultFontPDF:          PDF417Sample
DefaultFontFixed:        Courier New
DefaultFontProportional:SansSerif
DefaultSpoolFont:        Monospaced
```

You can now change them e.g. to refer to the SimHei font instead (if installed) like this:

```
############################
## Font
############################
DefaultFontBarcode:      Free 3 of 9 Extended Regular
DefaultFontPDF:          PDF417Sample
DefaultFontFixed:        SimHei
DefaultFontProportional:SimHei
DefaultSpoolFont:        SimHei
```

You can also setup the DBCS codepage to use with this selection in InterForm400:
80. Administering InterForm 400
1. Work with InterForm 400 users

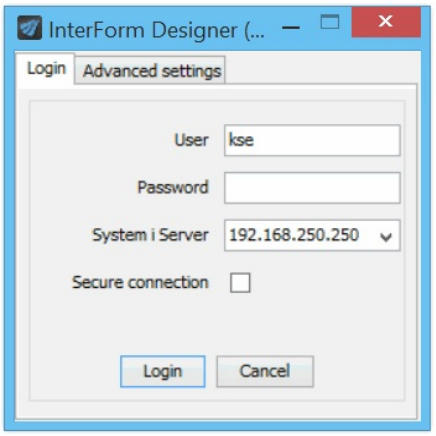
Edit the user via option 2 and type in the DBCS code page under '*Designer options*'. With the 'When to use code page' setting you decide if the should be used always or if a specific spooled file codepage (in the attribute) should override this.

Starting the Graphical Designer

If you have chosen to install a shortcut or Quick launch during install you can click on that to start up the graphical designer. The icon looks like this:

You can also start up the graphical designer by selecting 'Start', 'Programs', 'InterForm', 'InterForm Design' and 'InterForm Design'.

You will be presented with this screen:



State your user profile, password and the Netserver name or IP-address of the iSeries, that you run InterForm400® on and click on 'Login'. Wait about 10 seconds (depending on the PC and the iSeries) and the graphical designer will start up.

If you are not a registered user of InterForm400 or if you do not have access to any file sets in InterForm400 you will be refused access with the error 'Lost connection to the host' followed by another message indicating the exact problem.

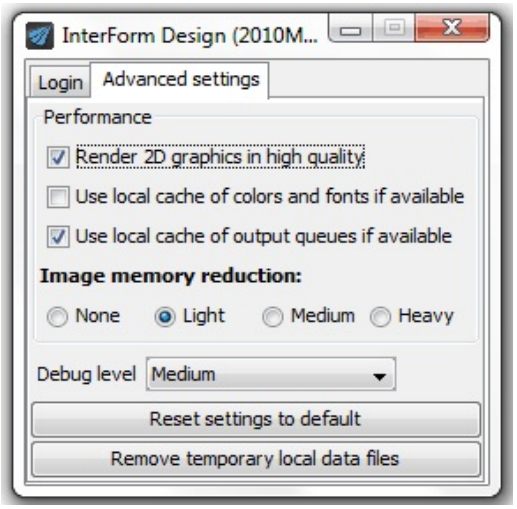
If you are not a registered user of InterForm400 you can do that as described on page 354. You can get access to file sets by using option '9=File set access' in the same screen.

The **Secure connection** option makes the designer connect via SSL. In order to use this option, SSL must be setup on the IBM I, that you connect to. On page 681 you can see how to enable this on the IBM i.

Improving performance of the designer

If you want to speed up the graphical designer you can do this:

On the logon screen you need to click on the '**Advanced settings'** tab. For maximum performance you can consider either of these settings:



a) Disable '***Render 2D graphics in high quality***'. This will reduce the quality of the rendering a bit.

b) Enable '***Use local cache of colors and fonts if available***'. This will make the startup of the designer a bit faster. To update the fonts and colours later you can later select '*File*' and '*Reload fonts and colors'* in the designer.

c) Set the '***Image memory reduction***' to '**Medium**' or even '***Heavy'***. This will make any included images display in a low resolution but it will not affect the output quality of merges and previews. The higher reductions will use less RAM on the PC.

d) Set the '**Debug level**' to either '**Low**' or '**None**'.

e) Disable any **background image** that may have been included or reduce the size of the image used. You can toggle the background image via this icon in the middle of screen in the top:

Background image disabled: Background image enabled:


f) You can locally cache the list of all spooled files by activating the option 'Use local cache of output queues if available'. If you want to update the list of spooled files you will then need to click the 'Refresh' icon, when viewing the spooled file list - as shown on page 589.

Start designing an overlay

When the InterForm Graphical Designer starts up you will see a window with this heading:

If an overlay is open, the **file set** and **overlay** is shown on the left (SAMPLE/IF400DEMO). Next the **spooled file name** and **owner** is shown (QPRINT[KSE]), followed by the **user profile**, that is signed on (kse) and the **IP-address or ID** of the System i (192.168.250.250). Finally the **job number** (010251) and the **memory usage** (77/227 Mb) is shown.

The job number in the heading refers to the job number of the corresponding job with the name QZRCSRVS in subsystem QUSRWRK on the iSeries. Use the command `'APF3812/WRKPRFJOB'` to display all jobs used by a specific user profile -including server jobs. Refer to page 543 for more information of this command.

Now you have these opportunities:

Create a new overlay

To create a new overlay for **PCL** and/or **PDF** output you can either press the icon looking like this:

- Or select 'File' and 'New overlay'.

If you want to create a new overlay for Zebra (**ZPL**) output you press this icon:

Edit an existing overlay

To edit an existing overlay you can either select this icon in the left side:

- Or select 'File' and 'Open'.
Then you will see a list of the file sets, that you have access to. Open the file set and select the overlay to edit.

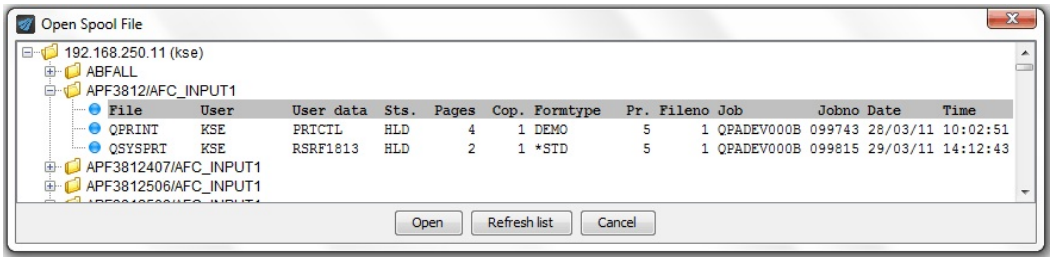
If another already has opened the overlay you will get the error message 'Locked by another user'. To see exactly which job it is you need to try to edit the same overlay through the green screen. If it is a graphical designer job (that is inactive) you can end that job from the InterForm400 menues if you select '80. Administering InterForm 400' followed by '50. Work with Designer job overlay locks'.

Open a Spooled File

If you want to design the overlay for a specific kind of spooled file you can see the spooled file with the overlay if you select this icon on the right side of the screen header:

- or select 'File' and 'Open Spool File'.

You will then see a list of all the output queues that contains spooled files. The output queues are sorted by library name followed by output queue name as shown below. If you have chosen to locally cache the list of spooled files and output queues, then you can press the 'Refresh list' icon to download an updated list from the System I.



Settings and tools for the design

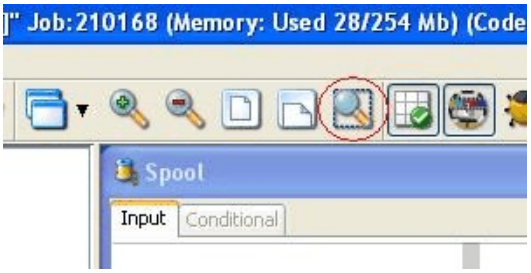
Before you start the actual design you want to setup the graphical designer. Below are a few suggestions for that:

Changing the displayed size

You can zoom in or out by selecting ‘Display’ and ‘Zoom In’, ‘Zoom Out’ or ‘Size’ or by use of the icons looking like magnifying glasses. You can also click on this icon to select how you want to divide the screen between the result and input view:

You can even also drag in the corners of the spool- and result-view to change the size and position of these windows. Finally you can also drag the vertical line, that marks the border between to element listing and the views to extend or reduce the space available for the views.

Apart from the zoom icons above you can also select this to zoom into a selected area:

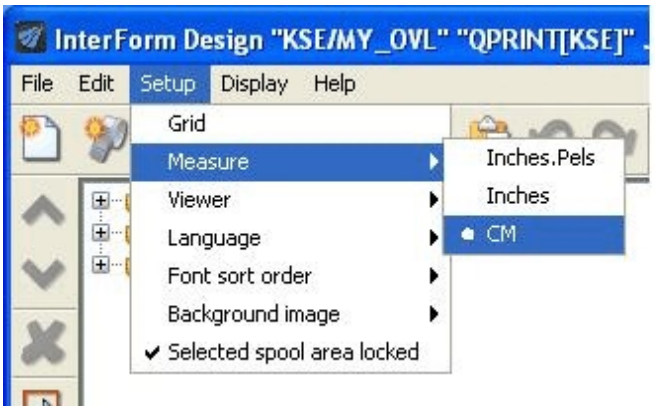


After clicking the icon you place the pointer in the result view and drag (with left mouse key) around the area that you want to zoom into.

Changing the measurement used

You can chose the measurement used to be either **inches and pels** (where the pels are 1/240 part of an inch - placed after the decimal point), pure **inches** (with a normal decimal point) or **centimeters**. Notice that measurements will be rounded off to the nearest whole number of pels (1/240 Inch).

You select it here:



Selecting unicode output

Press this icon to enable/disable unicode output for display and preview:
(Remember to install unicode soft font(s) and specify autodownload for the used font numbers.)

Previewing the result in PDF or SwiftView

You can preview the final result of the merge. You preview the PCL result in SwiftView. The ZPL and PDF preview is using the application associated with the '.PDF' extension on your PC - most likely Acrobat Reader.

To preview the current result press either of these icons:
(Found on the very top right of the screen)

NOTE

The ZPL preview result is not 100% correct. The ZPL datastream is converted into PDF and an approximate result is shown.

Including a background image

If you have one of the following situations you can use a background image to help you:

1) If you want to redesign or remap the spooled file to fit into a preprinted page, that you have scanned earlier.

2) If you want to create a complete design (or overlay) to be used instead of an existing preprinted page.

The background image is used only as help for the design and is not included in the overlay.

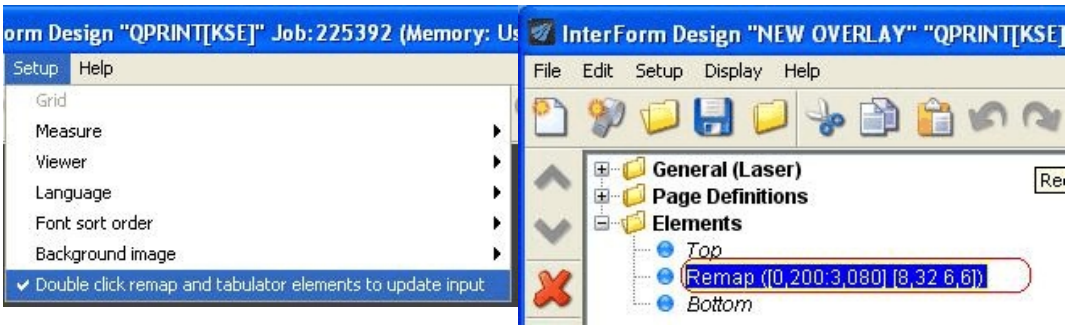
To select a background image select this in the designer:'**Setup**', '**Background image**' and '**Select background image**'. Please note, that the background image does not need to be installed in InterForm400 as the case is for other images, but can be selected directly from the PC. Supported formats are jpg files and bmp files.

Note, that the image will be sized to fit to the page still keeping the image ratio - unless you deactivate '**keep image ratio**' under 'Background image'. Deactivation of 'keep image ratio' will make the background image to be scaled to fit the full width and height of the page.

Select ‘Setup’, ‘Background image’ and ‘**Display transparent background**’ to make the background more transparent like below: (Notice that the upper left frame of the scanned image is covered by a frame inserted in the overlay).

Lock spooled file selections

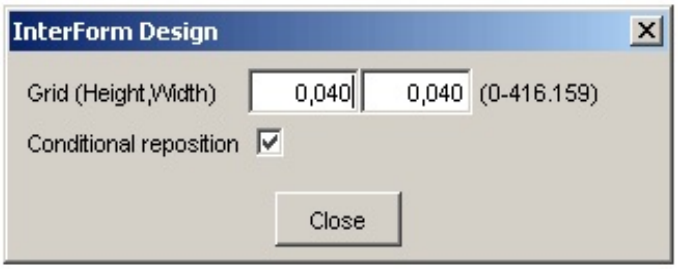
In order to prevent users from unintentionally changing remap window and tabulator elements in the designer the ‘**Double click remap and tabulator elements to update input**’ feature is added. If you activate it (and it is activated as default), then you cannot change the spooled file area handled unless you double click on the element in the element list in the upper left corner (marked in red below) and click in the Result window when the change is done..



Other Design preferences

Use of Grid

As default the graphical designer has a grid activated, which is 40 pels by 40 pels (6 lines per inch). When the grid is activited the cursor will snap to the grid, making it easier to align design elements. Change the size of the grid by selecting 'Setup' and 'Grid':



Activate 'Conditional repositioning' to reposition the grid when designing conditioned suboverlays.

Press this icon to enable a background image, that previously have been included in the designer via '**Setup**', '**Background image**' and '**Select background image**'.

Press this icon to (temporarily) disable the grid and the rulers. This will make it possible to place elements freely without the corsor is snapping to the grid.

Designing for colour or B/W (For laser/pdf overlays only)

You can shift between looking at the B/W output or colour output by pressing this icon in the upper toolbar.

This will affect what you see in the graphical design and when you preview the result in SwiftView and Acrobat Reader.

Designing for 203 or 300 DPI (For Zebra overlays only)

The printed ZPL result depends on if you run a 203 or 300 dpi printer.
Click this icon to change the resolution view, so that it fits that of the printer.

Debugging the design

Press this icon to temporarily disable all design elements below the marked design element. This can be used e.g. to solve problems with conditions, that does not execute as you thought.

Disabling/enabling the spooled file

Press this icon to (temporarily) disconnect/connect the spooled file and view the overlay without any spooled file text.

Flipping through the pages of the spooled file

On the right side of the tool bar you will see this:

This can be used for flipping through the pages of the merged spooled file and e.g. looking at the merged result page by page. You can drag in the pointer, press the arrows to flip through the spooled file or type a specific page number, that you want to look at.

The tool bar changes its function:

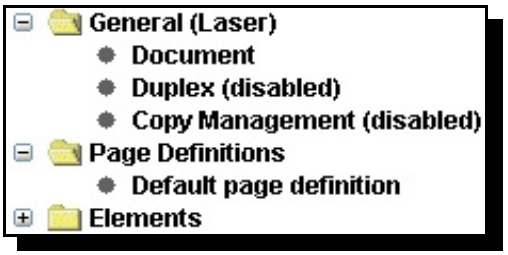
- If you activate **copy management** you can use this to see each of the resulting copies. P1 denotes e.g. the first primary copy/version of the output.

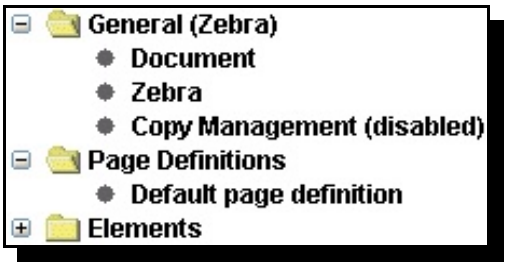
- If you use a conditioned overlay and you transfer 1 or more lines onto the conditioned overlay, then you can press the 'Conditional' tab in the input view. When looking at the conditional tab you can use this to flip through the places where this condition is true on the current page. The conditional tab will show you the lines transferred to the conditioned overlay. This function is very handy when remapping the spooled file text in the conditioned overlay.

Decide the sort key for the font listing

Select 'Setup' followed by 'Font sort order' to decide in what order you want to have the available fonts sorted when listed. You can chose to either list the fonts by the font number (default) or by the font description (name).

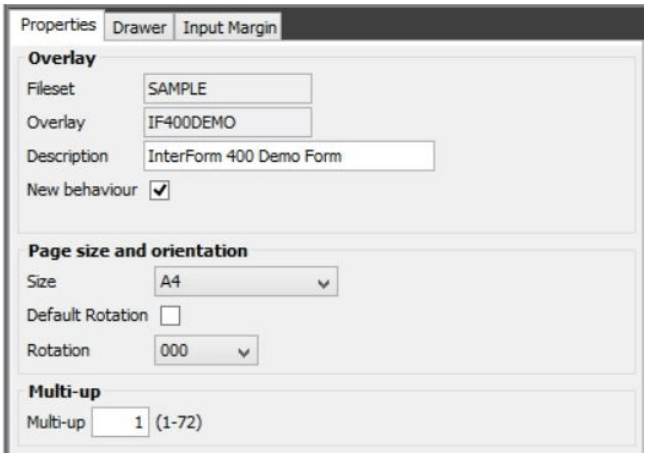
Open up the 'General' folder to view the general settings for the overlay, that you are designing:





The options within does the following:
(In dept information of these options can be found on page 59.)

Document Displays the file set and overlay name. You can change the description of the overlay, size and orientation of the paper, multi-up (Pages per side) and margins (number of lines and/or characters to move the spooled file down or right).



New behaviour

You can chose how rotation should be handled via the 'New behaviour' option above.

If Disabled: Works like pre 2017 versions of InterForm400

If this is disabled, the rotation of elements depends on element type. Text, remap window will e.g. change the reference point depending on rotation and the frames and line are always using the positions as written in portrait rotation.

The rotation of sub-overlays is ignored and only the rotation of the main overlay is used. Conditioned overlays are positioned in the same manner as in earlier versions of InterForm400.

Pro: Works like in older versions of InterForm400. It is possible to export overlays for use in older versions of InterForm400.

Con: Rotation of overlays is not easy - each element must be rotated individually. Repositioning of conditioned overlays has limitations.

If Enabled: New behaviour introduced in 2017 versions.
If the New behaviour option is enabled, you can easily rotate a complete overlay by changing the rotation in the document properties above.

If you rotate texts and remap windows, then they will rotate around a fixed position set from the upper left corner - in whatever rotation you are using. Positions of lines and frames are set relatively to the document rotation.

The conditioned overlay can be rotated relatively to the main overlay. The rotation is set on the conditional element in the main overlay. The rotation of unconditioned overlays is ignored, and the rotation of the main overlay is used for the elements inside.

Positioning of conditioned overlays has been improved, so that absolute and relative positioning in both the horizontal and vertical direction are fully supported. Relative positioning relates to the placement of the input spooled file text as specified in the global setting (extended page definition).

Pro: With the new behaviour you can easily rotate complete designs by rotating the setting on the main overlay, and you can also rotate as well as reposition conditioned overlays. This is a more intuitive way to design. With this it is easy to reuse a conditioned suboverlay multiple times with different positions (and different rotations) in main overlays.

Con: The new behaviour option is not supported for pre 2017 versions of InterForm400, so you cannot import such overlays in older versions - if you do they might look wrong.

Size

If you select 'Custom' as the size, then you are also asked for the length and width of the paper as shown above. If you select other than Custom these input fields will not be shown.

Duplex

Activate duplex if needed. (Not available for ZPL output).
Duplex cannot be combined with copy management (unless you use the *CPYMNG option as specified on page 63).

You can only save a duplex overlay, if duplex is enabled on the file set, that you are saving the overlay into. If the duplex option is not enabled on the file set, you will get this error message:

'Unable to save. Unable to save overlay. Fileset does not support duplex'.

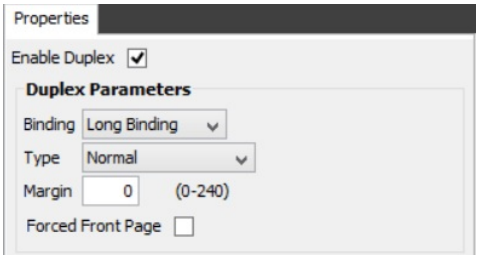
To get around this error message you either need to save to another file set or enable duplex for this file set as described on page 355). If duplex is disabled (if you e.g. use the HP4 or HP4500 printer types), only the front of the paper is used (simplex).

Duplex is ignored for PDF output - so any fixed back or front overlay is not included in the PDF result.

For printing duplex you also need to select a duplex printer type in InterForm400 when you do the merge.

It is possible to print partially in duplex, if you are using an overlay selector, which switches between duplex and simplex overlays.

The duplex options are shown here:



Binding: Possible values are 'Long Binding' and 'Short Binding'. This works with the Margin field below. The binding indicates around which paper edge the duplex is to be done. When duplex is enabled you decide if the individual elements are to be inserted only on **odd** or **even** pages via the (See **Page control** page 77).

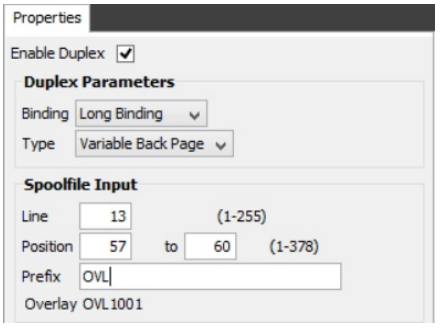
Type: The type of duplex, that you want to use. Possible values are:

Normal Normal duplex: Saves paper by printing spooled file data on both back and front. Please note the '**Forced front page**' option below, if you are printing multiple documents in each spooled file.

Fixed Back Page Inserts a fixed overlay on the back - without spooled file data. This can be used for 'Terms of delivery' or similar.

Fixed Front Page Similar to the Fixed Back Page - this is however printed on the front - prior to the page with the spooled file data. This can be used on printers, that are printing duplex pages in reverse order.

Variable Back page Similar to the Fixed Back Page except you can combine information on the 'front' page with a prefix to identify which overlay to use on the back:



In the example above we are using the prefix, OVL combined with the information found in the spooled file in line 13, position 57-60. As the current page contains '1001' in these positions, the back page inserted will be 'OVL1001'. The length of the Prefix

plus the length of the string found in the spooled file cannot exceed a total of 10 characters.

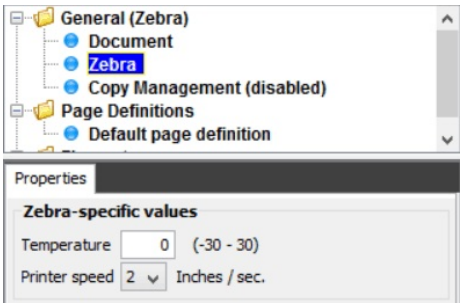
Forced front page: Can/should be used if you use duplex print without a fixed back/front overlay and you can have multiple documents in each spooled file. This option controls if the overlay, for which the Duplex function has been selected, always should be printed on a front page, when used. If you activate this, you can avoid that the first page of a document is printed on the duplex side of the previous page.

You need however to use this with an overlay selector and another, similar overlay with 'Forced front page' deactivated, which is to be selected for any page of the spooled file, that is not the initial page of a document.

Margin: This value in the field states the width of the binding margin in n/240 inch. The complete overlay will be displaced with this margin to make extra space for binding/holes.

Zebra Sets specific Zebra (ZPL) parameters: Printing speed and relative temperature. This is only relevant if you create an overlay for Label printing e.g. with this icon:

The parameters are:

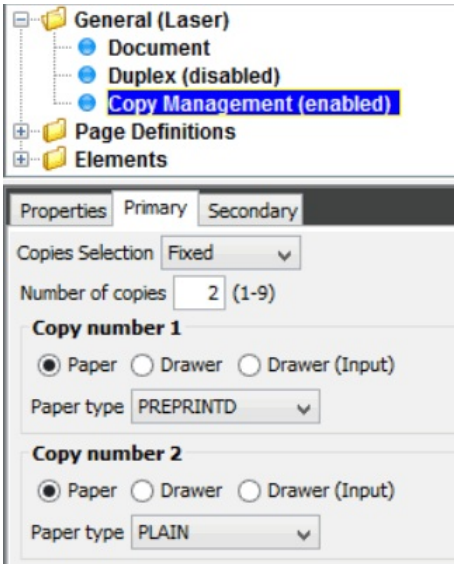


Temparature: The relative temparature to use for this overlay. If you set it to 0 (zero), then the temparature setting on the printer will be used. Another value (which can be negative) will be added to the temparature setting on the printer. A higher value will create a darker output, but may also mean more tear on the printer head.

Printer speed: The printing speed of this specific overlay. Unsupported speeds will be ignored by the printer.

Copy Management: Copy Management can be used for printing duplicates of each page like this: Page 1, Page 1, Page 2, Page 2 etc... Up to 9 copies can be created. Alternatively you can create multiple copies with the COPIES attribute or simply by doing multiple merges. Each copy can be different as you can condition the design elements on the copy number - and also on if it is a primary or secondary merge. (You can set 'primary' or 'secondary' during the merges. Primary is default).

Here you can activate or change the attributes of Copy Management:



Copy Management can also be compbined with stapling. Refer to page 72 for more information about this.

Copy Management has these parameters, which can be set for both primary and secondary:

Copies Selection:

Fixed: A fixed number of copies are to be printed of each page.

Variable:
The number of copies is variable and picked from the actual spooled file page in a specific position. This position should be numeric. If the position is not numeric, the number of copies will be 1.

Spool Input:
The COPIES attribute of the input spooled file is used as the number of copies.

For each of the copies you can select the paper drawer/tray as:

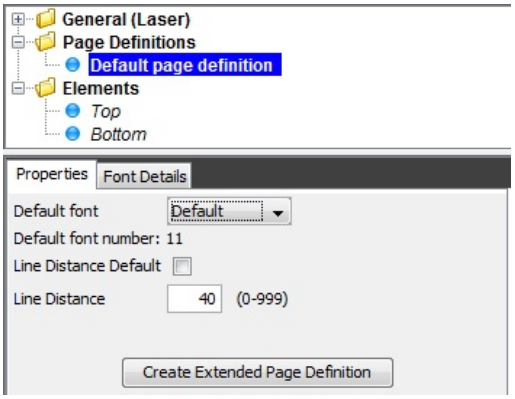
Paper: Select the paper tray for this copy via a paper type as described on page 481.

Drawer: Select the paper tray as a PCL drawer number as described on page 480.

Drawer (Input): The drawer can also be set as **Input**, which means, that the drawer selected in the input spooled file will be used. This is described on page 418.

Page definitions:

Page definitions refers to the default font, line height and Extended Page definitions.



The fields are:

Default font Possible value are:

None (Blank) No spooled file data is shown in the output unless it has been remapped or tabulated.

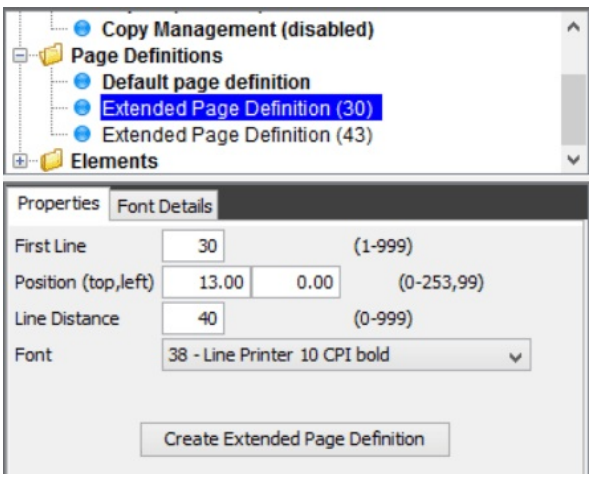
Default All spooled file data is shown in a default font (font 11).

Select Select the default font for the spooled file via a drop down list.

Line Distance The default line distance is 40 pels which equals 6 lines per inch (LPI). This is the basis for the placement of relatively placed conditioned overlays. It is a good idea to select a line distance that fits the font size you intend to use. Also be sure that the output page is high enough to include all spooled file lines needed.

Open up this folder and insert new lines by use of the this icon:

If you press that, then you can tell InterForm400 how to format the spooled file lines from a specific line. (Remember that the tabulators and conditioned overlays will reposition the output relative to these positions, and that you can override this with a remap window element). If you create a new Extended Page Definition you will see this:



Above the start line is set to 30, and another page definition is set to start at line 43, so it means that we have set some specific line distances/heights for these intervals of spooled file lines:

1-29
30-42
43-

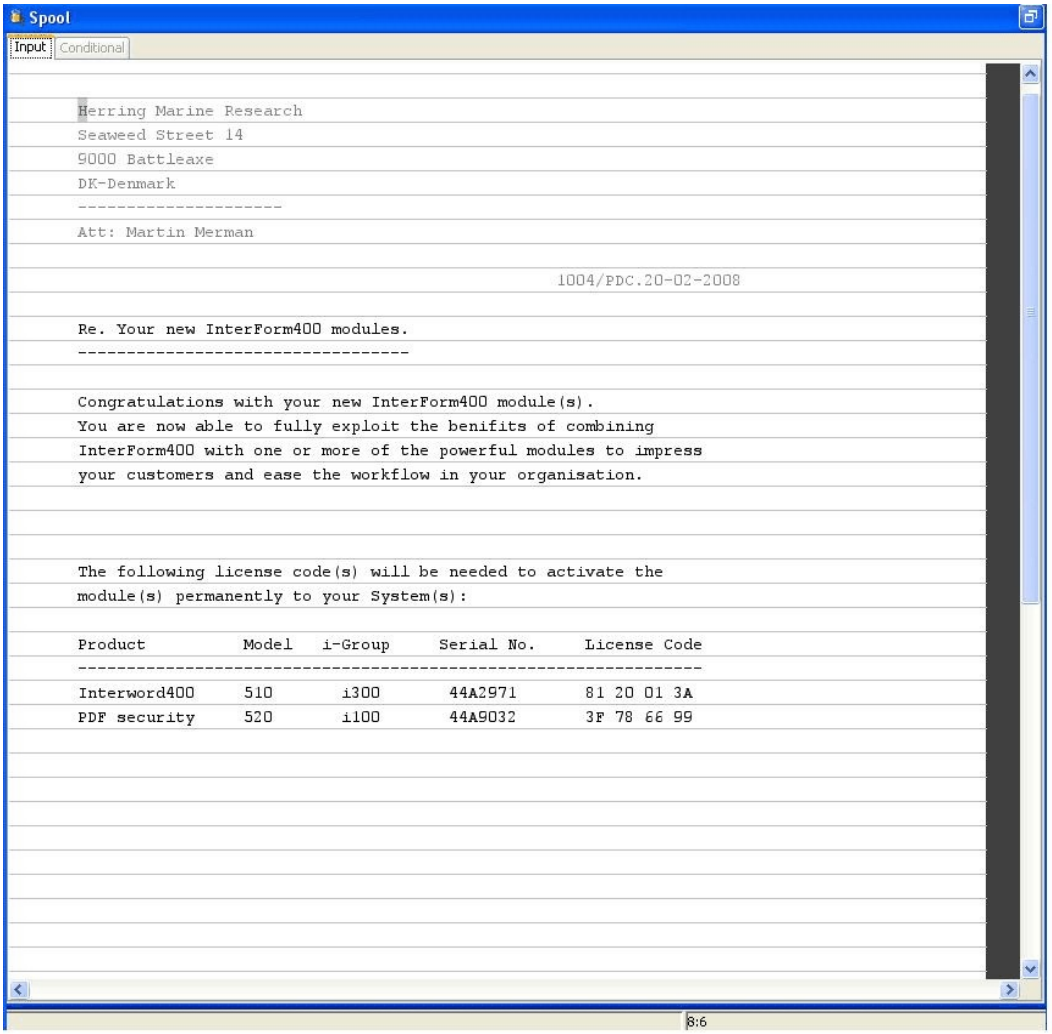
In the range 30 to 42 the spooled file lines will be printed 13 cm (that is the measurement used here) from the top, with 6 lines per inch and printed in a bold font (font 38).

In this way we can create multiple columns in the output, or print the detail lines of a document with a different line distance than the rest of the document.

For more information of extended page definition refer to page **69**.

The spool view

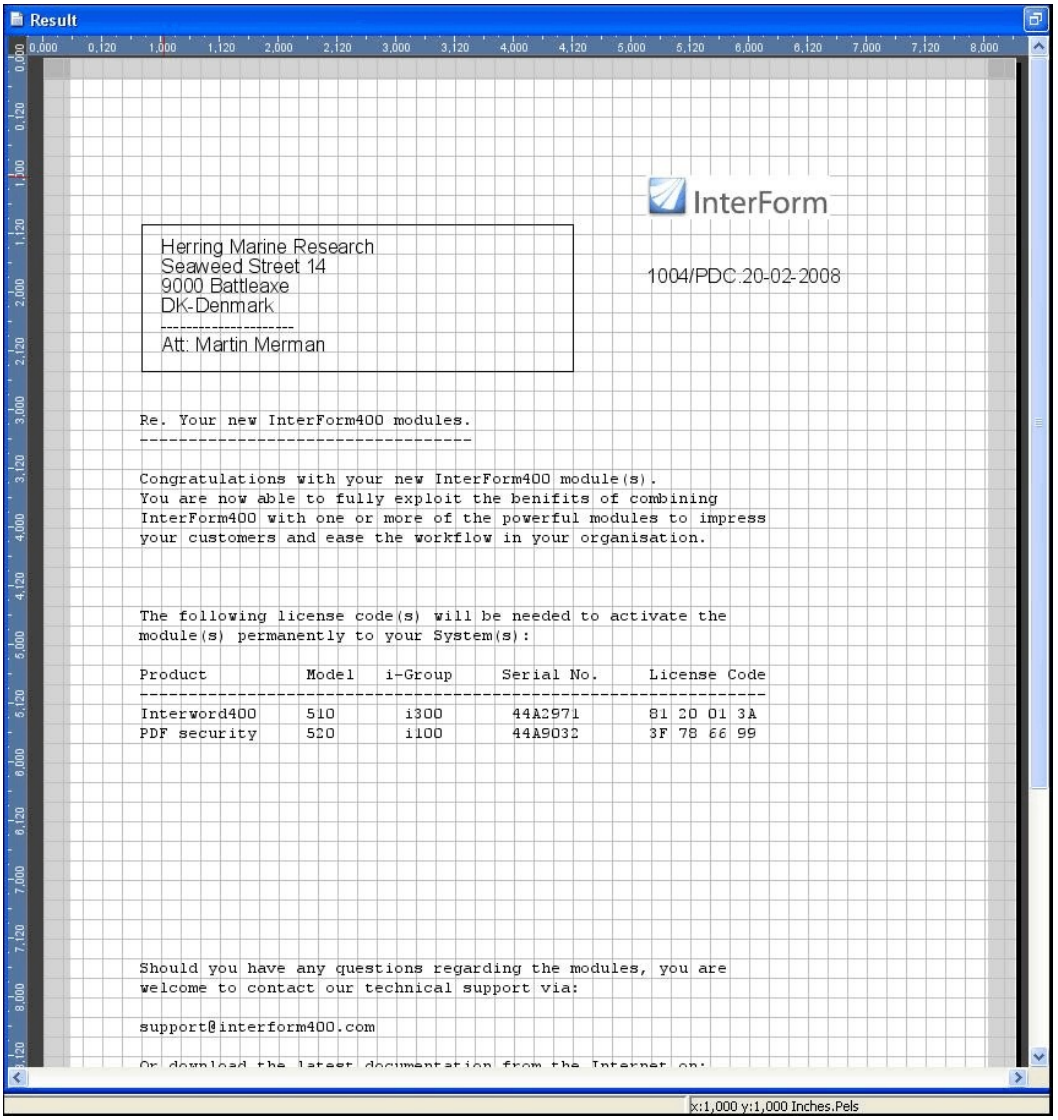
When you design, you can view the original spooled file and the resulting spooled file on the right. Select the **'Spool**' view to see the original spooled file. Text, that has already been remapped or tabulated will be shown in grey:



If the mouse pointer is placed in the spool view the current position is shown in the bottom to the right. Above the current position is position 8 in line 6. If you mark a conditional element the '**Conditional**' tab will light up - making it possible to view the lines transferred to the specific overlay by activating this tab. You can use the conditional tab to define tabulators and remap windows in the conditioned overlay.

The Result view

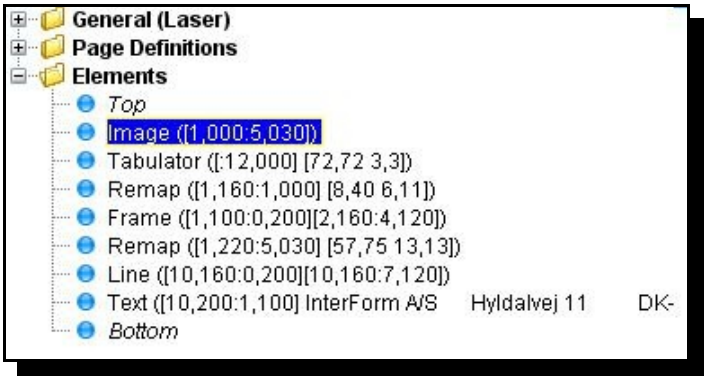
The result view looks like this:



Please note, that the rulers are only displayed with the grid. You can mark an element and drag it to the position you want. The current position of the mouse pointer is shown in the bottom in inches and pels.

The design elements

To start editing or adding design elements for an overlay you need to open the 'Elements' folder of the overlay:



 Press this icon to move the marked element upwards in the list.

 Press this icon to move the marked element downwards in the list.

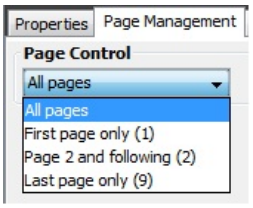
 Deletes the marked design element. You can also just mark an element and press the <Delete> key.

You can also use the normal clipboard options cut/copy/paste to change the elements as well as 'undo' and 'redo' the last changes. You need to click the element(s) in the element list on the left to use the clipboard options.

All elements are placed between '*Top*' and '*Bottom*'. Activate the position between '*Top*' and '*Bottom*', where you want to insert the element. The new element will be placed after this position. After activating an element you need to place it on the result view on the right.

Sticky elements
Note: If you want to insert many elements of the same type you can double click on the element type (on the list to the left) making the element type stick and it is marked with a red frame. Now you can insert many elements of the same type without having to select the element type each time. Just click on the element type again (hold down the key for a while) when you are done.

Page Control
For all the elements (except the Suboverlay element) you can chose to insert the element on specific pages only via the Page Management tab.
You can chose to inser the element on:
All pages (default)
First page only
Page 2 and following
Last page only

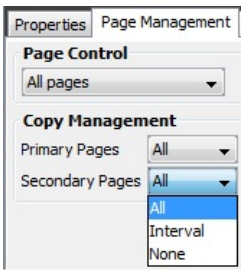


Copy management

If you have enabled copy management on the overlay, then each element can be inserted on all or specific copies. You set that on the Page management tab of the element.

The primary and secondary pages refer to the merge type.

You can set if you do a primary (default) or a secondary merge when you specify the merge with an overlay or overlay selector.



All: Include the element on all copies.

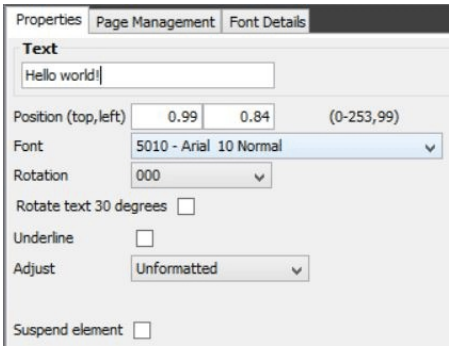
Interval: Include the element on an interval of copies.

None: Do not include the element on any copies.

Here are the element types you can insert:

Fixed text.

Use this element to insert a fixed text or fixed barcode. The properties are:



Text The text to insert. The text can be up to 378 characters long.

Position The position from the top and left. (Reference point changes with rotation).

Font The font to use for the text. Please note, that 2D barcode font numbers are not supported for text constants. You need to use either a concat or remap window element for 2D barcodes.

Rotation The rotation of the text. Notice that the text will change the reference point when rotated, so you may need to zoom out in the Result view to see the new position after rotation.

Rotate text 30 degrees
Option possible for font numbers >=5000. Rotates the text additional 30 degrees.

Outline If the text is rotated 30 degrees, then you can also chose to outline it. (Letters are not filled out).

Underline Underlines the text.

Adjust Adjustment of the text. It can be unformatted, centered or right adjusted.

Print Info

Inserts data of the spooled file or overlay in the output.

The element works like the text element above except the Information type field, which can be set to these values:

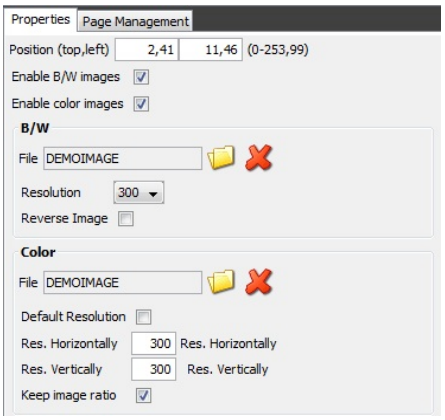
Value:	**Prints out:**
Page number	Page number of the actual page.
Last page number	Total number of pages.

Multi up page number	
	The actual page number when using Multi-Up.
Job Name	The job name.
User	User profile used for the job.
Job Number	Job number of the job.
Job	Job name/User/Job number.
Program Name	The program, that created the spool file.
Program Library	Library of the program, that created the spool file.
Overlay	The name of this overlay.
File set name	File set of this overlay.
Print text	The PRTTXT attribute of the merged spooled file.
Timestamp	The date and time of when the spooled file was created - in the format YYYY-MM-DD HH:MM.SS.

The Image element

Inserts an imported TIF/BMP/JPG image in the design.

This image must have previously have been imported in InterForm400. You can select either a black/white image, a color image or both:

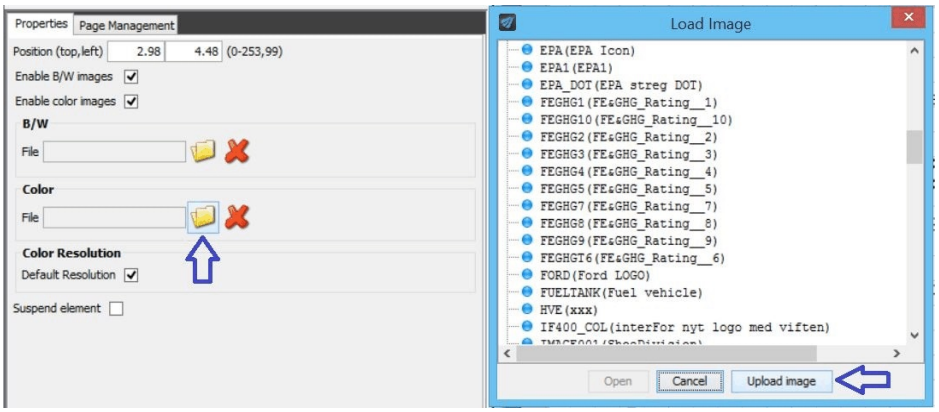


You can chose to include the image on either the black/white, the color or both outputs, by selecting the 'Enable x images'. You get the best quality of output if you select separate images for B/W and color like above. The image is inserted by clicking the folder icon, which lists the images installed in InterForm400.

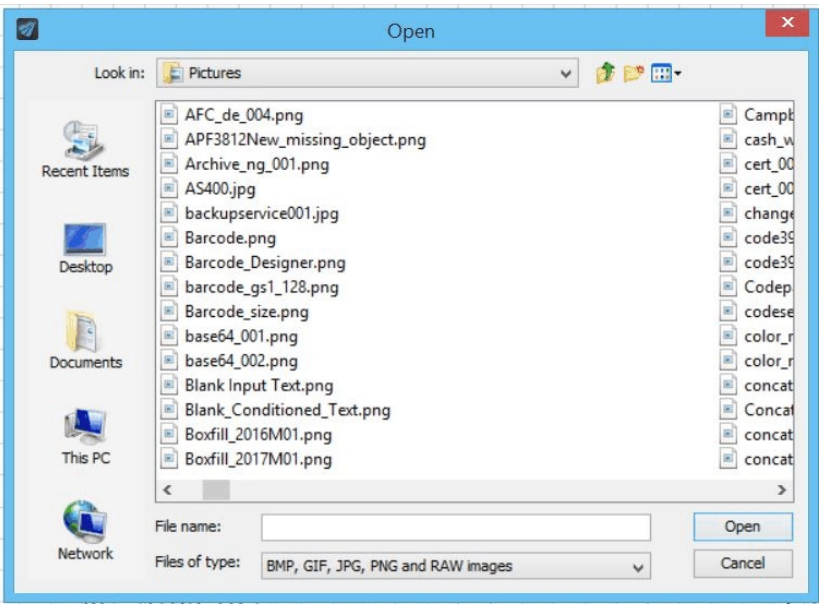
If you click the red **X** you will delete the reference to the image - NOT the installed image.

You can install images in two ways:

1. Via the green screen as explained on page **407**.
2. You can also install color images directly from the graphical designer, by clicking the yellow folder next to it, and then click 'Upload image':



After you click **Upload image** you are presented with a file explorer, from where you can select the image (supported images are: bmp, gif, jpg, png, raw and tiff):



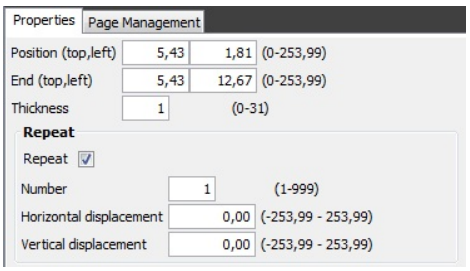
Resolution/resizing

You can resize the image by changing the resolution. The higher the resolution the smaller the image. The resolution for the B/W image can only be changed in fixed steps, while you can set the color resolution to any value. If you remove the 'tick' for the 'Default resolution' you can drag in the corners of the color image to resize it.

The **Reverse image** option for the B/W image switches the colors black and white. You can check the color and B/W output by clicking the **Toggle color** icon in the top: 

Line

Drag with the left mouse key pressed in the result view to insert the line. The properties are:

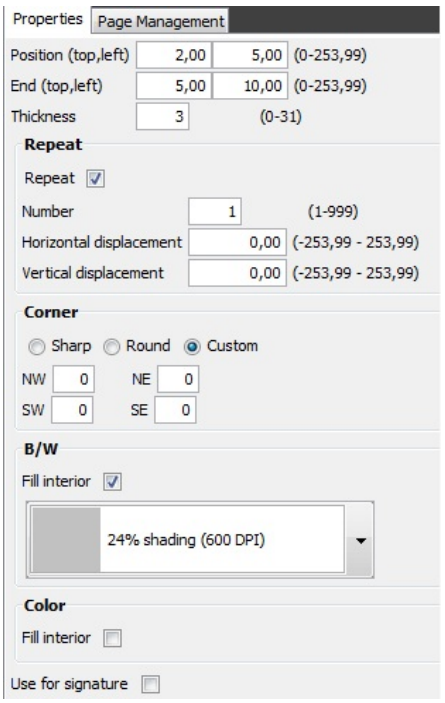


Repeat

The repeat option can be used for inserting multiple lines at once. Type in how many times the line should be repeated and how much you want to move the line for each repetition.

Frame

Inserts a Frame. The properties are:



Position The distance from the top and left of the paper to the top, left corner of the frame.

End The distance from the top and left of the paper to the bottom, right corner of the frame.

Repeat Refer to the description of the **Line** element on the previous page.

Corner Defines the shape of the corners:

- **Sharp** All corners are sharp.
- **Round** All corners are default round (radius is 24 pels)
- **Custom** Set the radius of each corner in each compass direction: NW, NE, SW,SE.

Radius = 0 is a sharp corner.
Radius = 24 is a 'normal' round corner.

B/W Fill interior and **Color Fill interior**:

Sets the filling of the frame in black/white and color output. For a nice smooth shading a 600 dpi filling is recommended. For color PDF you will get the best result if you set the color filling to 100% black and combine it with a grey color with the **Ink** element. If you set the filling to **100% white** shading you can delete elements, that was previously inserted and make the area white. Remember to select the same filling for both black/white as for color to get the same result. Refer to the Ink element on page 619 for details.

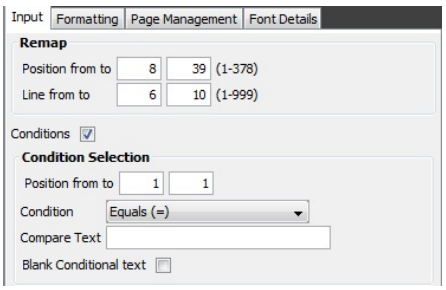
Use for signature

A frame can specify the area designated for a signature to be added with a signpad. If multiple frames are marked for signature, then the last signature will be used (as default). Refer to **Appendix V** on page 685 for details of the Signpad module.

Tabulator

A "tabulator" performs formatting and horizontal movement of an interval of lines and positions in the spooled file. A related element is the Remap Window (page 611). You should use the tabulator if you want to delete some spooled file text: Just tabulate the text and place it outside the page in the result view. Mark first the area of text on the input view, that you want to tabulate and then mark the place in the result view where it should be printed.

Under the Input tab you will find this:



Position The positions in the spooled file to tabulate.

Line The lines in the spooled file to tabulate.

Conditions

If you activate this, then each spooled file line in the marked line interval is tested according to the condition and only lines fitting the condition are tabulated.

Position The positions of each line to be used for the comparison.

Condition (Comparing the selected positions with the **compare text** below). Possible conditions are:

- **>** Greater than a number entered in the following field. Comparison is text/char based.
- **=** Equal to a text string (case sensitive)
- **<** Less than a text entered in the following field. Comparison is text/char based.
- **N** Not equal to a text string (case sensitive) or a number.

A Acceptable characters. All the characters must be one of the characters in the **compare text** below.

U Unacceptable characters. Opposite to A-Acceptable characters i.e. one or more of characters are not found in the list in the compare text.

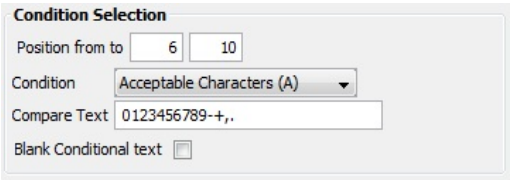
Compare text The text with which the spooled file contents is compared to.

Blank Conditional text

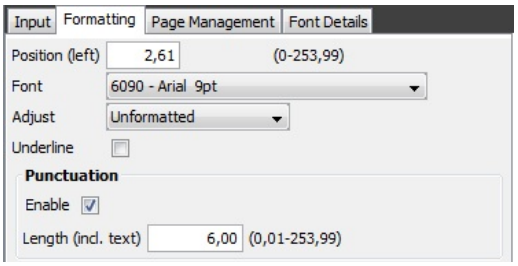
If activated the positions used for the condition are removed from the spooled file i.e. they are not printed. Any trailing blanks are trimmed off, so insert blanks e.g. a the first char if you need to use blanks/spaces for the A and U comparisons.

Example using condition A=Acceptable characters

If you want the tabulator only to work for lines, that contains a number, then you can use this condition:



Under the **formatting tab** you define the position and layout of the tabulated text:



Position The position in the output from the left edge of the paper - or reference position for other adjustments.

Font The font to use for the tabulated text.

Adjust The adjustment of each line. Possible values are:

Unformatted. The area is printed without any changes to formatting, and spaces.

Left.. Leading spaces in each text lines are removed, causing each line to be left adjusted at the position indicated above.

Center. Trailing and leading spaces within the tabulator area are first removed, then each line are centred.

Right. Trailing spaces are removed, and then each are right adjusted at the position indicated above.

WARNING

*Adjustment cannot place the adjusted text to the left of the left edge of the paper in **PCL** output (negative positioning is not possible). So if you try to e.g. right adjust a long text, that cannot fit in between the left edge of the paper and the specified position, the text is moved to the right to make room for all the text.*

Numeric. Right adjust for numeric values. The values are still nicely right aligned even if some should be negative (with a minus as the last character).

Barcode. Print succeeding spaces in barcode data. Indicates if the spaces in the coloumn interval succeeding the barcode data should be converted to barcode. This only apply to the barcodes 128 and 3of9. The barcodes will always be left-adjusted. (Normally succeeding spaces will be ignored.)

Underline:

Underlining of text in the tabulator (leading and trailing blanks are not underlined).

Punctuation and Punctuation Length:

If the last position of a tabulated line is a **period sign**, a line of punctuation will be printed. The punctuation will start after the last printable character, and continue to the **Punctuation length**. Only Adjustment values **Unformatted** and **Left** can be combined with the punctuation. No punctuation will be made if other values are used, if no period sign is found or if the text exceeds the punctuation length.

If you are unable to mark a new area in the input view, when trying to change the tabulator: Please refer to the 'Lock spooled file selection' section on page 592 for help.

WARNING

If two or more overlapping tabulators are defined the first defined will take the text it needs and leave blank positions in the relevant place for the next tabulator. ***A maximum of 200 tabulators per overlay can be defined. The limit of 200 includes any referenced suboverlays.*** *If you are using many conditioned tabulators you should consider to use the conditioned overlay instead.*

WARNING

Adjustment cannot place the adjusted text to the left of the left edge of the paper in ***PCL*** *output (negative positioning is not possible). So if you try to e.g. right adjust a long text, that cannot fit in between the left edge of the paper and the specified position the text is moved to the right to make room for all the text.*

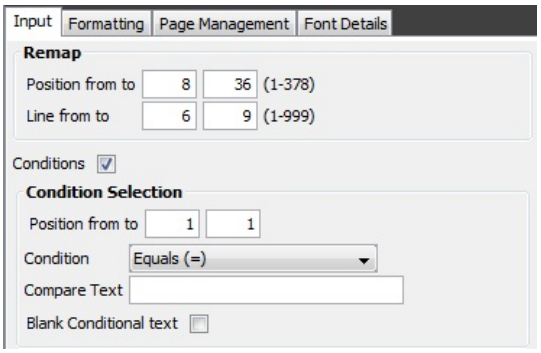
Remap window

Mark the window of text, that you want to remap in the input view and where to place it in the result view.

A maximum of **300 Remap Window lines** are allowed in one overlay. The limit of 300 includes any referenced suboverlays. Additional remap window lines are ignored. If this limitation is a problem you should use 'Conditional Element' lines instead, that is more efficient and easier to maintain. Contact your local InterForm400 support to get more information of how to do that if in doubt.

If you want to remove spooled file data, then you should use the tabulator. If you use the remap window the data will still be searchable in the PDF output - even tough it is not directly visable.

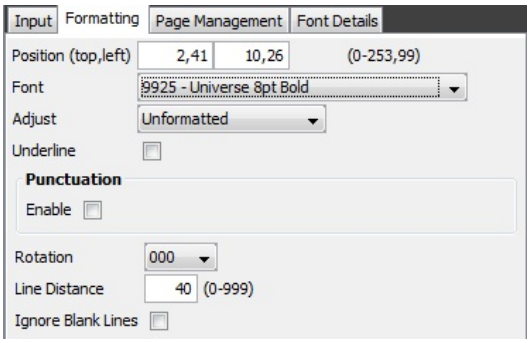
The properties are:



Remap The spooled file positions and lines, that you want to remap/reposition.

Conditions Refer to the description for the tabulator above.

The **Formatting tab** has these options:



Some features are covered for the tabulator element above. The others are:

Rotation The selected text is rotated. Please refer to the note in the text element on page 605 about rotation.

Line Distance The height of each spooled file line counted in pels. (40 pels equals 6 lines per inch). The remap window will advance this distance for each spooled file line.

Ignore blank lines
The remapped window of text is moved together so that any blank lines (and lines without a valid condition) are ignored.

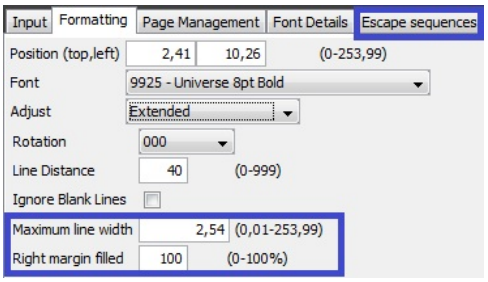
☺ **TIP** ☺

If you are unable to mark a new area in the input view, when trying to change the remap window element: Please refer to the 'Lock spooled file selection' section on page 592 *for help.*

Adjust=Extended
(Aligns both left and right margins). This function enables changes to the number of letters per line, based on the font size and the **max. line width** of the justification. Distances between words are automatically adjusted. Extended adjustment is not supported for fixed fonts like e.g. courier.

Use this option to e.g. change the line breaks dynamically, but setting a maximum width and letting InterForm400 decide when to do line breaks.

If you select **Adjust=Extended**, then two extra options are displayed and an **Escape Sequence** tab is available:



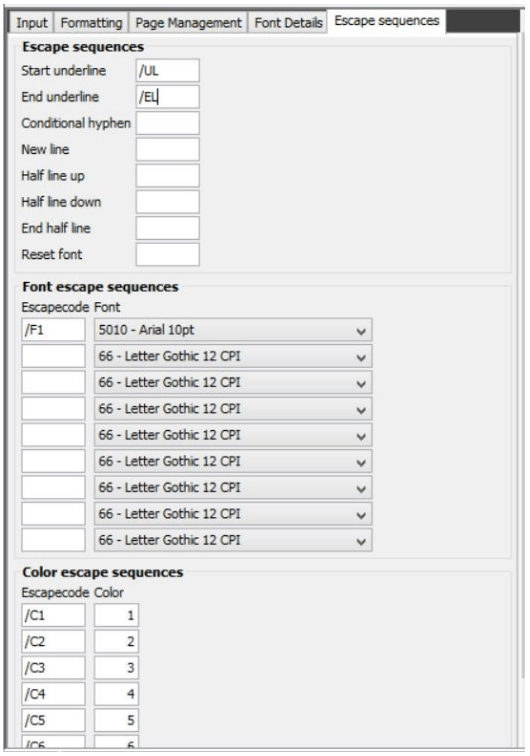
Maximum line width

How wide the text is allowed to be. InterForm400 will try to use the full width and rearrange spooled file words.

Right margin filled

Defines when a text line should not be justified. This is based on the percentage of text characters versus blank spaces left on the last line of a remapped paragraph.(0-100%)

The escape sequence tab makes it possible to let the spooled file trigger formatting and font selection in the middle of the text:
Escape sequences are not supported for Label printers (ZPL/IDP/IPL).



With the setup above, then this will happen with the remapped text:

If the remapped text e.g. contains the text '/UL', then the following text will be underlined until the text '/EL' is found.

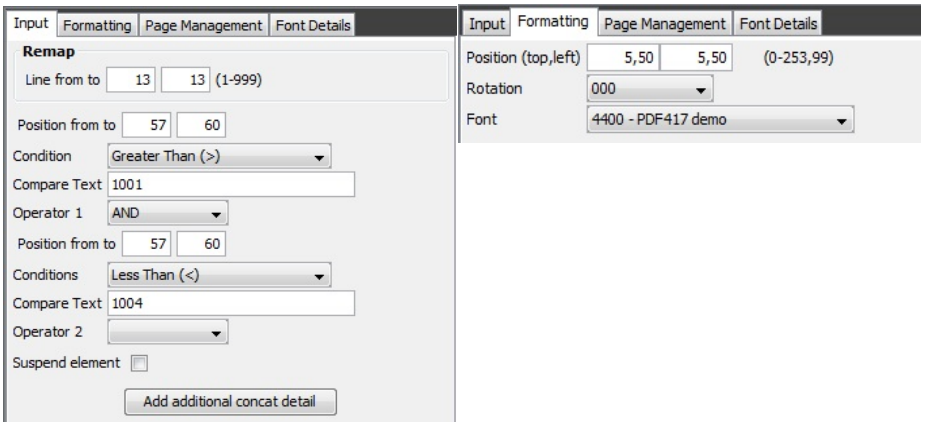
If /F1 is found in the spooled file text, then the font will change into font number 5010, from /F1 and onwards.

/C1-/C6 will change the color of the text into the color numbers written above.

(See Appendix H, page 495 for more details).

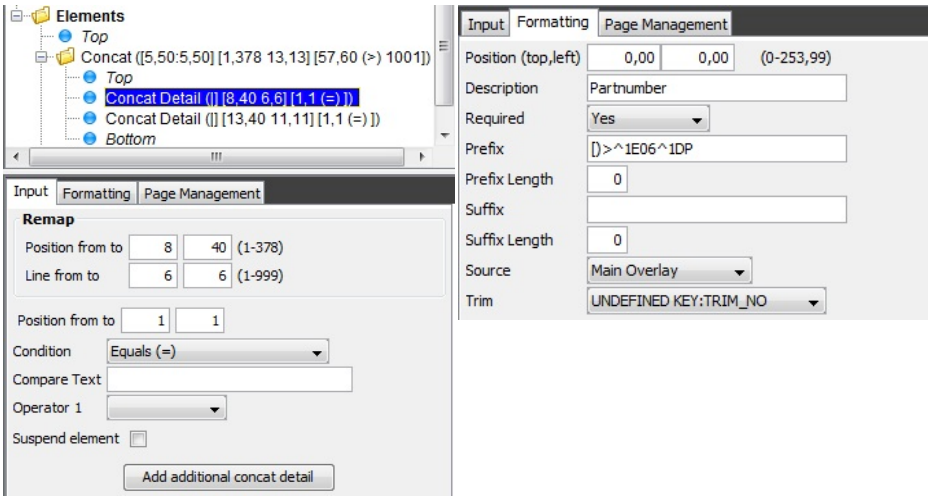
The Concat element

This element works like a normal text element, except that it is able to concat multiple texts from the spooled file with multiple fixed texts. This can e.g. be interesting if you want to concat multiple fields from the spooled file and combine them into a barcode. The element is defined like this:



You can set an optional condition like above (even up to 4 combined conditions) for the optional insert of the concat element. You can add the element to concat if you click the 'Add additional concat detail' icon. Under the Formatting tab you set the position and the font number (e.g. a barcode) to use.

Under the concat folder you will see the list of the concat detail lines defined for this concat element and if you select one of these detail lines you can edit it:



You can rearrange the sequence of the concat detail lines if you select a line and click the arrow up or down icons on the upper left.

The screen shot above indicates how you can use the concat combined with a PDF417 barcode definition to insert the special, unprintable ASCII characters required for e.g. the GM 1724 transport label. (The '^' is here defined as the

hex byte prefix in the PDF417 barcode.). Refer to the 2D barcode definition on page 383 for additional information.

The fields on the screen are these:

Suspend Suspend/deactivate the subsequence number.

Description For internal use/documentation. This is not included in the final output.

Required The field can be found by scanning the spooled file for a condition in the same line. The result might be, that the condition was not true for any line or the found text might be blank. Possible values for the Required field are:

- **Yes** If the found text is blank or a true condition is not found, then the complete concat element is ignored and not inserted in the merged result.
- **No** If the condition is not true for any of the selected lines or the found text in the spooled file is blank, then the complete detail line is not included in the concat element, but the concat element is still inserted.
- **Allow blank** If the Required field has the value, **Allow blank**, the concat detail is still included. If you want the blanks to be excluded (including only the prefix and suffix), then you can set the trim option to yes. With Allow blank you can build up a longer fixed part of the concat result e.g. for a long link in an output PDF file.

Prefix A fixed text to precede the variable text from the spooled file. If you set a length, that is longer than the length of the fixed text, then the text will be padded with blanks prior to the spooled file data.

Suffix Like Prefix above - except this is a fixed text added after the variable spooled file data.

Source The line numbers can either be the absolute spooled file number as seen by the **main overlay** or the relative line number if the concat element is inserted in a conditioned overlay (**Suboverlay**). A conditioned overlay always counts the spooled file line number from the spooled file line, that triggered the conditioned overlay - so if e.g. triggered by a condition in line 43, then line 43 is known in the conditioned overlay as line 1.

Trim Sets the trim option for the spooled file data, that you have selected:

- **No** No trim is done. All leading and trailing blanks are included.
- **Yes** Both leading and trailing blanks are trimmed and excluded from the spooled file data.
- **Left** Leading blanks are removed from the splf data.
- **Right** Trailing blanks are removed from the splf data.
- **Leading zeroes** Any leading or trailing blanks are converted into leading zeroes.

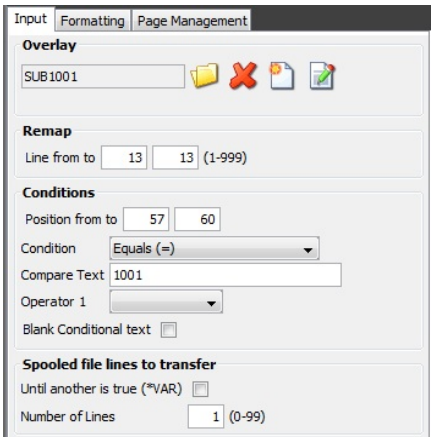
Line The line or lines from where the spooled file data is be searched or just copied like above.

Position The spooled file positions to include in the concat subsequence number.

Condition Refer to the Conditional element below for information of how conditions works.

Conditional Element

Use this element to insert another overlay if a condition is true. The other overlay can 'receive' spooled file lines from where the Mark the area for the condition in the input view: Mark out the **line interval** while holding down the **left mouse key** and mark out the **position interval** for the condition while holding down the **right mouse key**. Properties of this element are:



You see these icons next to the conditioned suboverlay:

Insert an existing overlay as the overlay to call for this condition

Clear the reference to the suboverlay - does not delete the actual suboverlay.

Creates a new suboverlay to be called.

When you have selected a conditioned overlay you can edit it by pressing this icon. When remapping spooled file contents in a conditioned overlay you should use the 'Conditional view' instead of 'Input view'. When finished editing this return to the main overlay by selecting 'File' and 'Close current overlay' -
or by pressing this icon in the toolbar:

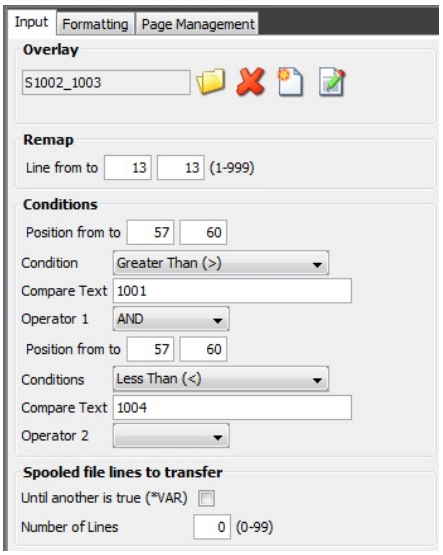
The options are:

Remap The line interval to scan for the condition.

Condition

Refer to the tabulator on page **609** for details. If you select 'or' or 'and' for operator 1, then you can combine multiple conditions (up to 4) for the same spooled file line. You can e.g. do like to so include the

conditioned overlay for numbers that are larger than 1001 and lower than 1004:



You can use 3 operators to include up to 4 conditions for a single element.

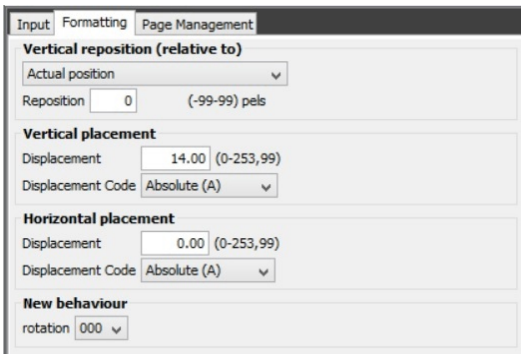
Blank conditional text

If activated the characters used for the condition will be blanked out - when the condition is true. The characters are still available in the conditioned overlay if any lines are transferred.

Note the '**Remap condition parameters'** in the bottom. '**Until another is true (*VAR)**' is default disabled and the number of spooled files lines transferred to the conditioned overlay is **0**.
If you specify a number, then that is the number of spooled file lines, that are transferred to the other overlay, starting from the line where the condition was true.

If '**Until another is true (*VAR)**' is enabled, then all spooled file lines from the line with the true condition are transferred to the suboverlay - until another (or this) conditioned element is true.

Notice the 'Formatting' tab. With this you can decide where the conditioned overlay should be placed:



The **vertical reposition** can move this overlay and the subsequent spooled file lines up or down:
Actual position:
This will move the rest of the spooled file up (negative value) or down (positive value). See page 123 for an example which uses this option.

Last non blank input line:
Use this repositioning e.g. in order to close the gap of blank lines on the original spooled file. (Place the suboverlay relatively to the last non blank line.)
Reposition after execute of suboverlay:
The main benefit from this option is that if you are using an extended remap window in the suboverlay, then you can make the height of the suboverlay adaptive - to fit the text remapped lowest on the page, but this option can be used whenever the height of the suboverlay is uncertain.

The **vertical and horizontal placement** decides if the overlay should be placed in a fixed position (absolute) or relative (+/-) to where the condition is true.
With a vertical displacement of '+' you can push the suboverlay downwards and with '-' the suboverlay is moved upwards relatively to the line(s) where the condition is true.
You should always have the vertical or the horizontal position (or both) set to Absolute(A), if both are relative (+ or -) then you will see a wrong result in PDF - if you are not using the new behaviour option.

With the **New behaviour option the vertical and horizontal placement** always refer to the default (global) position of the referenced texts. Here you can also reuse the same conditioned overlay in various positions by repositioning it in the main overlay.

An example showing how to use the conditional element is found on page **622**

Rotation of conditioned overlays:
The rotation of a conditioned overlay depends on, if you are using the New behaviour option on the main overlay:
New behaviour enabled: The rotation of a conditioned overlay can be seen as a relative rotation - the rotation of the conditioned overlay is added to the rotation of the main overlay.
New behaviour disabled: The rotation of the conditioned overlay is ignored and only the rotation of the main overlay is used.

Rotation:
Sets the (additional) rotation of the conditioned overlay - available for new behaviour only. This sets the rotation (anti clockwise) of the conditioned overlay - relative to the main overlay.

☺ **TIP** ☺
It is not possible to use more than a single level of conditioned overlays, i.e. you cannot call a conditioned overlay within another conditioned overlay. If you want to combine conditions you can e.g. use the option to combine up to 4 conditions for a conditioned overlay, use conditions on remaps/tabulators and/or use an overlay selector.

☺ **TIP** ☺
You can select an element in the element list (that has been inserted via either a conditioned or unconditioned suboverlay) by pressing the <Ctrl> key while clicking the element in the result view.

Suboverlay.

Inserts an unconditioned suboverlay.
If you are printing general company info in several overlays, i.e. the company letter head, it is convenient to place this info in a separate overlay. With this

function you can place such information in an overlay that can be called as a sub-overlay from any other overlays. Any general setting of the suboverlay are ignored.

The rotation set in the header of a suboverlay is ignored, when referenced from another (main) overlay. The rotation is only used, if you merge directly with this overlay.

Ink

Use this element to change the ink with which you are 'writing'. You can set both a shade of grey (from white to black) and a color for the color output. The ink element has effect until the next ink is found. Remember to set both black/white ink and a color ink if needed. The best shades of grey in color PDF is created by creating your own grey color and combine that with a 100% black. Use the 100% white shading option to e.g. print white text inside a black frame.

You can define your own colors as described on page 416.

PCL File

Inserts a PCL file in the design. A PCL file is generated by printing to file in e.g. windows while using a generic PCL5 or PCL5e printer driver. Note: PCL files are not displayed in the graphical designer - only as a red frame. You can press this icon:

-to view the correct result in SwiftView.

See page 413 for more information about PCL files.

Inserts a HP-GL/2 file in the design. HP-GL/2 files are not displayed in the graphical designer. Normally you should consider the PCL file above as a better alternative. Refer to page 97 for more information.

Comment

Inserts a comment. Comments are shown in blue in the graphical designer, but are not visible in the result. Refer to page **?** for more information.

When you have finished the design you need to upload/save onto the InterForm400 databases on your System i. You can do that in these manners:

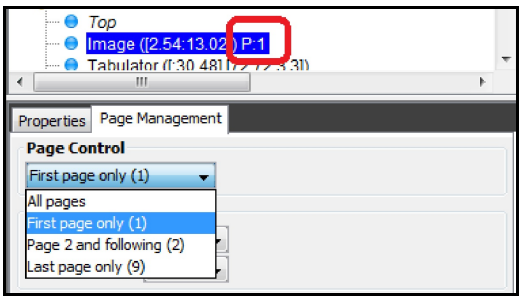
Save the current overlay

Select this icon to close the current overlay. The designer will then ask if you want to save the current design (you are not offered the possibility to save as a different name). This is the same as 'File' and 'Close current overlay'.

- Or select 'File' and 'Save'/ 'Save As'.

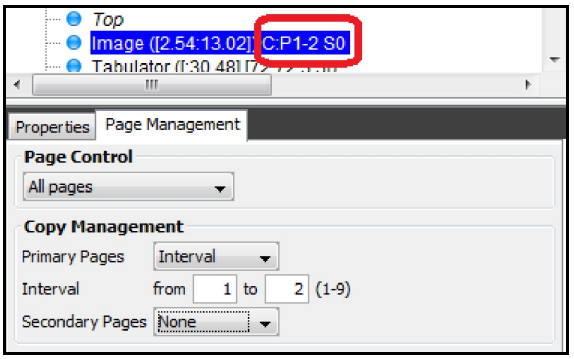
Page Management

With the Page Management tab of the design element you can decide, if you want to insert the specific element on certain pages. With the **Page Control** option you can chose to use the element on all the pages of the spooled file, on only the first page, from page 2 or only the last page:

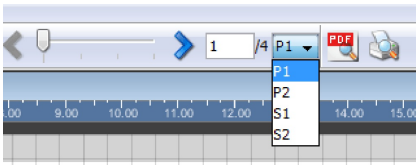


On the element list the Page Control setting is viewed on the right as:
P:1 This element is included only the first page (Page control=1).
P:2 This element is included from page 2 and onwards (Page control=2).
P:9 This element is included on the last page only (Page control=9)

If you have activated **Copy Management** you can also chose to include the element on certain copies:



You can insert the element on all copies, an interval of copies or none. You can state that for both Primary and Secondary merges. You specify what kind of merge you want on the merge command. When you have activated copy management you can view the various copies by selecting this icon on the upper right:

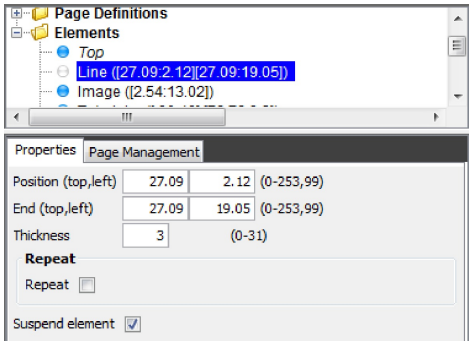


On the element list you can see if an element is conditioned on the copy management copy on the right:

The indication starts with **C:** followed by the Primary copies (if not all). **P1-2** indicates e.g. that the element is included on Primary copy 1 and 2. **P0** indicates, that the element is not included on any of the primary copies. The same indication follows for the Secondary copies. The element above is included on primary copies 1 and 2 and none of the secondary copies.

Suspend design elements

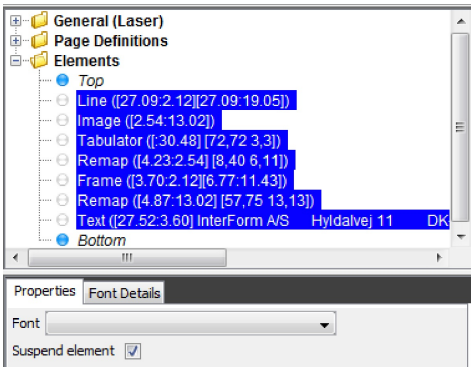
All design elements can be suspended by activating the suspend option in the bottom of the leftmost tab:



This will disable the element, so that it will not appear in the output. This can e.g. be used for debugging purposes or if you temporarily wants to remove/disable an element.

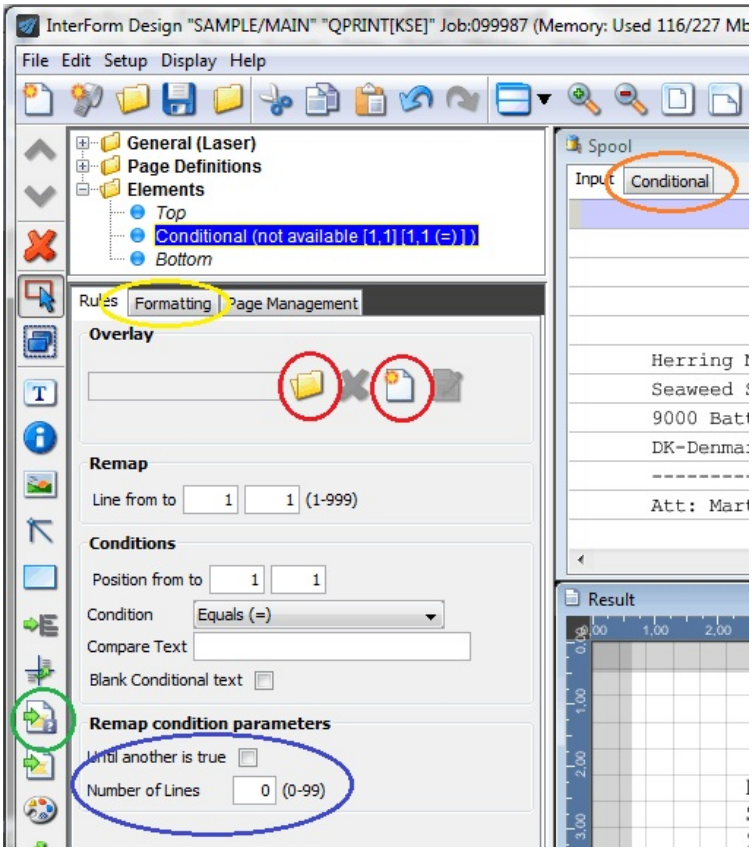
The suspended elements are marked with a white circle as shown above - instead of the normal blue one.

You can also suspend and unsuspend multiple element by selecting them (as explained on page 624) and then activate/deactivate the suspend option for all:



How to work with conditioned overlays in the Designer

When working with conditioned overlays with the graphical designer, you can actually do advanced changes very easily:



You insert a reference to a conditioned overlay, but first clicking this icon on the left: 
(Marked with a green circle above).

Next you decide how to insert how the conditioned overlay is to be placed (relatively or absolute) via the 'Formatting' tab (marked in a yellow circle). Here you can also move the complete conditioned overlay up or down (with with add/subtract and a vertical distance to use).

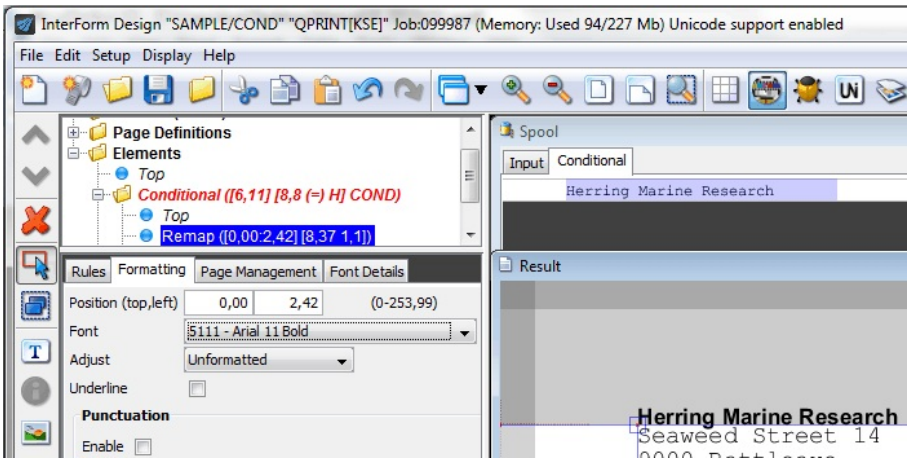
If you want to transfer spooled file data to the conditioned overlay, you need to either activate the 'Until another is true' (same as *VAR in the green screen) or state a 'Number of Lines' to remap - both options are marked with the blue circle above.

You also need to select or create a conditioned overlay. This is done by clicking either of the icons marked with red circles above
(either this:  - or this: )

To mark out the condition for the overlay you use the mouse and hold down **the left mouse key to mark out the lines** to search for the condition. Hold down the **right mouse key to drag over the positions** to compare with the text above.

Now you can open the conditioned overlay for edit with the icon: 

If you now click the 'Conditional' - marked with an orange circle above, you can now remap or tabulate spooled file data in the normal manner:



You may notice, that the top of the Result view sometimes turns grey when you start editing the conditioned overlay, the reason is, that the grey area is unreachable as the bottom of the grey area is actually the top of the conditioned overlay (0 from the top). If you want to insert something higher in the conditioned overlay, then you will need to move the complete conditioned overlay upwards via the 'Formatting' tab shown on the previous image.

Also notice that the conditioned overlay is written in bold, red and italic, when it is open for edit. When you are done editing the overlay you click this icon:
(Close overlay)

- or you select 'File' and 'Close overlay', and you will return to editing the main overlay.

Local save in the designer

If you lose the contact with the System i, you will get the message 'Lost connection to host' and the designer will end. But do not worry: A backup of your overlay is on your PC and you reload that design when you restart the designer (after regaining contact to the System i). In that case the designer will start up with the message 'Found previous unsaved overlay'.

Movement of elements in the result view

When you want to move an element you can do either of these things:

- Move the mouse pointer to the element in the result view. The element lights up in green. Click left or right mouse button to select the element. Now you can drag (by holding the button down) the element to the new position. Note, that the element snaps to the grid making it easy to align more elements

- Find the element on the list on the right and type in the new position in inches and pels.

- Mark an element with the mouse and now you can use the arrow keys on the keyboard to move the element. The element will move 10 pels (1/24 of an inch) each time you press an arrow key. Combine the arrow keys with <Ctrl> to move 80 pels (1/3 of an inch) at a time or combine the arrow keys with <Shift> to move the elements just 1 pel at a time. Note, that this movement is independent of the grid.

WARNING

If you move a group while the grid is active all the elements of the group will snap to the grid.

Grouping and ungrouping elements

You can group several elements in order to reposition them all in one process. Note, that you can only create one, current group. You can group elements together in the following manners:

- By holding down the <Ctrl> key and marking each element in the element listing to the left of the screen.
- By holding down the <Ctrl> key and marking each element in the result window.
- By clicking this icon: 

  - then hold down the left mouse button and drag a red frame around the elements you want to select. After you have selected elements in this manner you can still hold down the <Ctrl> key and mark additional elements as described above.

While you have grouped several elements you can change the font for all the elements at one time by selecting the common font in the lower left corner of the designer.

You can ungroup the elements in these manners:

- By holding down the <Ctrl> key and clicking on an element you will remove this element from the group.
- By clicking anywhere in the result window (without holding down <Ctrl>) outside an element then all the elements will be removed from the group.

Troubleshooting the designer

Problem: Error message: 'Unable to load color model'

When you start the InterForm400 designer you might hit the message 'unable to load color model'. This indicates a problem with the DDM server on the AS/400. Here are some hints for making that run:

First run option **75. Prepare server to support InterForm Designer** to make sure that all necessary servers are running.

Execute the command: DSPNETA. Find the text/parameter 'DDM request access'. This should be *OBJAUT, it can also refer to a user program, but if it is *REJECT the DDM server will not work. Change the value with:
CHGNETA DDMACC(*OBJAUT)

Try ending the *DDM server with this command: ENDTCPSVR SERVER(*DDM), then restart the *DDM server with STRTCPSVR SERVER(*DDM). Now run this command: WRKSBMJOB SBMFROM(*JOB) and it should show you a job called 'QRWTLSTN'. Start the designer and look in the joblog of this job for more information.

Open up **System i Navigator** and select 'Network/Servers/TCP/IP'. Double click on 'DDM' to see the properties for this server. Look at the 'Subsystems' folder. Here you might have defined special rules for selecting subsystem, that prevent the DDM server from running. If you select 'Use server defaults' the DDM server should run OK.

If you access the AS/400 through a firewall be sure, that these port numbers can go through:

Host Server Port

*CENTRAL	8470
*DATABASE	8471
*DTAQ	8472
*FILE	8473
*NETPRT	8474
*RMTCMD	8475
*SIGNON	8476
*SVRMAP	449

TCP-server	**Port:**
*DDM	446

That means, that the following ports must be opened (Not blocked by any firewall):
446, 449, 8470-8476.

Finally you can test the connection to the servers by running the CWBPING command in a DOS session on the PC. Try running this command followed by the IP-address of the iSeries server and then it should report a successful connection for all servers - especially for DDM.

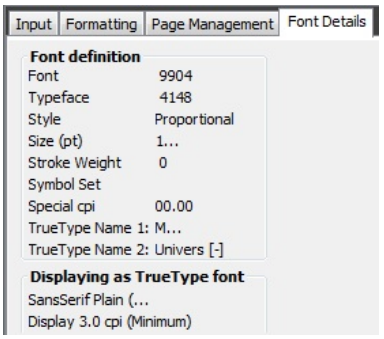
Please contact your local support if these hints still does not fix the problem.

BTW: Remember to start the servers as a part of the IPL e.g. with these commands in the startup program:

```
STRHOSTSVR SERVER(*ALL)
MONMSG     CPF0000
STRTCPSVR  SERVER(*DDM)
MONMSG     CPF0000
```

Problem: Wrong font and/or missing characters in the result view

If you have the problem in the graphical designer, that the characters are not displayed correctly in the result view, then you should first click a remap window, tabulator or text element, which is having this problem. Then click the 'Font details' tab:



In the example above the font has been defined as a 'univers' font, but still the designer has chosen to display the text in the font 'SansSerif Plain' as mentioned in the bottom under 'Displaying as True Type font'. This is normally not a problem for the univers font as the Sans Serif Plain is so very close to the univers font, that you probably cannot see the difference.

If the designer has chosen a wrong/different font (for 'Displaying as True Type font'), than expected then you should install a True Type Font (copy it to C:\windows\fonts) and restart the designer to get the right result.

One example is, that if you have installed the univers.ttf in InterForm400 (and linked it in autodownload), but not installed it on the PC, then the designer will try to link it with a similar TTF like e.g. 'Universalmath' or even 'Universal Fruit cake' and displaying squares in the result view. To solve this you need to either install the correct TTF (univers) on the PC (by copying it

into C:\windows\fonts), which is to be preferred or alternatively you can delete the wrongly selected TTF from C:\windows\fonts if you are 100% sure, that you can live without it.

Problem: Spooled file data is not displayed correctly

If you see a code page problem when looking at the spooled file data in the designer i.e. that the non-western characters are not displayed correctly, then you need to make sure, what code page the designer is expecting the spooled file to be in. Very often the spooled file attributes does not tell that, so you can specifically tell the designer what code page the spooled file is in. You do that on your user profile settings in InterForm400. Select this:
80. Administering InterForm 400
1. Work with InterForm 400 users
Now you use '2=Change' for the user profile you use when starting the designer:

```
         Change InterForm user                                        APF102D

User profile . . . . . :   KSE            Kim S Egekjær

Language of user . . . . .  EN             DE, DK, EN, ES, FR, PT,
                                           blank = system default

Users output queue . . . .  AFC_INPUT1     blank = system default
  Library  . . . . . . . .    APF3812

Printer type . . . . . .  HP4_____         HP4, HP4D, HP4_PJL, HP4D_PJL,
                                           HP5C, HP4500, HP4500D,
                                           ZEBRA203, ZEBRA300, QLZPL203,
                                           IPL203, IPL300

Designer options:
Code page  . . . . . .    870              blank = system default
  When to use code page  .  *SPLFATR       *SPLFATR, *ALWAYS

DBCS code page . . . . .  935              blank = system default
  When to use code page  .  *SPLFATR       *SPLFATR, *ALWAYS

F3=Exit   F12=Cancel
```

Above I have set the spooled file code page to be 870 (eastern europe) unless the spooled file attribute contains another codepage. For any DBCS spooled files the designer will handle the spooled file as it is codepage 935 unless it contains a specific code page.

Appendix P - Import/Export in details

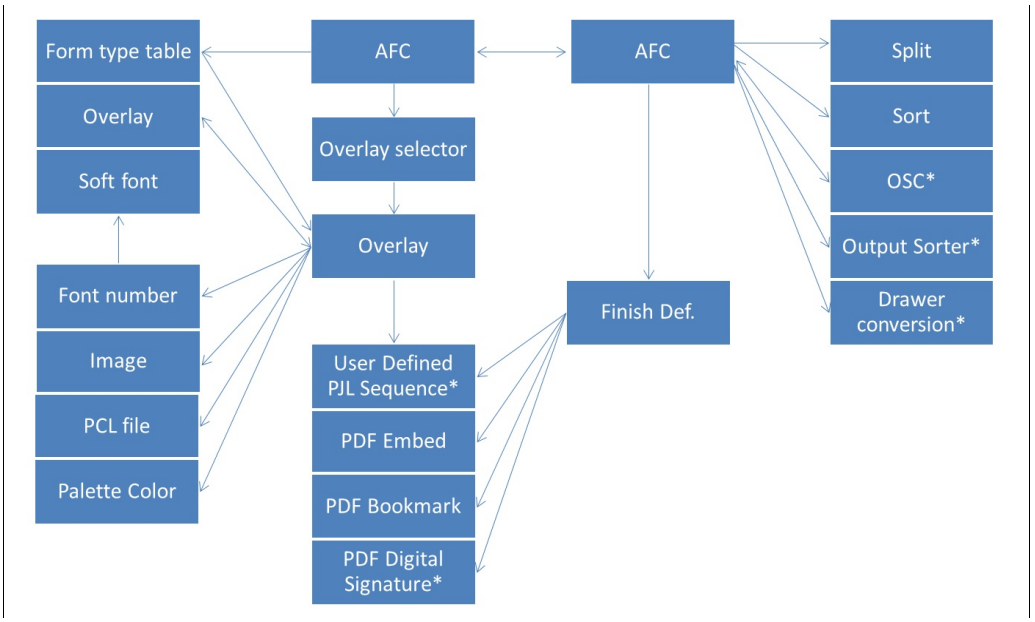
This appendix describes the use of export and import in details. For an introduction to the export/import feature you should refer to the description starting a page 440.

The appendix contains this:

- An overview of all possible cross references - to help you to remember what to export/import.
- Explaination of what will be exported when selecting **3. Copy resources used in already copied overlays** - and what will not be exported.
- Explaination of option **4. Copy auto download defs and soft font members for all copied fonts**
- Warnings/hints during import.
- What will be updated if you rename resources in the export or import library.
- A list of the resources, that cannot be exported/imported.
- The Multiple Export Libraries feature (MEL) - for concurrent export.
- The Import InterForm400 Resources (IMPAPFRSC) command.

Overview of possible cross references

This is an overview of the cross references in InterForm400:



(Image with cross references: * indicates a resource, that cannot be exported/imported)

The image above illustrates the InterForm400 resources and how they refer to each other. From the image you can e.g. see that AFC definitions can refer to other AFC definitions as well as overlay selectors, finish definitions, split definitions, sort definitions, OSC (indirectly by moving spooled files), indirectly to output sorter definitions and printer drawer conversions.

An overlay selector refers to overlays, which can refer to other overlays as well as fonts, images, PCL files, palette colors and user defined PJL sequences (for stapling).

When you want to export a setup you can refer to the image above to be sure, that you are exporting/importing all the necessary resources. Resources and objects, that cannot be exported are listed on page 633.

3. Copy resources used in already copied overlays

During the export procedure you can use option **3. Copy resources used in already copied overlays** after you have exported one or more overlays. This will export any resource referred to by the overlays:

Font numbers
Images
Palette colors
PCL files
Overlays

Overlays referred to by the already exported overlays as either suboverlays or conditioned overlays are also exported with this feature. Any of the resources above, that are referenced in these suboverlays or conditioned overlays are also exported.

Any soft fonts linked with the font numbers and auto download setup are NOT exported with this feature. You will need e.g. to run option **4. Copy auto download defs and soft font members for all copied fonts** to do that.

4. Copy auto download defs and soft font members for all copied fonts

After running option **3. Copy resources used in already copied overlays** it usually a very good idea to run option **4. Copy auto download defs and soft font members for all copied fonts**. With this any referred soft fonts and referenced auto download setup are also copied for export.

The auto download and soft fonts for PCL are only copied for export if they are used in a printer group, which includes the output queue ***ALLPCL**, which refers to all PCL output. (Any auto download for other PCL printer groups cannot be exported).

Warnings/hints during import.

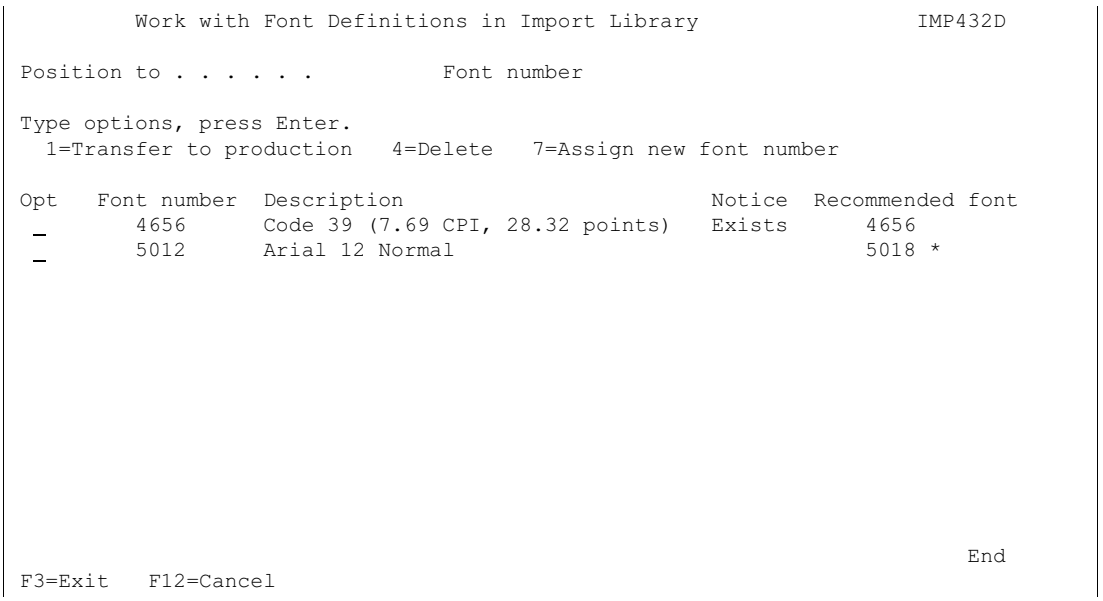
When you are importing resources you will be warned if the resources already exists. Via option **4. Transfer resources to production library** you may see something like this:

```
         Confirm transfer of all resources to production library      IMP820D

Press F10 to transfer all resources to production.
Press F3 or F12 to cancel.

Resource               Type        Notice
DEMOIMAGE              *COLORIMG   Exists
4656                   *FONT       Exists
5012                   *FONT
ACME                   *IMAGE      Exists
DEMOIMAGE              *IMAGE      Exists
SAMPLE/CUST1001        *OVERLAY    Exists
SAMPLE/FOOTER          *OVERLAY    Exists
SAMPLE/MAIN            *OVERLAY    Exists









                                                                        End
F3=Exit   F10=Transfer all resources to production   F12=Cancel
```

The text ‘Exists’ on the right means, that the resource already exists in the production and that the import will overwrite the existing object if you go on with the import by pressing F10. If you regret the import with F3 or F12 you can do a selective import instead.

With option **3. Work with resources in import library** you can do a selective import and here you might get even more detailed information when importing font numbers:

```
         Work with Font Definitions in Import Library                IMP432D

Position to . . . . . .          Font number

Type options, press Enter.
  1=Transfer to production   4=Delete   7=Assign new font number

Opt   Font number  Description                         Notice  Recommended font
 _       4656      Code 39 (7.69 CPI, 28.32 points)   Exists      4656
 _       5012      Arial 12 Normal                                5018 *
```



```
                                                                        End
F3=Exit   F12=Cancel
```

When importing like this you might even get a suggestion for a different font like above. Here the font 5012 is being imported. There is no such font number in production, but yet InterForm400 informs you, that the font you are installing is identical to the font 5018, which is already in production - so you should consider to use that instead.

If you have not copied any of the other objects into production, you can now rename the font number with option **7=Assign new font number** where some references in the import library to the font number will also be changed. Renaming resources in the import or export library in this manner is covered below.

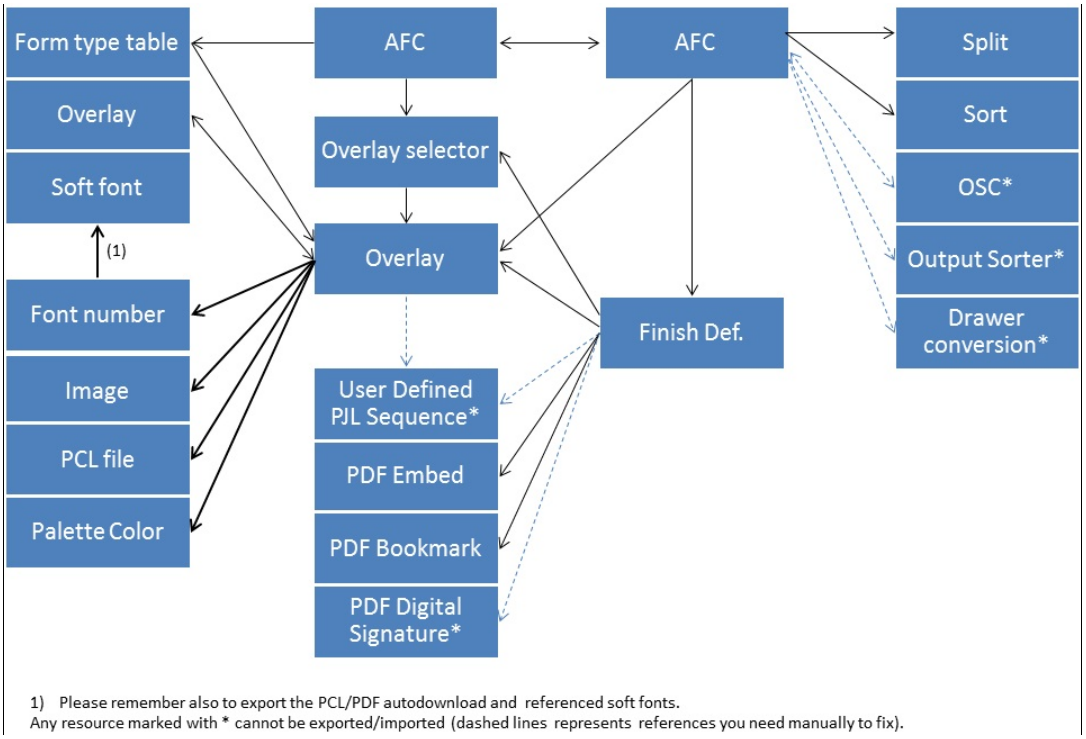
Renaming resources in the export or import library

It is possible to rename objects/resources while exporting and importing. It is important to do that at the right time.

For exports you can rename the resources (via option **3. Work with resources in export library**) after you have copied all the required resources into the export library and prior to running option **4. Work with distributions**, where the export file is packed. That is, any update of cross references are done for the resources, that has already been copied for export.

For imports you can rename the resources (via option **3. Work with resources in import library**) after you have run option **2. Receive distribution into import library** and prior to moving any resources into production via either option **3. Work with resources in import library** or **4. Transfer resources to production library**.

Below you see an image indicating what cross references, that are updated if you chose to rename a resource in the export of import library like described above:



Check list when renaming resources

- **If you have renamed an output in AFC**:
  If the output queue referenced by name in any of these functions in AFC:
  1 = Merge with overlay
  3 = Transform *AFPDS to *USERASCII
  4 = Copy Spooled File
  5 = Move Spooled File
  And this AFC queue is also inside the export/import library, then these lines are automatically updated to refer the new output queue.

  If a split definition is referring to the output queue by name, then you will need to update this reference manually.

  If you are using OSC (Output Schedule Control) to put spooled files on this queue, then you will need to update the OSC definitions.

  If you are moving or creating new spooled files on this output queue in a user program, then these will also need to refer to the new output queue. (Such programs can e.g. be called via function 8 in AFC or from a split definition).

- **Run the PRTXREF option before rename:**
  The cross reference list can help you to identify what resources are referring to the resource, that you intend to rename.

Resources that cannot be exported/imported

It is not all resources, that can be exported and imported. This may be quite important to notice if you e.g. want to move an installation from one machine to another or if you want to merge to InterForm400 installations into one.

These are the resources/settings, that cannot be exported/imported:

- The user output queue setting.
- The work with email senders list.
- Any referenced user programs.
- Configuration in general.
- The email log.
- ZPL downloaded resources in flash memories.
- Substitution ZEBRA internal fonts.
- The AFPDS copy spooled file CPI & LPI table.
- User setup.
- Digital certificates.
- User defined PJL sequences.
- Output sorter (output bin support).
- Drawer/tray conversion tables.
- Output Schedule Control (OSC) settings
- License code
- Auto download setup for PCL printer groups, that does not include the outq *ALLPCL

Multiple Export Libraries (MEL) feature

Description

By default InterForm 400 only allows you to export resources to a library named APFEXPORT. The purpose of the MEL feature is to allow developers to export resources to other libraries as well.

Activation/deactivation

To activate MEL you create a data area (of any type) named APFEXPORT in library APF3812. To deactivate MEL simply delete the data area APF3812/APFEXPORT.

Usage

When MEL is activated the F10=Select export library command key will be enabled and option **6.Delete export library APFEXPORT** will be removed from the InterForm 400 export menu.

At the InterForm400 export menu press F10 and overwrite APFEXPORT with another name (in the Export library field) to select another library to be used for export. All options at the InterForm400 export menu will now work on objects in this library.

Once you use option **1. Create export library with empty files** all necessary InterForm400 work files (and a data area named EXPORTLIB) will be created in the specified library. Note: If the library does not exist it will be created.

NOTE

IMPORTANT: Libraries created using option **1. Create export library with empty files** at the InterForm400 export menu ***CAN NOT*** be used after a release upgrade of InterForm 400.

The Import InterForm Ressources (IMPAPFRSC) command

The purpose of the IMPAPFRSC is to import InterForm 400 resources without any (or with very limited) user intervention.

The APF3812/IMPAPFRSC command:

```
                  Import InterForm resources (IMPAPFRSC)

Type choices, press Enter.

Save file  . . . . . . . . . . . SAVF          _________      Name
  Library  . . . . . . . . . . .                 *LIBL        Name, *LIBL, *CURLIB
Transfer to production . . . . . TFRPROD     *YES           *YES, *NO, *PROMPT
Display errors . . . . . . . . . DSPERR      *YES           *YES, *NO
Stream file name . . . . . . . . STMF        /APF3812Home/Work/EXPORT.INS
```

Restrictions:

This command can only run from an interactive job.

Parameters:

SAVF This is required. Specifies the qualified name of the save file to be used to restore the resources.The name of the save file can be qualified by one of the following library values:

***LIBL:** All libraries in the job's library list are searched until the first match is found.

***CURLIB:** The current library for the job is searched. If no library is specified as the current library for the job, the QGPL library is used.

Library-name:
Specify the name of the library to be searched.

Optional Parameters:

TFRPROD Specifies whether resources are transferred to production in InterForm400:

***YES:** Copy resources to the import library APFIMPORT and then transfer all resources to production (the InterForm400 system).

***PROMPT**: Copy resources to the import library APFIMPORT and then prompt the user whether to transfer all resources to production (the InterForm400 system).

***NO:** Only import resources to the import library APFIMPORT.

DSPERR Specifies whether any errors are displayed when running the IMPAPFRSC command:

***YES:** Display errors.

***NO:** Do not display errors.

Examples

Example 1: Copy all resources from the CUSTINVLIB/EXPORT.INV save file to the import library APFIMPORT and then transfer all resources to production (the InterForm400 system):

```
IMPAPFRSC SAVF(CUSTINVLIB/EXPORT.INV)
```

Example 2: Copy all resources from the CUSTINVLIB/EXPORT.INV save file to the import library APFIMPORT and then prompt the user whether to transfer all resources to production (the InterForm400 system):

```
IMPAPFRSC SAVF(CUSTINVLIB/EXPORT.INV) TFRPROD(*PROMPT)
```

Example 3: Copy all resources from the CUSTINVLIB/EXPORT.INV save file to the import library APFIMPORT and then transfer all resources to production (the InterForm400 system). In case of an error no display is shown:

```
IMPAPFRSC SAVF(CUSTINVLIB/EXPORT.INV) DSPERR(*NO)
```

Escape messages:

CPF9801 Object &2 in library &1 not found.
CPF9810 Library &1 not found.
APF9801 Error code &1 loading InterForm400 resources.

Possible error codes for message APF9801:

Error code	Description
IMP0001	The InterForm APFIMPORT library can not be used.
IMP0002	The InterForm import library APFIMPORT is in use.
IMP0003	The InterForm import library APFIMPDST already exists.
IMP0004	Error installing the InterForm import library APFIMPORT.
IMP0005	Error installing the InterForm import library APFIMPDST.
IMP0006	One or more InterForm resources was not transferred to production.

Sample scenario of using MEL and the IMPAPFRSC command

Two developer teams at the same System i are using InterForm400 to enhance printouts:

- TEAM A are designing a French invoice named INV003 in the file set FRINV for customer A
- TEAM B are designing a Danish credit note named CRE002 in the file set DKINV for customer B.

Then TEAM A and TEAM B both need to distribute their overlays to the customers:

- First TEAM A creates a library named TEAMA and export the overlay INV003 from file set FRINV.
- Then TEAM A creates a distribution (a save file) named EXPORT.INV in library TEAMA
- At the same time TEAM B creates a library named TEAMB and export the overlay CRE002 from file set DKINV and creates a distribution (a save file) named EXPORT.CRE in library TEAMB.

The TEAMA/EXPORT.INV save file can now be sent to customer A, and the TEAMB/EXPORT.CRE save file can now be sent to customer B.

Restoring the savefile TEAMA/EXPORT.INV at customer A's site and running the APFIMPRSC command will import the INV003 overlay to customer A's system.

Likewise:
Restoring the savefile TEAMB/EXPORT.CRE at customer B's site and running the APFIMPRSC command will import the CRE002 overlay to customer B's system.

The CL program to restore the overlay at customer A's site might look like this:

```
PGM
RSTLIB LIB(TEAMA) DEV(TAP01)
APF3812/IMPAPFRSC SAVF(TEAMA/EXPORT.INV)
ENDPGM
```

Appendix Q - Building functions into your menues

InterForm400 provides a wide range of extra commands and tool that can help you and your end users in your daily work. To see in what areas InterForm400 can help you it is a very good idea to go through the list of commands provided in InterForm400 in Appendix I on page 507.

Below a few tips are listed:

The alternative to WRKOUTQ (display merged spooled files)

The normal WRKOUTQ command is fine, but it has a few limitations when working with InterForm400. It can e.g. not display a merged spooled file. That is one of the reasons why InterForm400 is delivered with the alternative command: APF3812/APFWRKOUTQ.

The advantages of the APFWRKOUTQ command are:

- You can see how many pages a merged spooled file is.
- You can change the page range of a merged spooled file if you used a PJL printer. type for the merge in InterForm400.
- You can display merged spooled files via Swiftview.
- You can e-mail merged spooled files directly from the menu via option 1. (The senders e-mail address is grabbed from the SMTP information of the current user in the system directory and the overlay or overlay selector is found in the afc setup of the outq).

☺ TIP ☺

Please also notice, that InterForm400 contains an alternative to the WRKSPLF command, called APFWRKSPLF. This command is described on page 533.

One way to offer the advantages of this command can be to create a new library and create a duplicate of the APFWRKOUTQ command in it:

```
CRTLIB APFWRKOUTQ

CRTDUPOBJ OBJ(APFWRKOUTQ) FROMLIB(APF3812) OBJTYPE(*CMD)
TOLIB(APFWRKOUTQ) NEWOBJ(WRKOUTQ)
```

This WRKOUTQ command will temporarily not work during an upgrade of InterForm400 or if the apf3812 library does not exist. To avoid a problem you could remove or rename the extra WRKOUTQ command created above during an upgrade of InterForm400 or if you decide to remove InterForm400 - but why would you do that? ;-)

View the last created spooled file as either PCL or PDF file

The commands: APF3812/APF3812 and APF3812/MRGSPLFPDF can merge a spooled file with an overlay or overlay selector and present the result directly on the screen if you are running the commands in an interactive job.

If you e.g. have just created a screen shot in the same job, then you can refer to the last spooled file generated with the right spooled file name. To view such a spooled file directly you could build in either of these commands into your user menues:

```
APF3812/APF3812 KARTSET(myfilset) KLICHE(overlay) FILNVN(QPRINT)
SPLNBR(*LAST) PRTTYP(HP4) OUTPUT(*VIEWER)

APF3812/MRGSPLFPDF KARTSET(myfileset) KLICHE(overlay) FILNVN(QPRINT)
SPLNBR(*LAST) OUTTYPE(*VIEW)
```

Above we assume that the spooled file just generated is called QPRINT. We are using an overlay for the merge, but we could of course also have used an overlay selector.

Add dynamic functions to the Attention (Escape) key

InterForm400 can help you to add dynamic functions to your existing applications for which you do not even have the source code..

You can tell InterForm400 to inspect the contents of a 5250 screen and decide what to do depending on what is found. Then InterForm400 can also pick out information e.g. found in the line of the cursor, and use that as parameters in a function or command.

To do this you first define what functions you want to execute and when they should be activated. You define that via the command: APF3812/WRKSCNDFN:

```
         Work with screen definitions                                SCR100D

Position to . . . . . .   __________   Screen definition
  Required library  . .     __________

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display

Opt  Screen      Req.lib     Description
 _   COPY_SPLF   *NONE       Copy spooled file via SNDTCPSPLF from APFWRKOUTQ
 _   WRKACTJOB   *NONE       View Joblog as PDF from WRKACTJOB
 _   APFMENU     APF3812     Enter InterForm400 from Main if APF3812 is in LIBL









                                                                        End
F3=Exit   F5=Refresh   F6=Create   F11=View 2   F12=Cancel
```

If you press F6=Create you can add a new screen definition:

```
         Create screen definition                                SCR110D

Screen definition  . . . :   APFMENU
  Required library . . . :     APF3812

Description  . . . . . .   Enter InterForm400 from Main if APF3812 is in LIBL


Type comparisons, press Enter. Specify OR to start each new group.
Leave line and/or position blank to select cursor line/position.

AND/OR  Line  Pos.  Opr.  Compare value
         1    33    EQ    OS/400 Main Menu
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
___     ___   ___   __    ____________________________________________________
                                                                    More...
F3=Exit   F12=Cancel
```

Above we have defined:

Required library is APF3812. This means that this function will ONLY be considered if the APF3812 library is in the library list of the current job when <Escape> is pressed.

The compare value is ‘OS/400 Main Menu’. This means, that this function will be run ONLY if we press the <Escape> key when we are on the OS/400 Main Menu (This text must be found on the screen in line 1 starting in position 33).

We press <Page Down> to see this screen:

```
         Create screen definition                                SCR110D

Screen definition  . . . :   APFMENU
  Required library . . . :     APF3812

Command  . . . . . . . . .   APF3812/APFMENU KARTSET(&A)
____________________________________________________________________________
____________________________________________________________________________

Leave line and/or position blank to select cursor line/position.

        Line  Pos.  Len   Description
 &A      20    7    10    File set
 &B     ___   ___   ___   ____________________________________________________
 &C     ___   ___   ___   ____________________________________________________
 &D     ___   ___   ___   ____________________________________________________
 &E     ___   ___   ___   ____________________________________________________
 &F     ___   ___   ___   ____________________________________________________
 &G     ___   ___   ___   ____________________________________________________
 &H     ___   ___   ___   ____________________________________________________
 &I     ___   ___   ___   ____________________________________________________
                                                                      End
F3=Exit   F4=Prompt   F12=Cancel
```

Here we can take various information from the current screen and use it as parameters for a command. Above we take the text found in line 20 from position 7 (10 characters from this position) and use that as a parameter for the APF3812/APFMENU command in the file set parameter (KARTSET). This means that if you type a file set before you press <Escape> then this file set will be used when you enter InterForm400 with this command.

If we leave out the line and/or position above then the position of the cursor is used (when Escape was pressed).

Simular you can define that you want to view a joblog as a PDF file via this setup:

```
         Change screen definition                                    SCR110D

Screen definition  . . . :   WRKACTJOB
  Required library . . . :     *NONE

Description  . . . . . . .   View Joblog as PDF from WRKACTJOB


Type comparisons, press Enter. Specify OR to start each new group.
Leave line and/or position blank to select cursor line/position.

AND/OR  Line  Pos.  Opr.  Compare value
           1    30  EQ    Work with Active Jobs









                                                                      More...
F3=Exit   F12=Cancel
```

```
         Change screen definition                                    SCR110D

Screen definition  . . . :   WRKACTJOB
  Required library . . . :     *NONE

Command  . . . . . . . . .   CALL PGM(KSE/JOBLOGPDF) PARM(&A &B &C)



Leave line and/or position blank to select cursor line/position.

        Line  Pos.  Len   Description
 &A              9    10   JobName
 &B             22    10   User
 &C             34     6   JobNbr
 &D
 &E
 &F
 &G
 &H
 &I
                                                                       End
F3=Exit   F4=Prompt   F12=Cancel
```

The line numbers in the screen above are not filled out. So this means that the information is found in whatever line the cursor is in. Please note that the function requires that you first press F11 twice on WRKACTJOB so you can see the jobname, user and Job number like below:

```
                          Work with Active Jobs                    INTER03
                                                                10/02/09  15:21:42
 CPU %:      .0     Elapsed time:   00:00:00     Active jobs:   170
 Opt  Subsystem/Job  User        Number  Type  CPU %  Threads
 __   AUTO_FORM2     QSYS        221717  SBS      .0        1
 __     AFC_INPUT2   AFCOPER     221724  BCH      .0        1
 __     AMG2         AFCOPER     221725  BCH      .0        1
 __     DEMOIDX      AFCOPER     221743  BCH      .0        1
 __     IN_OUTQ04R   AFCOPER     221726  BCH      .0        1
 __     INFOR_TEST   AFCOPER     221727  BCH      .0        1
 __     INFORUM      AFCOPER     221728  BCH      .0        1
 __     LIFVOSS_IF   AFCOPER     221729  BCH      .0        1
 __     MU_PRTWT9I   AFCOPER     221730  BCH      .0        1
 __     PRT_APF25I   AFCOPER     221731  BCH      .0        1
 __     PRT_ZTESTI   AFCOPER     221732  BCH      .0        1
 __     USER2        AFCOPER     221733  BCH      .0        1
 __     USER2QUSRS   AFCOPER     221734  BCH      .0        1
 __     WOLFTEST     AFCOPER     221735  BCH      .0        1
 __     ZEBRA_KSE    AFCOPER     221736  BCH      .0        1
 __     ZZZZZZZZZZ   AFCOPER     221752  BCH      .0        1
                                                                More...
 ===> ____________________________________________________________________
 F21=Display instructions/keys
```

The source of the called program could be this:

```
/*-------------------------------------------------------------------*/
/*    This is an example of a program, that can be called from       */
/*    the APF3812/WRKSCNDFN command in InterForm400.                 */
/*                                                                   */
/*    This program is to display the joblog of a job marked out in   */
/*    WRKACTJOB. It will merge and display the joblog as a PDF file. */
/*                                                                   */
/*                                                                   */
/*-------------------------------------------------------------------*/

PGM          (&JOBNAME &USER &JOBNBR)

             DCL        &ALL         *CHAR  31
             DCL        &JOBNAME     *CHAR  10
             DCL        &USER        *CHAR  10
             DCL        &FILE        *CHAR  40
             DCL        &JOBNBRA     *CHAR   6
             DCL        &JOBNBR12    *CHAR  12
             DCL        VAR(&JOBNBR) TYPE(*DEC) LEN(15 5)

/* Convert the numeric jobnumber into 6 characters */
             CHGVAR     VAR(&JOBNBR12) VALUE(&JOBNBR)
             CHGVAR     VAR(&JOBNBRA) VALUE(%SST(&JOBNBR12 1 6))

/* First make sure that the joblog is not printed out.     */
             OVRPRTF    FILE(QPJOBLOG) OUTQ(APF3812/AFC_INPUT1) +
                          HOLD(*YES)

/* Now generate the joblog as a spooled file:              */
             DSPJOBLOG  JOB(&JOBNBRA/&USER/&JOBNAME) OUTPUT(*PRINT)
             MONMSG     MSGID(CPF0000) EXEC(DO)
             SNDUSRMSG  MSG('The job does not exist or is no longer +
                          active.') MSGTYPE(*INFO)
             GOTO       END
             ENDDO

/* Now merge the spooled file and view it:                 */
             APF3812/MRGSPLFPDF KARTSET(MYFILESET) KLICHE(MYOVL) +
                          FILNVN(QPJOBLOG) SPLNBR(*LAST) +
                          OUTTYPE(*VIEW)

/* Delete the temporary spooled file                       */
             DLTSPLF    FILE(QPJOBLOG) SPLNBR(*LAST)

END:         ENDPGM
```

We want also to add a new function to the APFWRKOUTQ command via the <Escape> key. This is only to be run if we press <Escape> on the APFWRKOUTQ screen:

```
         Change screen definition                                  SCR110D

Screen definition  . . . :   COPY_SPLF
  Required library . . . :     *NONE

Description  . . . . . .   Copy spooled file via SNDTCPSPLF from APFWRKOUTQ


Type comparisons, press Enter. Specify OR to start each new group.
Leave line and/or position blank to select cursor line/position.

AND/OR  Line  Pos.  Opr.  Compare value
         1     72   EQ    APFOUTQD
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
 ___    ___   ___   __    ____________________________________________________
                                                                      More...
F3=Exit   F12=Cancel
```

If we press <Escape> we want to copy the spooled file in the line where the cursor is placed (the lines are not filled out). It is defined as below (seen by pressing <Page Down>):

```
         Change screen definition                                  SCR110D

Screen definition  . . . :   COPY_SPLF
  Required library . . . :     *NONE

Command  . . . . . . . . .   CALL PGM(KSE/COPY_SPLF) PARM('&A' '&B' '&C' '&D' '&E)'



Leave line and/or position blank to select cursor line/position.

        Line  Pos.  Len   Description
 &A      ___    8    10   Spooled file name
 &B      ___   28    10   Job name
 &C      ___   40    10   User
 &D      ___   52     6   Job number
 &E      ___   20     6   Spooled file number
 &F      ___   ___   ___   ____________________________________________________
 &G      ___   ___   ___   ____________________________________________________
 &H      ___   ___   ___   ____________________________________________________
 &I      ___   ___   ___   ____________________________________________________
                                                                        End
F3=Exit   F4=Prompt   F12=Cancel
```

Also notice that the function will only work if the information above is visible on the screen so you need to press <F11> before you press <Escape>.

The source of the called program is this:

```
/*-------------------------------------------------------------------*/
/*    This is an example of a program, that can be called from       */
/*    the APF3812/WRKSCNDFN command in InterForm400.                 */
/*                                                                   */
/*    This program is to copy a spooled file to the default outq of  */
/*    the current job.                                               */
/*                                                                   */
/*                                                                   */
/*-------------------------------------------------------------------*/

PGM          (&SPLFNAME &JOBNAME &USER &JOBNBR &SPLFNBR)

             DCL        &SPLFNAME    *CHAR  10
             DCL        &JOBNAME     *CHAR  10
             DCL        &USER        *CHAR  10
             DCL        &FILE        *CHAR  40
             DCL        &JOBNBRA     *CHAR   6
             DCL        &JOBNBR12    *CHAR  12
             DCL        &JOBNBR      *DEC  LEN(15 5)
             DCL        &SPLFNBR     *DEC  LEN(15 5)
             DCL        &SPLFNBRA    *CHAR   6
             DCL        &SPLFNBR12   *CHAR  12
             DCL        &OUTQ        *CHAR  10

/* Convert the numeric job number of the spooled file into 6 char:  */
             CHGVAR     VAR(&JOBNBR12) VALUE(&JOBNBR)
             CHGVAR     VAR(&JOBNBRA) VALUE(%SST(&JOBNBR12 1 6))

/* Convert the numeric splf number of the spooled file into 6 char:  */
             CHGVAR     VAR(&SPLFNBR12) VALUE(&SPLFNBR)
             CHGVAR     VAR(&SPLFNBRA) VALUE(%SST(&SPLFNBR12 1 6))

/* Get the outq of the current job:                                  */
             RTVJOBA    OUTQ(&OUTQ)

/* Send or copy the spooled file:                                    */
             SNDTCPSPLF RMTSYS(*INTNETADR) PRTQ(&OUTQ) +
                          FILE(&SPLFNAME) +
                          JOB(&JOBNBRA/&USER/&JOBNAME) +
                          SPLNBR(&SPLFNBRA) DESTTYP(*AS400) +
                          TRANSFORM(*NO) MFRTYPMDL(*NONE) +
                          INTNETADR('127.0.0.1')

             SNDUSRMSG  MSG('The spooled file has been copied.') +
                          MSGTYPE(*INFO)

END:         ENDPGM
```

Now we are done setting up the functions and we only need to activate these functions on the relevant jobs. In order to do that you just need to make sure that the jobs run the command: APF3812/STRSCNATN:

```
                      Start Screen Attention (STRSCNATN)

Type choices, press Enter.

Command  . . . . . . . . . . . . CMD    > GO MENU(MAIN)



Default program  . . . . . . . . DFTPGM  *USRPRF     Name,*USRPRF,*ASSIST,*NONE
  Library  . . . . . . . . . . .                     Name, *LIBL, *CURLIB










                                                                       Bottom
F3=Exit   F4=Prompt   F5=Refresh   F12=Cancel   F13=How to use this display
F24=More keys
```

The command (CMD) is the command that will be run when this command is done. The default program is the program that will be run if no screen definition setup via WRKSCNDFN fits the current screen when someone is pressing <Attention> (or <Escape>).

Notice that the function above only works on the call level from where the STRSCNATN was run so you could e.g. run this in the initial program of the user profiles - just remember to do a MONMSG after the command so the users can sign on - even during an upgrade of InterForm400...

Appendix R - Install/Upgrade on mirrored machines

Quite a few of our customers are running systems, that are mirrored using a high availability system like e.g. MIMIX or iTera. The usual questions for InterForm400 in relation to such systems are these:

What files (and other objects) should we include in the mirroring?

The important files in InterForm400 are the files that are normally included in the journal, but you could simply mirror all objects in library APF3812. Remember that if you are using journaling for this, the journaling MUST use **IMAGES(*BOTH)** (parameter on the STRJRNPF and STJRNOBJ commands). This is necessary because InterForm400 is using the journal to roll back changes if necessary.

In older versions of InterForm400 we emphasized that it was important NOT to mirror the data area: APF3812/APFCONFIG, as it contains the license code and it must be different on the two machines, but with the 2008 and newer versions of InterForm400, you can now maintain up to 4 license codes via the same license screen. You now insert both license codes in the same screen, and let the mirroring copy the changes onto the other machine. So now you should even mirror this object (the data area APF3812/APFCONFIG) as well!

You should also mirror the directories /apf3812home and /apf3812mail and subdirectories EXCEPT: /apf3812home/temp and /apf3812mail/PDFtemp. These temp directories contains temporary work files and slow mirroring of these temp directories can actually cause a problem in InterForm400.

What journal can we use for the mirroring?

You can use the default journal, which is APF3812/APFJRN, but you can also use your own journal - also one that is outside the APF3812 library. If you chose to use a journal outside the APF3812 library, you should make sure that you are journaling the new APF3812 library after the upgrade - not the APF3812OLD library.

Procedure for install of InterForm400?

When you install InterForm400 on a mirrored system, then you should first install InterForm400 on both the destination and source machines before activating the mirroring. This makes sure that the necessary objects exists on both machines e.g. the needed user profiles and the stream files and directories in the IFS. Refer to the description above for which objects that should be journaled.

If you want to upgrade InterForm400 on a mirrored machine, you should first end the journaling via these steps:

First determine the journal, that is used for journaling InterForm400. As default this will be APF3812/APFJRN. (Replace the references to this journal below if you are using a different one).

You can end journaling of the objects, that is normally journaled by InterForm400 via these options in InterForm400:

12. Service functions
9. Journal menu
2. End journaling files in InterForm library APF3812 (Press F10 to confirm)
3. Delete journal and receivers in InterForm library APF3812

Option 3 will stop with this error if someone has added extra objects to be journaled:

```
                        Additional Message Information

Message ID . . . . . :   CPA0701       Severity . . . . . :   99
Message type . . . . . :   Inquiry
Date sent  . . . . . :   31/03/11      Time sent  . . . . . :   13:01:31

Message . . . . :   CPF7021 received by JRN001C at 3600. (C D I R)
Cause . . . . . :   Control language (CL) program JRN001C in library APF3812
  detected an error at statement number 3600. Message text for CPF7021 is:
  Cannot delete journal APFJRN in APF3812.
```

So you will now need to end journaling of any objects in this journal. You can use this command in order to find out exactly which objects that are still journaled:

WRKJRNA JRN(APF3812/APFJRN)

Now press: F19=Display journaled objects and select e.g. option '30. All object types' to go through all object types that may be journaled. You should be able to find that extra objects e.g. data areas or stream files / directories in the IFS are journaled. You will need to end this journaling with the appropriate command - normally ENDJRNPF, ENDJRNOBJ or ENDJRN.

If you are using a remote journal you can also check for any active remote journals via WRKJRNA and F16, where you can inactivate the remote journal via option 14=Inactivate.

Now you are ready to do the upgrade in the normal manner. You should upgrade InterForm400 on both machines before starting the journaling again - as described in the beginning of this appendix.

Common problem during upgrade of mirrored systems

A problem, that is often seen during upgrade of InterForm400 on a mirrored system is this message:

Library APF3812 cannot be renamed APF3812OLD.
Library APF3812 is in use.
Press F10 to view object locks for the library.
Press Enter to retry.

When pressing F10 no object locks are to be seen, so what is the problem?

Answer: The problem is, that InterForm400 during the upgrade have tried to end all journaling, save the journal and journal receiver and delete the journal and journal receiver, but was not able to delete them. You can see the reason in the joblog:

Cannot delete journal APFJRN in APF3812. Details:

```
                      Additional Message Information

Message ID . . . . . :   CPF7021       Severity . . . . . :   40
Message type . . . . . :   Escape
Date sent  . . . . . :   16/11/09      Time sent  . . . . . :   12:11:09

Message . . . . :   Cannot delete journal APFJRN in APF3812.
Cause . . . . . :   Journal APFJRN in library APF3812 cannot be deleted
  because either objects are being journaled to journal APFJRN or commitment
  control is active for some job on the system and journal APFJRN controls the
  commitment control environment.
Recovery  . . . :   End journaling for all objects being journaled to journal
  APFJRN in library APF3812 using one or more of the following:
    -- End Journal Access Paths (ENDJRNAP)
    -- End Journaling Physical File Changes (ENDJRNPF)
    -- End Journal (ENDJRN)
    -- End Journal Object (ENDJRNOBJ)
    -- End Journal Library (ENDJRNLIB)
                                                                      More...
Press Enter to continue.

F3=Exit   F6=Print   F9=Display message details   F12=Cancel
F21=Select assistance level
```

This is the core problem: Someone have chosen to add journaling of other objects than files thus creating this problem. Refer to the description above for install/upgrade of mirrored systems to solve the problem.

What to verify for a mirrored setup

If you already have a system running mirroring, you can verify, that the destination system is not missing some specific objects:

Check the data queues on the remote machine

One thing I have seen on at least one mirrored setup was, that somone had forgot to link data queues with the output queues on the remote machine. That meant, that Auto_Form would not react to any new spooled files. If possible you can check if these data queues exist, and if they are added to all the output queues, that are monitored by InterForm400.

The data queues are named the same as the output queue, that they are used for and placed in the same library. Via the command, WRKOUTQD you can check if a data queue is connected to the specific output queue:

```
                     Work with Output Queue Description

Queue:   PRT01_IN       Library:   QUSRSYS

Status:
  Writer active  . . . . . :   N
  Writer name(s) if active . . . . . :
  Output queue held  . . . . . :   N
Maximum spooled file size:
  Number of pages  . . . . . :   *NONE
  Starting time  . . . . . :
  Ending time  . . . . . :
Writers to autostart . . . . . :   *NONE
Display any file . . . . . :   *NO
Job separators . . . . . :   0
Operator controlled  . . . . . :   *YES
Order of files on queue  . . . . . :   *FIFO
Data queue . . . . . :   PRT01_IN
  Library  . . . . . :     QUSRSYS
```

If there is no data queue attached you can create and add it either via the InterForm400 menu simply by selecting ‘5. Work with Auto Forms Control’, ‘1. Functions attached to Output

Queues' and then editing the output queue with option 2=Change or you can add it via CHGOUTQ of course.

Check if the data area, APF3812/APFCONFIG exists on the destination machine
On older, mirrored versions of InterForm400 (pre-2008 versions), this object should be excluded for mirroring as this object contains the license code and should be different on the two machines. This object should of course exist anyway on both machines.

Check other objects outside the APF3812 library
Other objects outside of the APF3812 library should also exist on the destination machine. They include the directories: APF3812Mail and APF3812Home and also the user profiles:

AFCOPER
APFUSRPRF
MAILINTER
WEBINTER

Appendix S - Install/Upgrade on iASP machines

It is possible to run InterForm400 on a single iASP (independent auxiliary storage pool). There are a few things you will need to setup differently, when you are running iASP compared to the normal SYSASP as listed below:

Requirements

a) Any programs called by InterForm400 must be placed in libraries within the same iASP or SYSASP.

b) The subsystems used by InterForm400 cannot be placed in the iASP (e.g. in library APF3812), but must be in the SYSASP. InterForm400 can help you to copy (and rename if you want) the used subsystems.

c) The IPL startup program should start the new subsystems at IPL.

d) The user profiles of those that should use the graphical designer will need need to refer to a job description, which refers to the iASP in the INLASPGRP field.

Refer to how to meet each of these requirements below on page **650** in the section 'Changing the setup to iASP'.

Moving to iASP

The process of moving to iASP depends on if you are installing InterForm400 for the first time or during an upgrade of InterForm400:

First time install

First time install on iASP (InterForm400 is not installed in neither SYSASP nor iASP).
In order to install InterForm400 on an iASP you can initially run a normal installation. You can e.g. use the RSTLIBPC.JAR program to upload and restore the APF3812NEW library to a specific iASP and run the normal APF3812NEW/APF3812NEW command. During the installation InterForm400 will restore the directories to the iASP and create symbolic links /apf3812Home and /apf3812Mail pointing to /<iasp>/APF3812Home and /<iasp>/APF3812Mail.

After that you will need the same setup as described below: Changing the setup to iASP.

Moving an existing installation from SYSASP into an iASP

If you want to upgrade InterForm400 as well as move from SYSASP to iASP, we recommend first to upgrade to version 2009M08 or higher and make sure it runs stable in the SYSASP before moving it onto the iASP: It is simply good practice not to change too much at a time, if something should stop working. Doing an upgrade and move to iASP at the same time could make it more difficuilt to find the cause of a problem, if something should occour.

If you have an existing installation of InterForm400 in the SYSASP, which you want to move to an iASP, you should first start out by saving the apf3812 library and the directories /apf3812Home and /apf3812mail (including subdirectories). Then rename the apf3812 library (end the subsystems inside and end, save and delete journals and journal receivers inside via the journal menu in InterForm400). Then you can rename the library to e.g. APF3812SAV (not

apf3812, apf3812old or apf3812new). Also rename the /apf3812home and /apf3812mail directories. Now restore the apf3812 library and the directories to the iASP:

RSTLIB SAVLIB(APF3812) DEV(*SAVF) SAVF(<mylib>/<mysavf>) RSTASPDEV(<myiasp>)

RST DEV('/qsys.lib/<mylib>.lib/<mysavf>.file')
OBJ(('/apf3812home' *INCLUDE '/<myiasp>/apf3812home'))

RST DEV('/qsys.lib/<mylib>.lib/<mysavf>.file')
OBJ(('/apf3812mail' *INCLUDE '/<myiasp>/apf3812mail'))

If you now upgrade to a 2009M08 version or later, the symbolic links will now be added automatically. If you are not upgrading, you will need to add symbolic links yourself:
ADDLNK OBJ('/<iasp>/APF3812Home') NEWLNK('/APF3812Home')
ADDLNK OBJ('/<iasp>/APF3812Mail') NEWLNK('/APF3812Mail')

where <iasp> should be exchanged with the name of the iASP, that you are using (do not include the <>).

Changing the setup to iASP

After you have restored (and perhaps upgraded) InterForm400 onto the iASP, you will need to do a few changes to fit the requirements listed in the beginning of this appendix:

a) All user exit programs called by InterForm400 must be placed in the same iASP as InterForm400 or in the system ASP.
You can generate a list of all user programs called by first changing your job to use an output queue, that is not connected to a physical printer and then creating a spooled file, that lists all cross references in InterForm400:
Change the default outq: CHGJOB OUTQ(APF3812/AFC_INPUT1) (or use another outq not connected to a printer)
Create the list by running this command: APF3812/PRTXREF (You can also create the report via option '8. Print Resource X-reference' on the InterForm400 service menu).
Now you can search the generated spooled file for '*USREXIT' to find all user programs that can be called and from where they are called.

b) The subsystems used by InterForm400 cannot be placed in the iASP (e.g. in library APF3812), but must be in the SYSASP, so now you need to refer to new subsystem descriptions. To copy the subsystem descriptions and to refer to the new ones you can select this in InterForm400:
70. Configuration and licences
2. Configure InterForm 400
Now press Enter several times until you get to this screen:

```
        Configure InterForm 400                                     APF101D
                                                                       9/17

Auto Forms Control subsystem


   Subsystem description  . .  AUTO_FORM2
     Library  . . . . . . . .    QGPL










F3=Exit                                                     F12=Cancel
```

Here you can define the Auto Form s Control subsystem. Now state the new name and library to use (the library must exist and must be in SYSASP). When you press Enter you are asked to press F10 to create the new subsystem and other needed objects:

```
               Create AFC subsystem description

Subsystem description  . .  AUTO_FORM2
  Library  . . . . . . . .    QGPL

Press Enter to create the subsystem description or
press F3 or F12 to cancel.

Note:
The following objects will also be created or updated in
the subsystem library:

Object     Type   Description
AUTO_FORM  *JOBQ  Auto Forms Control job queue
AUTO_FORM  *CLS   Auto Forms Control class
AUTO_FORM  *JOBD  Auto Forms Control job description
AFCSTART   *JOBD  Auto Forms Control startup job description

F3=Exit              F12=Cancel
```

Press Enter and you should then do the same for the other used subsystems.

c) Remember to **change the IPL startup program** (WRKSYSVAL QSTRUPPGM) to start the new subsystems.

d) In order to be able to run e.g. the graphical designer you will also need to do these changes:

1. Copy the normally used job description for the users
2. **Insert the iASP into INLASPGRP of the new job description**
3. Change the users to use the new job description

This could e.g. be done in this manner:

1. CRTDUPOBJ OBJ(QDFTJOBD) FROMLIB(QGPL) OBJTYPE(*JOBD) NEWOBJ(IASP1JOBD)
2. CHGJOBD JOBD(IASP1JOBD) INLASPGRP(IASP1)
3. CHGUSRPRF USRPRF(<user>) JOBD(QGPL/IASP1JOBD)

Substitute 'YourAFCSBS' with exactly 10 characters containing the name of the subsystem e.g. 'APF3812 ' (use trailing blanks), and 'YourIASP' with exactly 10 characters containing the iASP name (use trailing blanks).

Moving from an iASP onto SYSASP

If you want to move an InterForm400 installation back from iASP to SYSASP you should revert the changes described above:

a) Save the APF3812 library and the directories: /apf3812home and /apf3812mail.
b) Rename the existing apf3812 library and the directories above.
c) Restore the library and directories to SYSASP.
d) Change the used job description.
e) Remove the symbolic links for /apf3812home and /apf3812mail. You should very cautious when doing that, so you are sure you only delete the symbolic links and not the complete directories.. You can do it via WRKLNK: If you use option 8=Display attributes you should be able to see that the type is 'SYMLNK' on the very top of the screen.

Appendix T: Embed files in PDF

When you create PDF files with InterForm400, you can also chose to embed one or more files within the PDF file - if you have purchased the Advanced PDF Module. You can also test this module if you activate a test code for InterForm400. No extra installation is needed.

The embed functionality can e.g. be used for including terms of delivery or you can chose to include all referenced invoices in a statement PDF file, commercial offers especially directed to specific customers or e.g. images of each article in the detail lines (e.g. kitchen elements). The embedded files can be of any type e.g. PDF, Excel, Word, images etc. If you embed the same file more than once, then it will only be included once - to keep the resulting file as small as possible.

Each embed definition can insert these types of files:

1. A fixed file for the document/spooled file.
2. A dynamic file which is found via header information found in a fixed line and interval of positions on the first page of the spooled file.
3. Several dynamic files which are found via information from detail lines (and header lines of page 1) in all the pages of the spooled file.

Below we will mainly describe the setup of an embed definition and an example of how to use it.

If you want to embed files for detail lines in the spooled file, then you need to define a remap window for the relevant lines and positions in your overlay(s). These remaps can be placed in conditioned overlays. InterForm400 is searching for these remaps in order to find out where to place the link to the embedded file. This requirement is described under option **9. Variables in detail lines**, which is included on page 662.

NOTE

The embed function can only be used with emailing and the command, MRGSPLFPDF. The embed function is not implemented for the PDF file naming definitions.

Setup of an Embed definition

To setup an embed definition you select this in InterForm400:

5. Work with Auto Forms Control
7. PDF embedding definitions

Here you can create an embed definition with F6=Create and then setup the definition:

```
         Work with embedding definitions                              EMB300D

Position to . . . . . .               Embedding definition

Type options, press Enter.
  2=Change   3=Copy   4=Delete   5=Display


     Embedding
Opt  definition  Description
     DEMO        DEMO
2    DEMO1       DEMO1: Header info from page 1=> Terms of delivery
     DEMO2       DEMO2
     STATEMENT   Include invoices in statement




                                                                        End
F3=Exit   F5=Refresh   F6=Create   F12=Cancel
```

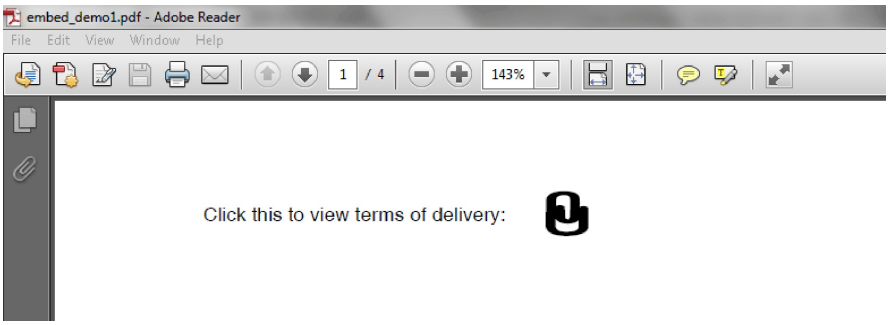
Open action

When editing (or creating a new definition) you are prompted for the **open action**:

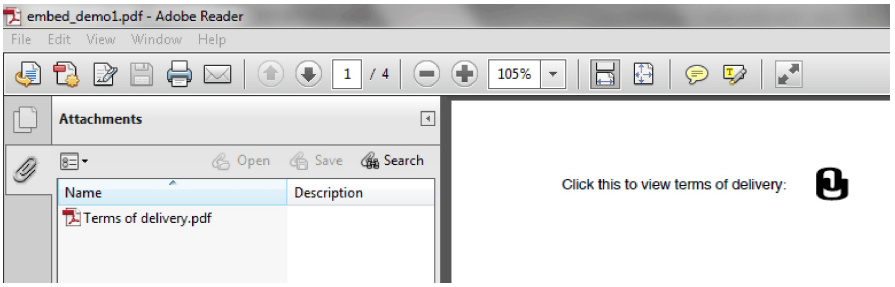
```
         Change embedding definition                                  EMB305D

Embedding definition . . :   DEMO1
Description  . . . . . .     DEMO1: Header info from page 1=> Terms of delivery
Open action  . . . . . .     0   0 = Do not show attachment window
                                 1 = Show attachment window









F3=Exit   F12=Cancel
```

The open action sets if you want to display a list of the embedded files when the PDF file is opened:

Option '0 = Do not show attachment window' opens the file like this:



Option '1 = Show attachment window' displays the list of embedded files like this:



After hitting Enter you can now work with the file types of the current embed definition and create new ones with F6=Create:

```
         Change embedding definition - file types                    EMB310D

Embedding definition . . :  DEMO1
Description  . . . . . . :  DEMO1: Header info from page 1=> Terms of delivery
Type options, press Enter.
  2=Change  3=Copy  4=Delete 5=Display
Opt  File type   Description
 _   TERMS       Terms of delivery









F3=Exit                        F6=Create                      F12=Cancel
```

You can define multiple file types inside the same embed definition. The file type setup is described below.

Setup file types

Within an embed definition you can define one or multiple file types:

```
         Change embedding definition - file types                    EMB310D

Embedding definition . . :  DEMO1
Description  . . . . . . :  DEMO1: Header info from page 1=> Terms of delivery
Type options, press Enter.
  2=Change  3=Copy  4=Delete 5=Display
Opt  File type   Description
 _   TERMS       Terms of delivery
```

```
F3=Exit                        F6=Create                      F12=Cancel
```

After creating a file type (defining a name and description of the document type to embed) you will see this screen:

```
         Change embedding definition - file type details              EMB320D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery

Select one of the following options:

   1. Descriptions of file type to be embedded
   2. Embedding model
   3. Icon
   4. Variables
   5. Path to file(s) to be embedded
   6. Page layout input spooled files
   7. Variables in head page 1
   8. Detail line layout
   9. Variables in detail lines
  10. User exit program to find variable(s)



Option:     __

F3=Exit                                                       F12=Cancel
```

Each option is described below:

1. Descriptions of file type to be embedded

Here you define an internal description of the type of file/document, that you are embedding:

```
         Change embedding definition - file type details              EMB320D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery


Description  . . . . . .  Terms of delivery____________________________________

F3=Exit                                                       F12=Cancel
```

This is not used in the actual output.

2. Embedding model

With this option you define how InterForm400 should identify the file(s) to be embedded:

```
         Change embedding definition - file type details              EMB320D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery


Embedding model  . . .  2   1 = Embed a specific file
                            2 = Embed a file based on variables from page 1
                            3 = Embed a number of files based on variables
                                in head of page 1 and variables from detail
                                lines.









F3=Exit                                                      F12=Cancel
```

You can chose to embed one fixed file, a file identified by header information (in a fixed position and line) found only on page 1 of the spooled file or multiple files identified by information found in both the header of page 1 and detail lines.

In this example we want to insert a file containing terms of delivery, that is depending on the customer type/id. In this example there is only one document per spooled file, so we can use option 2.

3. Icon

With this option you define what icon to insert in the main PDF file to open the embedded file(s) and where to place the icon. The screen has different contents depending on the embedding model selected above. Here the embedding model is 2:

```
         Change embedding definition - file type details              EMB320D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery

Icon type  . . . . . .  1  1 = Paper Clip
                           2 = Push Pin
                           3 = Tag
                           4 = Graph
                           5 = Blue Underline
                           6 = Image from /APF3812home/Icons (JPG)

Where to place icon
  Page code . . . . . . 1 1 = First page
                          2 = All pages
                          3 = Last page
Location on page
  From top  . . . . . .  0,180
  From left . . . . . .  2,180
  Rotation  . . . . . . 000
Icon size
  Height  . . . . . .  0,060
  Width . . . . . .  0,060


F3=Slut                                                      F12=Cancel
```

The icon type identifies the image to use for the link to the embedded file. Types 1-4 are shown below:

1= Paper Clip:  2 = Push Pin: 

3 = Tag:  4 = Graph: 

Icon type 5 sets the link to be a blue underline and with type 6 you can use your own image - which can even by dynamically selected with one or more variables. The image file name for type 6 is set via option **5. Path to file(s) to be embedded**.

Take care not to state an icon height, that is too large for detail lines. Especially for the underline you should consider a height around 0,020 to avoid overlapping links.

The placement and size is written in inches and pels. Refer to page 73 for a definition of pels.

4. Variables

You can define up to 9 variables, which can be retrieved from the spooled file and used for identifying:

1. The path and file name of the file(s) to be embedded.
2. The name of the embedded file as it appears in the main PDF file.
3. The name of the image, which is to be used as the icon in the main PDF file.

The variables are changed via this list:

```
         Change embedding definition - variables                    EMB330D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery

Type options, press Enter.
  2=Change   4=Delete   5=Display
Opt  Variable  Status       Description          Length  Trim   Placement
 _    *V1       Defined      Customer type           4    *NO    Head
 _    *V2       Not defined
 _    *V3       Not defined
 _    *V4       Not defined
 _    *V5       Not defined
 _    *V6       Not defined
 _    *V7       Not defined
 _    *V8       Not defined
 _    *V9       Not defined









F3=Exit                                                  F12=Cancel
```

To set or change a variable you select option 2=Change:

```
         Change embedding definition - variables                    EMB330D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery



Variable . . . . . :  *V1
Description  . . . . .  Customer type
Variable length  . . . .   4      (1 - 30)
Trim variable  . . . . .  *NO     *RIGHT, *YES, *NO
Placement of variable  .  1        1 = In head   2 = In detail line  3 = UserExit









F3=Exit                                                  F12=Cancel
```

With **Trim variable** you decide if you want to remove any trailing (***RIGHT**) or both leading and trailing (***YES**) blanks from the variable before using it.

Placement of variable sets the type of variable. It can either be found in a fixed position in the header or in the detail lines - or the variable can be set via a user exit program.

If you chose option **3=UserExit** a user program will be called to set the value of the variable. Refer to page **663** for how to define the program.

5. Path to file(s) to be embedded

Here you state the path and file name to embed and what it should be named when it is embedded:

```
         Change embedding definition - file type details            EMB320D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery


 Path to file(s)
/apf3812home/work/*V1.pdf
                                                                              
                                                                              
                                                                              
                          

 Name of the embedded file inside the PDF-file
Terms of delivery.pdf                                

 Image from /APF3812home/Icons to be used as Icon
                                                     









F3=Slut                                                  F12=Cancel
```

This sets the file(s) to include of the given type. If you want to embed other file types you simply create another file type for the current embedding definition.

The bottom field: **Image from /APF3812home/Icons...** is shown only if you have set the icon type to be '6 = Image from /APF3812home/Icons' in option **3. Icon**. JPG files can be used as icons.

6. Page layout input spooled files

This option is only shown if you have set the embedding model to 3 (specifying that you want to use data from the detail lines for the embedding) in option **2. Embedding model**.

Here you state which lines in the spooled file, that can be considered detail lines:

```
         Change embedding definition - file type details             EMB320D
Embedding  . . .: DEMO3      DEMO3: Embed picture of part in detail lines
File type  . . .: PART_IMG   Image of part number


Line number interval detail lines

  First page . . . . . . . 22 - 66
  Following pages  . . . . 12 - 66


Type of detail lines . . . 1   1 = A logical line is one physical line,
                                   and all detail lines have the same format.
                               2 = Other









F3=Slut                                                    F12=Cancel
```

Above we have defined the setup for a situation, where the header on page 1 is larger than on the subsequent pages, so the detail lines start at line 22 on page 1 and line 12 on the other pages.

The **type of detail lines** sets the layout of the detail lines. If all detail lines are simular, then you simply set the type to be 1, but if there are multiple layouts of the detail lines, then you set the type to 2. Setting the type to 2 will open another option on the file type menu: **8. Detail line layout**

7. Variables in head page 1

If you have defined any variables, that are placed in the header of the spooled file, then they are listed when this option is selected. Here you should set the line and positions in the spooled file from where the contents of this variable can be found:

```
         Change embedding definition - variables in head              EMB335D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery

Type options, press Enter.
  2=Change   4=Delete   5=Display

Opt  Variable  Description             Lineno  Position
 _    *V1       Customer type             13      57
 _    *V2



F3=Exit                                                    F12=Cancel
```

Select option 2=Change to set the variable:

```
         Change embedding definition - variables in head              EMB335D
Embedding  . . .: DEMO1      DEMO1: Header info from page 1=> Terms of delivery
File type  . . .: TERMS      Terms of delivery



Variable . . . . . :  *V1
Description  . . . . . :  Customer type

Line number  . . . . . .  13     (1-255)
Left position  . . . . .  57     (1-378)









F3=Exit                                                    F12=Cancel
```

The length of the variable is defined in option **4. Variables**, so here you just state the start position.

8. Detail line layout

This option is only available if you have set the detail lines to be type **2=Other** in option **6. Page layout input spooled files**.

With this option you can identify various detail line types. You can set multiple line types numbered by a sequence number. InterForm400 will for each detail spooled file line in the interval stated in option **6. Page layout input spooled files** go through this list in numeric order.

Below we have set a line type, that checks if positions 1-8 are all numeric (or blank). If that is the case, then the variable(s) will be retrieved and a link inserted:

```
         Change embedding definition - detail line layout            EMB350D
Embedding  . . .: DEMO3      DEMO3: Embed picture of part in detail lines
File type  . . .: PART_IMG   Image of part number

 0001        Part number line




Seqnbr.
   1,0
        Description . . . . . . . . Part number line
        Compare positions . . . . .  1 -  8    1 - 378
        Compare code  . . . . . . . A          = > < N A U
        Compare value . . . . . . . 0123456789
        Number of physical lines  . *VAR       1 - 99, *VAR
        Links in this file type . . *YES       *YES, *NO


F3=Exit                                F11=Delete          F12=Cancel
```

If you want to make sure, that some lines are not considered for variables and links, then you can insert a line type prior to this line to identify the lines, that should not be used:

```
         Change embedding definition - detail line layout            EMB350D
Embedding  . . .: DEMO3      DEMO3: Embed picture of part in detail lines
File type  . . .: PART_IMG   Image of part number

 0002        Ignore these lines
 0003        Part number line




Seqnbr.
   2,0
        Description . . . . . . . . Ignore these lines
        Compare positions . . . . .  1 -  8    1 - 378
        Compare code  . . . . . . . U          = > < N A U
        Compare value . . . . . . . 0123456789
        Number of physical lines  . 01         1 - 99, *VAR
        Links in this file type . . *NO        *YES, *NO


F3=Exit                                F11=Delete          F12=Cancel
```

The conditions (and *VAR) are functioning in the same manner as for calling conditioned overlays (also referred to as ‘until another is true’ for the conditioned overlays) i.e. transfer spooled file lines until another condition is true. Refer to page 94 and **123** for information.

9. Variables in detail lines

The defined variables will only appear here if you in option **4. Variables** have defined them to be placed in detail lines:

```
         Change embedding definition - variables in detail lines      EMB340D
Embedding  . . .: DEMO3      DEMO3: Embed picture of part in detail lines
File type  . . .: PART_IMG   Image of part number

Type options, press Enter.
  2=Change   5=Display
Opt  Variable  Description             Lineno  Position
 _   *V1       Part number                 1          1









F3=Exit                                                  F12=Cancel
```

Each variable is set like this:

```
         Change embedding definition - variables in detail lines      EMB340D
Embedding  . . .: DEMO3      DEMO3: Embed picture of part in detail lines
File type  . . .: PART_IMG   Image of part number



Variable . . . . . :  *V1
Description  . . . . . :  Part number


Left position  . . . . . .  __1     (1-378)
Control placement of icon  . . 1       1=Yes

To change control of placement icon for this variable to *NO,
change another variable to *YES.









F3=Exit                                                  F12=Cancel
```

The **Left position** is the start position in the spooled file from where to grab the value of the variable.

If **Control placement of icon** is set to **1** (=*YES), then the position of the spooled file text retrieved for this variable will be the basis for the position of the link in the main PDF file. This even takes into account if you use a remap or other design elements to reposition the spooled file text. The spooled file data for the detail variable must be remapped if you are using it to control the placement of the icon.

10. User exit program to find variable(s)

With this option you set the program to be called if you want to set the value for one or more variables via a user program as described on page **659**.

This user program will get the values of all the other variables making it possible to e.g. look up in a data base and return the found value(s). A demo source for such a program is included in the source file APF3812/APISRC in member EMBEXIT. Remember not to place the program object in the APF3812 library and that the owner of the program must be QSECPFR.

How to use the embed definition

The embed definition can be used in both the APF3812/MRGSPLFPDF command and in the email finishing definition.

MRGSPLFPDF

The MRGSPLFPDF command has this parameter to select the embed definition:

Embedding definition name . . . **EMBDEF**.

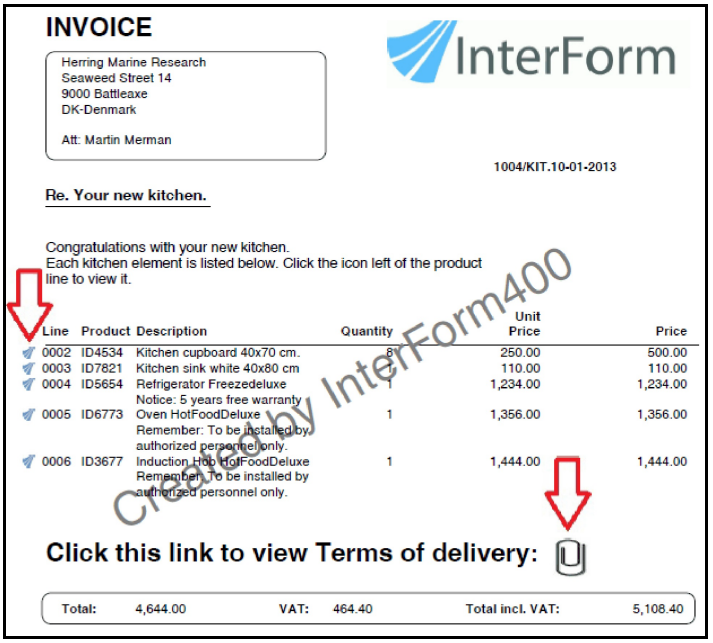
As default this contains the value '*NONE'. Refer to the documentation of the MRGSPLFPDF command on page 449 for details.

Email finish definition

On the email finishing definition you refer to an embed definition via option '**11. PDF embedding definition**'. Details of the email finish definition can be found on page 247.

Getting familiar with the Embed PDF function

Below we will go through the steps of creating a PDF file looking like this:



INVOICE

Herring Marine Research
Seaweed Street 14
9000 Battleaxe
DK-Denmark

Att: Martin Merman

InterForm

1004/KIT.10-01-2013

Re. Your new kitchen.

Congratulations with your new kitchen.
Each kitchen element is listed below. Click the icon left of the product line to view it.

Line	Product	Description	Quantity	Unit Price	Price
0002	ID4534	Kitchen cupboard 40x70 cm.	8	250.00	500.00
0003	ID7821	Kitchen sink white 40x80 cm	1	110.00	110.00
0004	ID5654	Refrigerator Freezedeluxe Notice: 5 years free warranty	1	1,234.00	1,234.00
0005	ID6773	Oven HotFoodDeluxe Remember: To be installed by authorized personnel only.	1	1,356.00	1,356.00
0006	ID3677	Induction Hob HotFoodDeluxe Remember: To be installed by authorized personnel only.	1	1,444.00	1,444.00

Created by InterForm400

Click this link to view Terms of delivery:

Total: 4,644.00 VAT: 464.40 Total incl. VAT: 5,108.40

The pdf file can be found here:
http://download.interform400.com/shares/public/InterForm400_embedded_files.pdf

The red arrows points to the links to the two kinds of embedded files. There is an embedded file for each detail line and a file containing the term of delivery. The links in the detail lines opens up an (embedded) image of the product. These image are embedded dynamically from the IFS when the PDF file is generated. The terms of delivery is a PDF file, which is also selected dynamically via information found on the first page of the original spooled file.

First we create an embed definition by selecting this in InterForm400:

5. Work with Auto Forms Control
7. PDF embedding definitions

Then we press F6 to create a new definition:

```
         Change embedding definition                                EMB305D

Embedding definition . . :   KITCHEN
Description  . . . . . .   Kitchen Embed demo
Open action  . . . . . .   0   0 = Do not show attachment window
                               1 = Show attachment window









F3=Exit   F12=Cancel
```

After pressing Enter we view the file types to embed:

```
         Change embedding definition - file types                   EMB310D

Embedding definition . . :  KITCHEN
Description  . . . . . :  Kitchen Embed demo
Type options, press Enter.
  2=Change  3=Copy  4=Delete 5=Display
Opt  File type   Description
 _   PRODUCT     Product image
 _   TERMS       Terms of Delivery









F3=Exit                      F6=Create                    F12=Cancel
```

Inserting the terms of delivery

We press F6=Create to add a new one:

```
         Change embedding definition - file type details             EMB320D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: TERMS      Terms of Delivery

Select one of the following options:

   1. Descriptions of file type to be embedded
   2. Embedding model
   3. Icon
   4. Variables
   5. Path to file(s) to be embedded

   7. Variables in head page 1

   9. Variables in detail lines
  10. User exit program to find variable(s)




Option:   __

F3=Exit                                                  F12=Cancel
```

We want to condition the 'terms of delivery' on the customer type, so different PDF files will be embedded depending on this type. This information is found in a fixed position in the spooled file.

In option 2 we set the embedding model:

```
         Change embedding definition - file type details             EMB320D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: TERMS      Terms of Delivery


Embedding model  . . .  2   1 = Embed a specific file
                            2 = Embed a file based on variables from page 1
                            3 = Embed a number of files based on variables
                                in head of page 1 and variables from detail
                                lines.

F3=Exit                                                  F12=Cancel
```

Via option 3 we set the icon to use as well as the size and position of the icon:

```
        Change embedding definition - file type details              EMB320D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: TERMS      Terms of Delivery

Icon type  . . . . . .  6  1 = Paper Clip
                           2 = Push Pin
                           3 = Tag
                           4 = Graph
                           5 = Blue Underline
                           6 = Image from /APF3812home/Icons
Where to place icon
  Page code . . . . . .  1  1 = First page
                           2 = All pages
                           3 = Last page
Location on page
  From top  . . . . . .  6,120
  From left . . . . . .  6,100
  Rotation  . . . . . .  000
Icon size
  Height  . . . . . .  0,100
  Width . . . . . .  0,100

F3=Slut                                                  F12=Cancel
```

Remember, that the position and size is written as inches and pels. We have chosen to use a specific image for the icon. This image must be placed in /APF3812home/Icons.

In option 4. Variables we define one variable:

```
        Change embedding definition - variables                      EMB330D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: TERMS      Terms of Delivery



Variable . . . . . :  *V1
Description  . . . . .  Terms Version
Variable length  . . .   1     (1 - 30)
Trim variable  . . . .  *NO     *YES, *NO
Placement of variable  .  1     1 = In head   2 = In detail   3 = UserExit









F3=Exit                                                  F12=Cancel
```

We intend to use a single digit to select between PDF files containing different terms of delivery.

In option **5. Path to file(s) to be embedded** we select the files to embed, the name to call the file in the main PDF file, but also the image to use for the icon:

```
         Change embedding definition - file type details              EMB320D
 Embedding  . . .: KITCHEN    Kitchen Embed demo
 File type  . . .: TERMS      Terms of Delivery


 Path to file(s)
/apf3812home/work/TermsOfDelivery*V1.pdf
 Name of the embedded file inside the PDF-file
Terms of Delivery.pdf

 Image from /APF3812home/Icons to be used as Icon
paperclip.jpg




 F3=Slut                                                  F12=Cancel
```

The final thing we need to do for the terms is to tell InterForm400 where the variable (*V1) should be found in the spooled file in option **7. Variables in head page 1**:

```
         Change embedding definition - variables in head              EMB335D
 Embedding  . . .: KITCHEN    Kitchen Embed demo
 File type  . . .: TERMS      Terms of Delivery



 Variable . . . . . :  *V1
 Description  . . . . . :  Terms Version

 Line number  . . . . . .   3     (1-255)
 Left position  . . . . .   72    (1-378)









 F3=Exit                                                  F12=Cancel
```

Inserting product images

We want to embed an image of each product referred to in the detail lines. The images are in this example placed in /apf3812home/work and named the same as the product ID with the extension .jpg. A special image is also used for the links here.

The embedding model is this one:

```
         Change embedding definition - file type details             EMB320D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: PRODUCT    Product image


Embedding model  . . .  3   1 = Embed a specific file
                            2 = Embed a file based on variables from page 1
                            3 = Embed a number of files based on variables
                                in head of page 1 and variables from detail
                                lines.









F3=Exit                                                    F12=Cancel
```

The icon as well as the position and size are defined here:

```
         Change embedding definition - file type details             EMB320D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: PRODUCT    Product image

Icon type  . . . . . .  6  1 = Paper Clip
                           2 = Push Pin
                           3 = Tag
                           4 = Graph
                           5 = Blue Underline
                           6 = Image from /APF3812home/Icons




Location on page
  From variable baseline  .  0,005   Positive for downwards
  From left . . . . . .  0,180
  Rotation  . . . . . .  000
Icon size
  Height  . . . . . .  0,030
  Width . . . . . .  0,030

F3=Slut                                                    F12=Cancel
```

The paths for images are defined below:

```
         Change embedding definition - file type details              EMB320D
 Embedding  . . .: KITCHEN    Kitchen Embed demo
 File type  . . .: PRODUCT    Product image


 Path to file(s)
/apf3812home/work/*V1.jpg
 Name of the embedded file inside the PDF-file
Product_*V1.jpg

 Image from /APF3812home/Icons to be used as Icon
link2.jpg




 F3=Slut                                                  F12=Cancel
```

Notice, that we are using a variable as part of the name of the embedded files in the main PDF file - and that we could also have used a variable as a part of the icon image if needed.

With option **6. Page layout input spooled files** we define the lines, that should be considered detail lines:

```
         Change embedding definition - file type details              EMB320D
 Embedding  . . .: KITCHEN    Kitchen Embed demo
 File type  . . .: PRODUCT    Product image


 Line number interval detail lines

   First page . . . . . .  25 -  43
   Following pages  . . .  25 -  43


 Type of detail lines . . . 1   1 = A logical line is one physical line,
                                    and all detail lines have the same format.
                                2 = Other









 F3=Slut                                                  F12=Cancel
```

In this case all the detail lines are found in line 25-43 and the lines, that does not contain an ID are blank in the relevant positions:

```
Line Product Description                  Quantity       Price      Price
-------------------------------------------------------------------------
0002 ID4534  Kitchen cupboard 40x70 cm.           8      250.00     500.00
0003 ID7821  Kitchen sink white 40x80 cm          1      110.00     110.00
0004 ID5654  Refrigerator Freezedeluxe            1    1,234.00   1,234.00
             Notice: 5 years free warranty
0005 ID6773  Oven HotFoodDeluxe                   1    1,356.00   1,356.00
             Remember: To be installed by
             authorized personnel only.
0006 ID3677  Induction Hob HotFoodDeluxe          1    1,444.00   1,444.00
             Remember: To be installed by
             authorized personnel only.
```

So for the lines, where the product is blank InterForm400 will use blanks for the variable and try to embed a file called .jpg. As no such file exists on our system, then no embed/link is added for these lines.

Finally in option **9. Variables in detail lines** we set the position of the variable, *V1:

```
         Change embedding definition - variables in detail lines      EMB340D
Embedding  . . .: KITCHEN    Kitchen Embed demo
File type  . . .: PRODUCT    Product image



Variable . . . . . . . . . . :  *V1
Description  . . . . . . . . :  Product ID


Left position  . . . . . . . .  13     (1-378)
Control placement of icon  . .  1      1=Yes

To change control of placement icon for this variable to *NO,
change another variable to *YES.









F3=Exit                                                  F12=Cancel
```

By activating ‘Control placement of icon’ the final position in the output (even if it is remapped) of the text for this variable is used as a reference for placing the link icon in the final result.

Appendix U : Setting up CA in DCM

If you want to use a user ID and password for logging onto an external mail server, then you will probably need to use either TLS (Transport Layer Security) and/or
SSL, (Secure Sockets Layer). TLS and SSL provides the means to encrypt the sensitive parts of the communication with the mail server to protect the data from being read by anyone else.

This appendix explains how to enable TLS and SSL that on the IBM I.

Use of SSL signon with the designer

A digital certificate is also needed if you want to run the graphical designer with SSL. The initial setup of DCM is the same if you want to use SSL, but you will also need to configure DCM as described on page 681.

Setting up DCM

For SSL and TLS you need to install a Certificate Authority. This is done via Digital Certificate Manager, DCM. You access DCM via the IBM HTTP Administration web interface.

Digital Certificate Manager may not be installed on the IBM I. If not, then you first need to install it.

IBM HTTP server for i5/OS is also required.

You need to start up the IBM HTTP Administration web interface - if it is not already running. You can do that with the command:

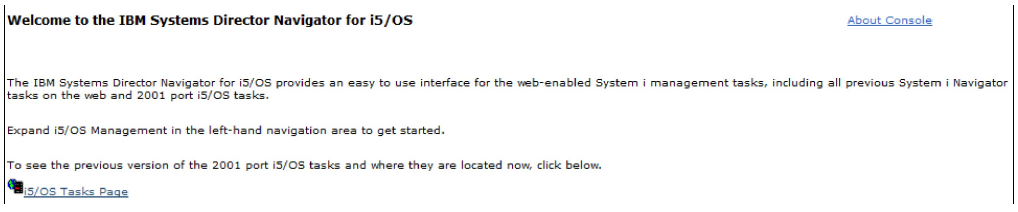
STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN)

Now you can access the configuration by accessing this site via a web browswer:
http://your_system_name:2001

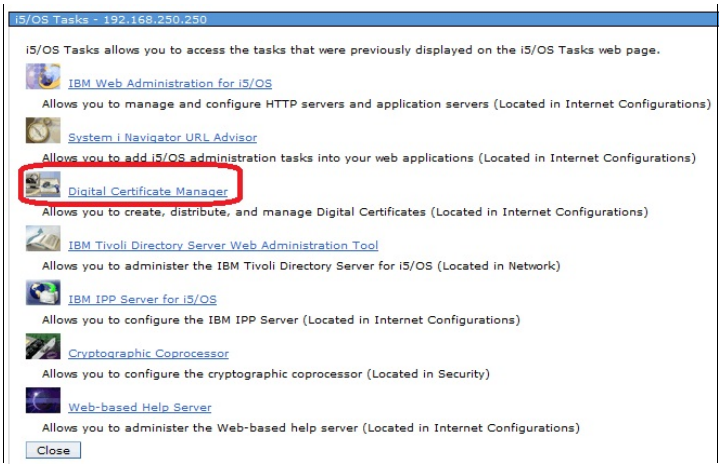
Logon to the IBM I as a user with administration rights e.g. *IOSYSCFG

Tip:
If you get this error:
`Error 500: SSL port is not configured, request cannot be secured`
- when trying to access the web site above, then the solution here might help you:
http://www-01.ibm.com/support/docview.wss?uid=nas8N1019747

Now click the link named: i5/OS Tasks Page on the lower left:



On the next screen you click the ‘Digital Certificate Manager’:

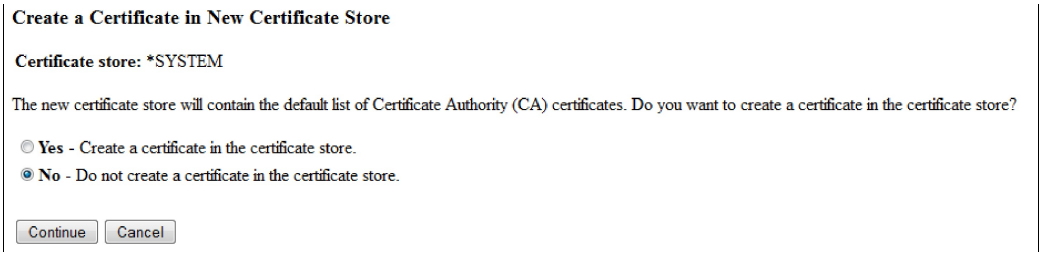


Creating a System Certificate store

Inside the Digital Certificate Manager you need to create a System Certificate store - if it is has not already been created. To do that you click ‘Create New Certificate Store’:

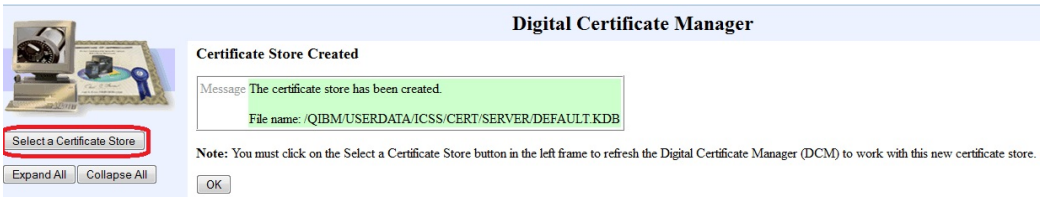
Here you select ‘*SYSTEM’:

On the next screen make sure to select ‘No - Do not create a certificate in the certificate store’ like below:



On the next screen you are asked for a password:

Finally a confirmation screen is shown:



You should click the marked 'Select a Certificate Store' icon to work with the new store. Here you will be prompted for the store password.

Setting up the authority for the Certificate Store

The user profile, that is sending emails (or rather the user running the job) must be authorized and have both Read and Execute authority to the certificate store mentioned above. If the user does not have sufficient authority, then you will get this error message when trying to send out an email while using SSL or STARTTLS:

```
                      Additional Message Information

Message ID . . . . . :   SMP0101       Severity . . . . . :   00
Message type . . . . . :   Diagnostic
Date sent  . . . . . :   27/03/13      Time sent  . . . . . :   13:51:22

Message . . . . :   Error D/6003 occured starting secure environment.
Please check requirements in the InterForm manual if you want to be able to
  use SSL or STARTTLS security for the email gateway.
```

The solution is to either send out the emails while running the job as another user or to change the authority to each directory in the path for the certificate store - and the stream file containing the certificate store e.g. while using WRKLNK and option 9:

```
                           Work with Authority

Object . . . . . :   /qibm/UserData/ICSS/Cert/Server/DEFAULT. >
Type . . . . . :   STMF
Owner  . . . . . :   QSYS
Primary group  . . . . . :   *NONE
Authorization list . . . . . :   *NONE

Type options, press Enter.
  1=Add user   2=Change user authority   4=Remove user

                   Data     --Object Authorities--
Opt  User        Authority  Exist  Mgt  Alter  Ref

_    *PUBLIC     *RX
_    QSYS        *RW          X     X     X     X
```

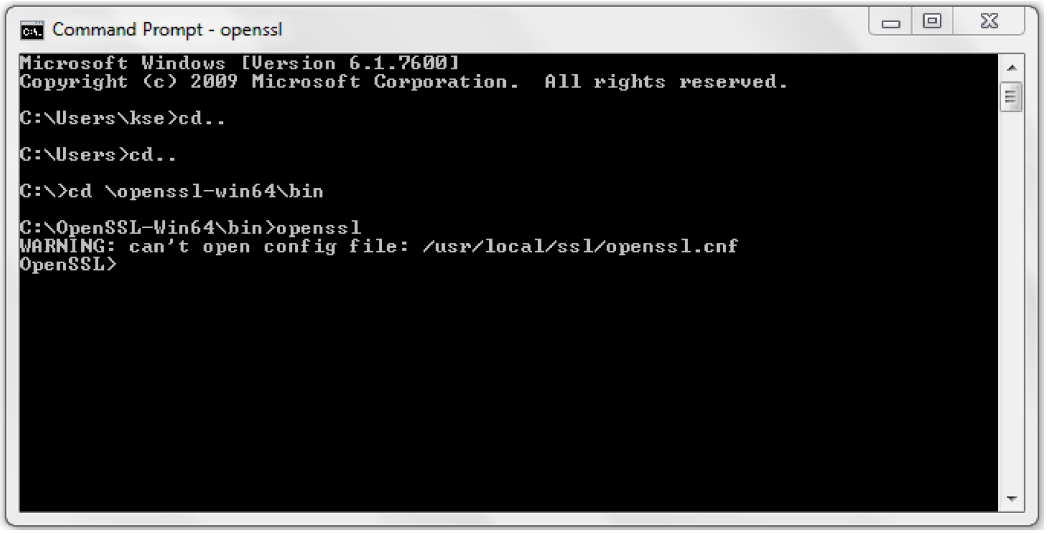
Above the *PUBLIC authority has been changed from *EXCLUDE to *RX making it possible for anyone to send out emails using SSL or STARTTLS.

Getting a Certificate file

When encrypting the data exchanged with the mail server, you will need to get the ‘public key’ of the mail server, so that only the mail server is able to decrypt the email using the secret ‘private key’. The public key should be freely available as a .cer file, but often you will need to contact the mail server to get it. One way is to use a free tool called ‘OpenSSL’, which you can download here:

http://slproweb.com/products/Win32OpenSSL.html

After installation you run it via DOS session. In the DOS session you change the directory to the bin directory containing the OpenSSL installation. This can e.g. be C:\OpenSSL-win64\bin:



After executing 'openssl' you will get an OpenSSL prompt like above.

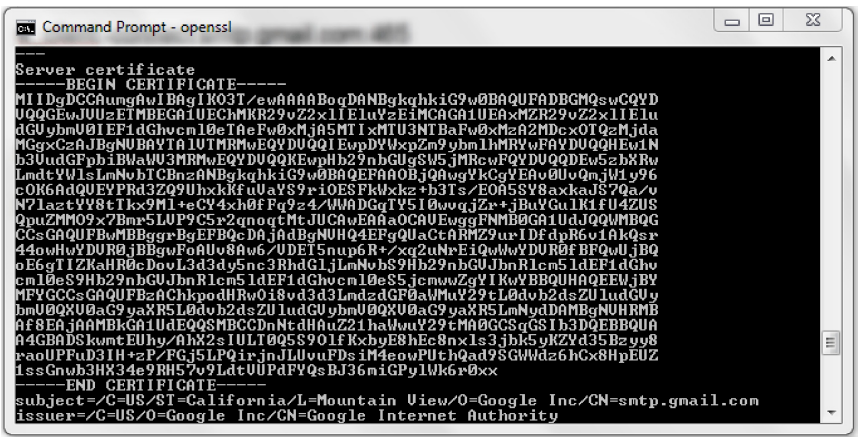
For getting the SSL certificate from e.g. Gmail you should run this command:

s_client -connect smtp.gmail.com:465

This command will get the TLS certificate:

s_client -connect smtp.gmail.com:587 -starttls smtp

In the DOS Session you will see a lot of data and the certificate starting with **-----BEGIN CERTIFICATE-----** and ending with **-----END CERTIFICATE-----** like below:

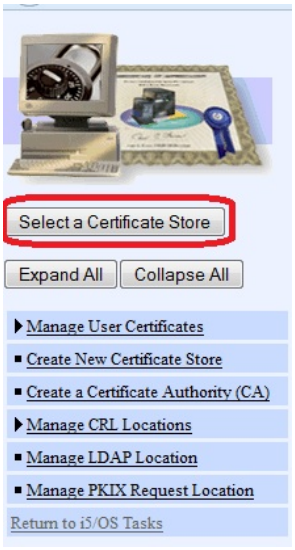


You should now copy the text starting with (and including) ---- BEGIN CERTIFICATE---- until (and including) -----END CERTIFICATE----- and paste it into Notepad. Now save the file in Notepad as a certificate file with the extension .cer. This file contains the certificate, that we would like to import below.

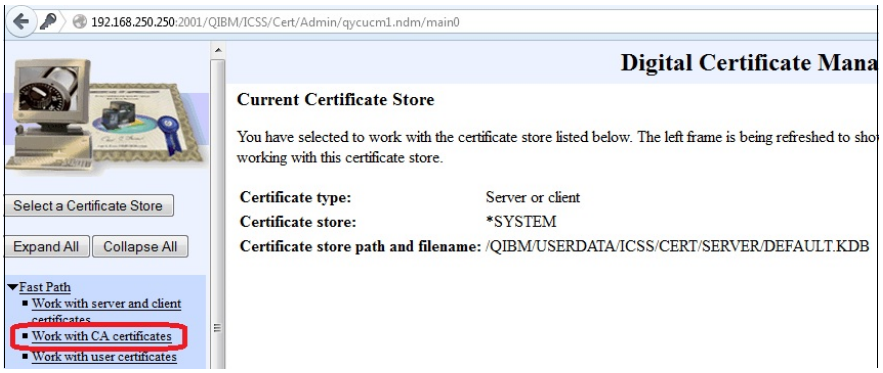
Importing a certificate in DCM

To import a certificate file into the Digital Certificate Manager (DCM) you first need to upload the file onto the IFS. This can e.g. be done via a mapped network drive or via FTP.

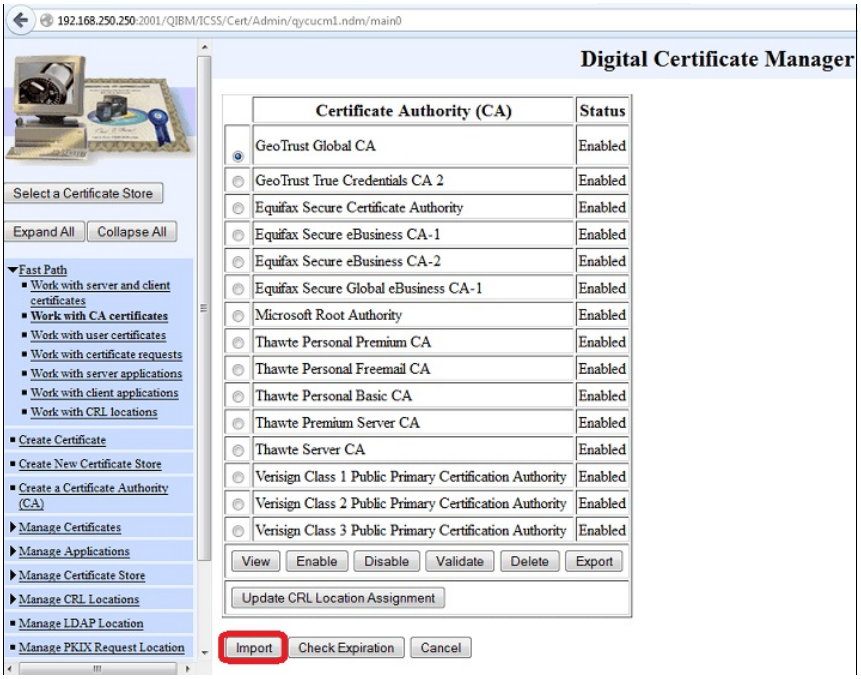
Now you should enter DCM like described earlier and then click ‘Select a certificate Store’ icon on the left:



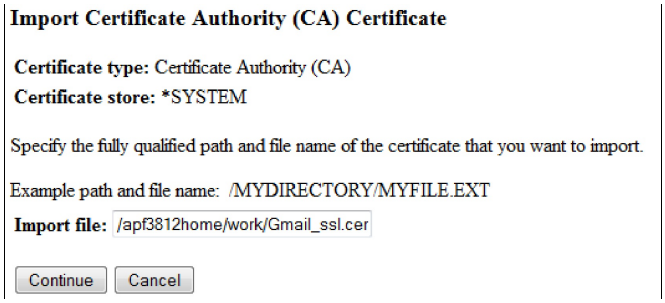
Now you select *SYSTEM and type in the password you specified when you created the certificate store. After that you can open the Fast Path and select ‘Work with CA certificates’ on the left:



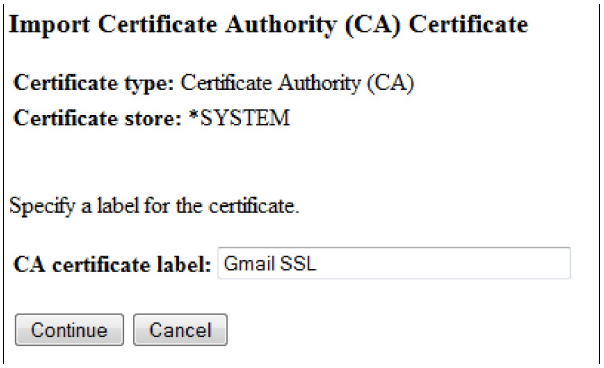
Next you click ‘Import’ in the bottom to import the certificate from the IFS:



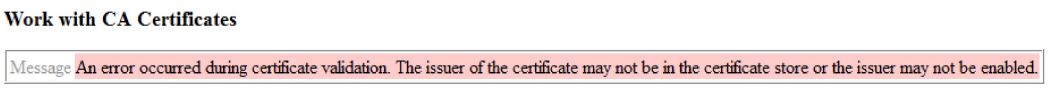
You write the path and file name here:



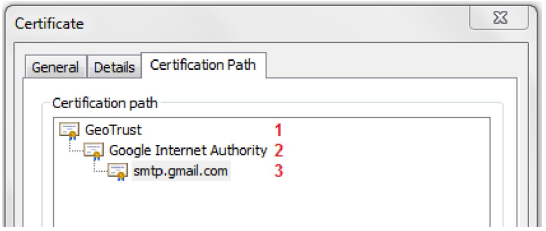
On the next screen you state a label for the installed certificate. You can chose this freely:



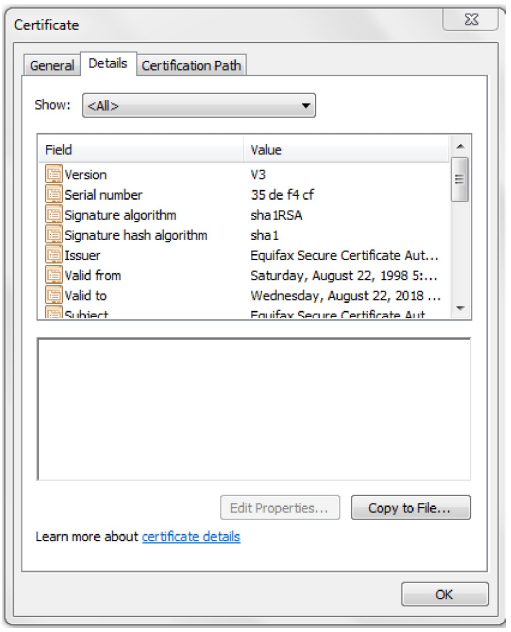
When clicking ‘Continue’ you might get an error message like this:



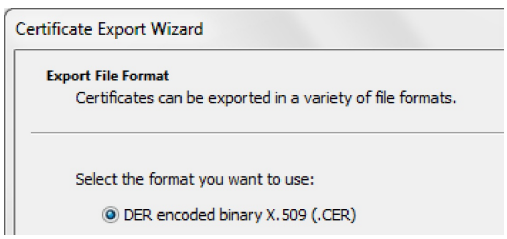
The problem here is, that the issuer of the certificate is not in the store. You need to import the issuer of the certificate first. You will need to import the whole list of the issuers starting with the first one. If you double click on the .cer file in windows you will be able to see the list of issuers:



So before we can import smtp.gmail.com we first need to import **GeoTrust** and then **Google Internet Authority**. For each of the other we need to click the certificate in the path above and then click 'View Certificate' and the 'Details tab':

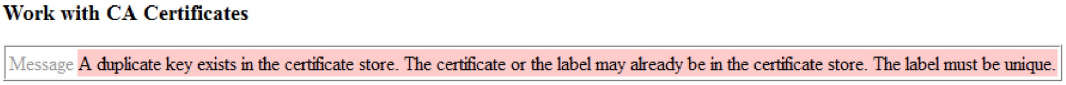


Now click 'Copy to File...' and select 'DER encoded binary X.509 (.CER)' as the output format:

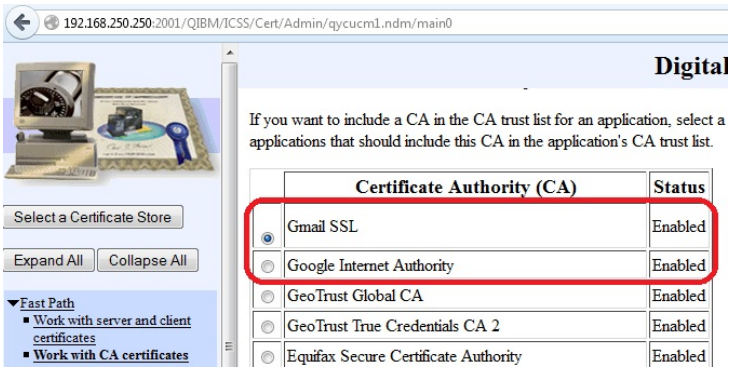


Finally you state the path and file name for the certificate. You should repeat this for all certificates in the path.

Now you can import the certificates from the top. This means that we need to install the GeoTrust certificate first, but during the import you might get this error message:



This means, that the certificate is already installed, so you can probably just ignore the error message and go on with the next certificate in the path. After importing all certificates the list now may look like this:



Now we can use the certificate for SSL emailing via Gmail.

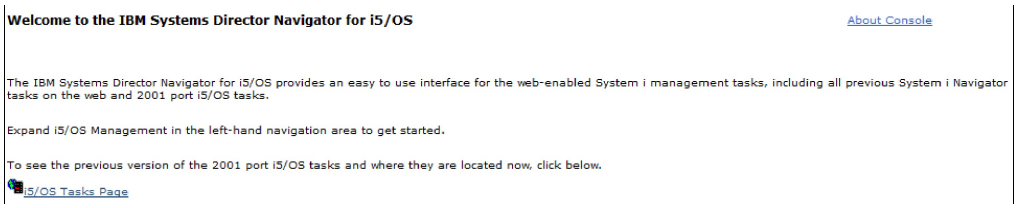
Graphical Designer: Enable SSL signon

Before you can use SSL for encrypted use of the graphical designer some configuration is needed.

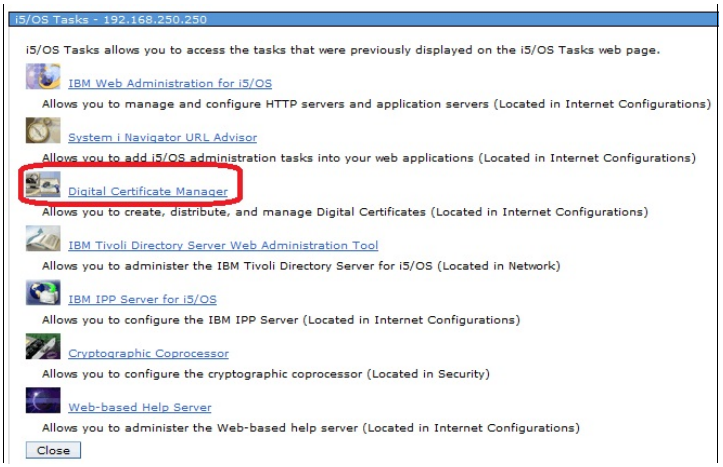
First you need to configure DCM (Digital Certificate Manager) as described on page 673, if you have not done so already. Now you need to signon to DCM via this web page:

http://your_system_name:2001

Now click the link named: i5/OS Tasks Page on the lower left:



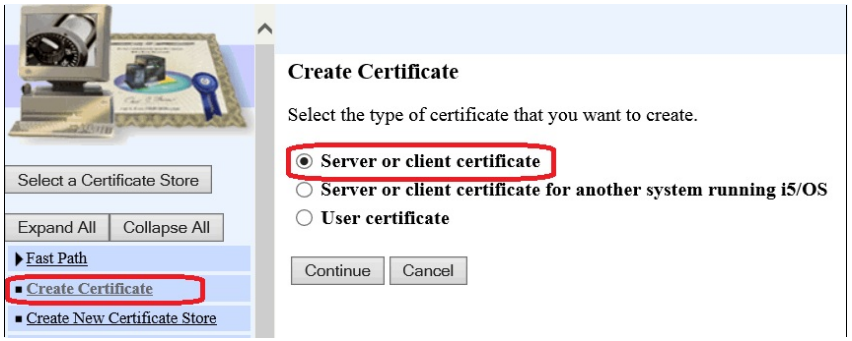
On the next screen you click the 'Digital Certificate Manager':



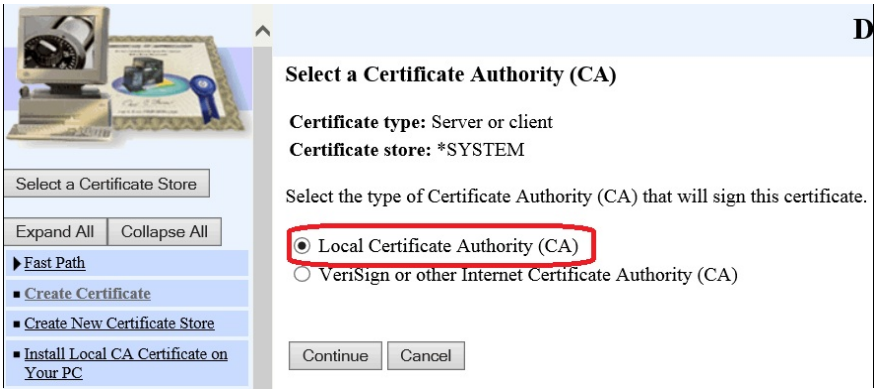
Now select the certificate store (*SYSTEM):

And sign on:

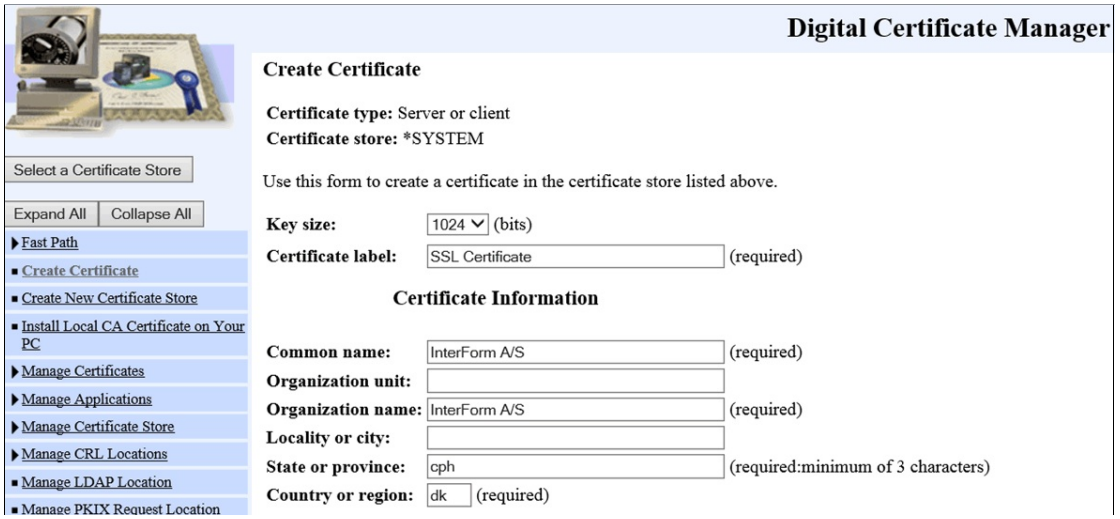
Now you can create a new certificate:



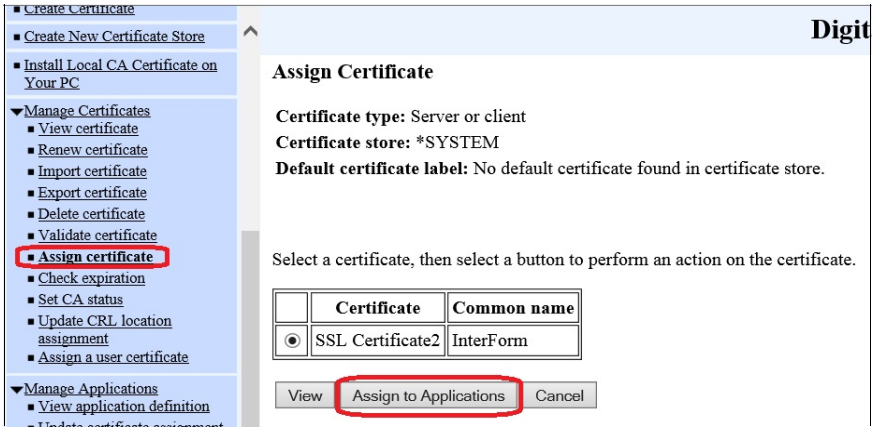
The certificate must be Local Certificate Authority (CA):



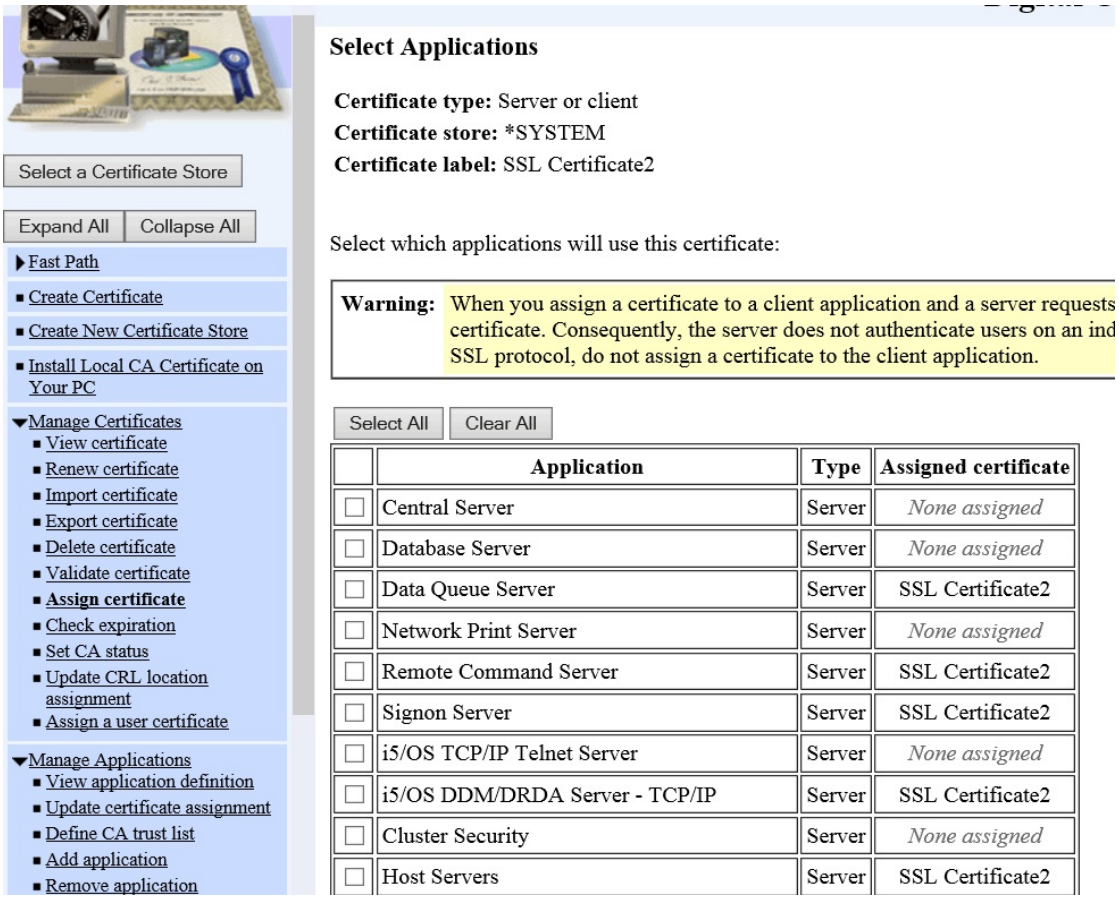
The certificate is configured:



Now you need to assign the certificate to some applications. To do that you need to select **Assign certificate** on the left under **Manage Certificates**, followed by **Assign to Applications** on the right/middle:



Now you will see this screen:



On the screen above you need to assign your certificate to the applications:

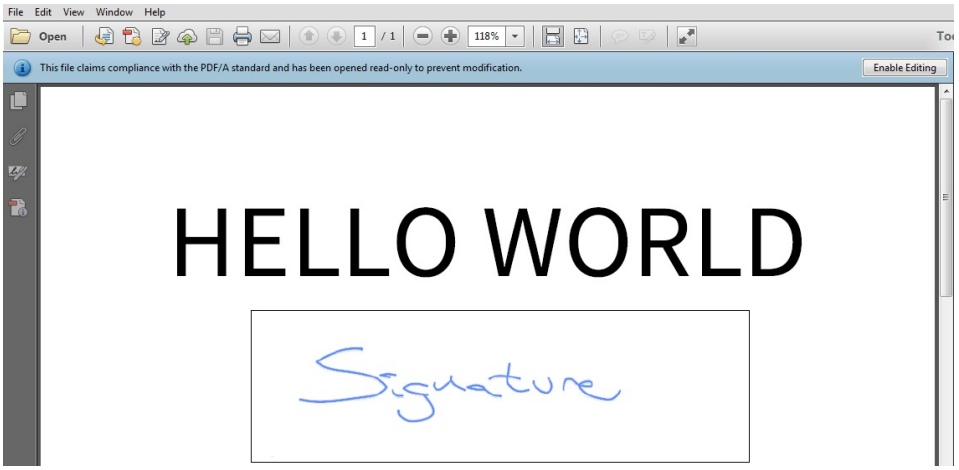
Data Queue Server
Remote Command Server
Signon Server
i5/OS DDM/DRDA Server - TCP/IP
Host Servers.

To use SSL when you use the graphical designer you just need to enable SSL on the sign on window as described on page 584 and onwards.

Appendix V: The Signpad Module

InterForm400 offers two way af signing a PDF file via modules:

1. Adding a digital signature - requires the PDF Security module.
2. Adding a 'real' signature to a PDF file - written with a special pen. This require the Signpad module and is described below. The signed PDF file could look like this:



The module can e.g. be used for letting customers sign a document, that they can see, at a desk and immediately convert this into a new, signed PDF file for archiving, emailing or even printing.

Prerequisites and limitations

To use the Signpad module you need this:

- A running InterForm400 installation with either a test license or permanent license, which enables the signpad module.
- A compatible signpad from Step-over. This can be purchased via InterForm A/S or InterForm business partners.
- A PC running windows, which is able to connect to the IBM i, that is running InterForm400.
- The PC should be connected with the Signpad. The signpad connects via USB.
- The PC need to run the InterForm Signpad Client.
- In order to run the Signpad Client the windows PC must have java (JRE) 1.6 or newer installed.
- You need to configure a port number via which the windows PC can connect with the machine running InterForm400.
- You need to activate the signpad in InterForm400 in Auto Forms Control or via a command.
- The signed PDF file can be archived, emailed or printed.
- The area (Frame) for signing must be defined in the overlay, or specified on a sign command.
- The SIGNINTER (may also be named TERMINTER) subsystem must be running.
- The signpad must be connected when you start up the signpad client. If you connect it later, the client will not be able to 'see' the signpad.

Installation of the InterForm Signpad Client

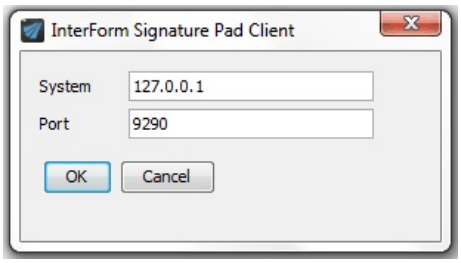
The InterForm Signpad Client can be downloaded via this link:

http://download.interform400.com/shares/SW/Setup%20InterForm%20SignPad%20Client.exe

The actual installation is quite simple and you are only asked about where you would like to install the client.

Configuration of the client

The first time you run the client you are prompted for some information via this window:



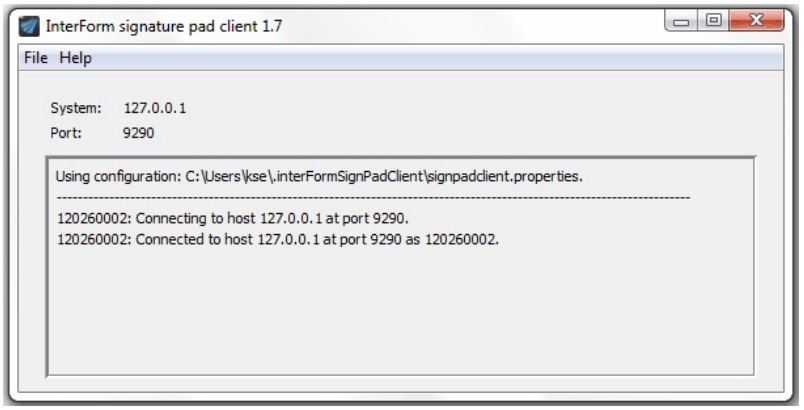
The parameters means:

System This is the system (or rather machine) on which InterForm400 is installed. You can need to specify either the IP address or the system name of the IBM i.

Port The port number to use for connection to InterForm400. This port should not already be used on either the PC nor the machine running InterForm400. Any firewall between the client and InterForm400 should not block this port port.

If you want to change the settings later you can find (if the client is running) the Signpad client in the windows notification area (in the lower right corner) by left clicking on the arrow and then the InterForm Signpad Client:

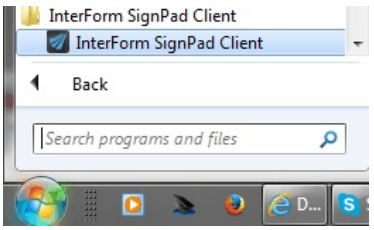
Then you will see the window below:



If you here select 'File' and 'Settings' you can edit the system and port. If the client is not active you can edit the properties file placed in C:\users\<user>.InterFormSignPadClient\.

Starting the client

The Signpad client can start by selecting Start, Programs and InterForm SignPad Client:



The client will not connect to InterForm400 unless Signpad support is enabled and the SIGNINTER subsystem in InterForm400 is running. The signpad must be attached to a USB port before you startup the client.

Configure the host

For communication between the IBM i and the client you need to select a free port number and select the same both on the client and the host. As default port number 9290 will be used. You set the port number for the host via options:
70. Configuration and licences
5. Configure signature pad

You set the port number here:

```
         Configure signature pad                                  PAD400D

Signature pad subsystem  :   SIGNINTER
  Library  . . . . . :     APF3812

Port . . . . . .   9290   9000-65535









F3=Exit   F12=Cancel
```

You need to stop the subsystem prior to a change and restart it afterwards.

Administration

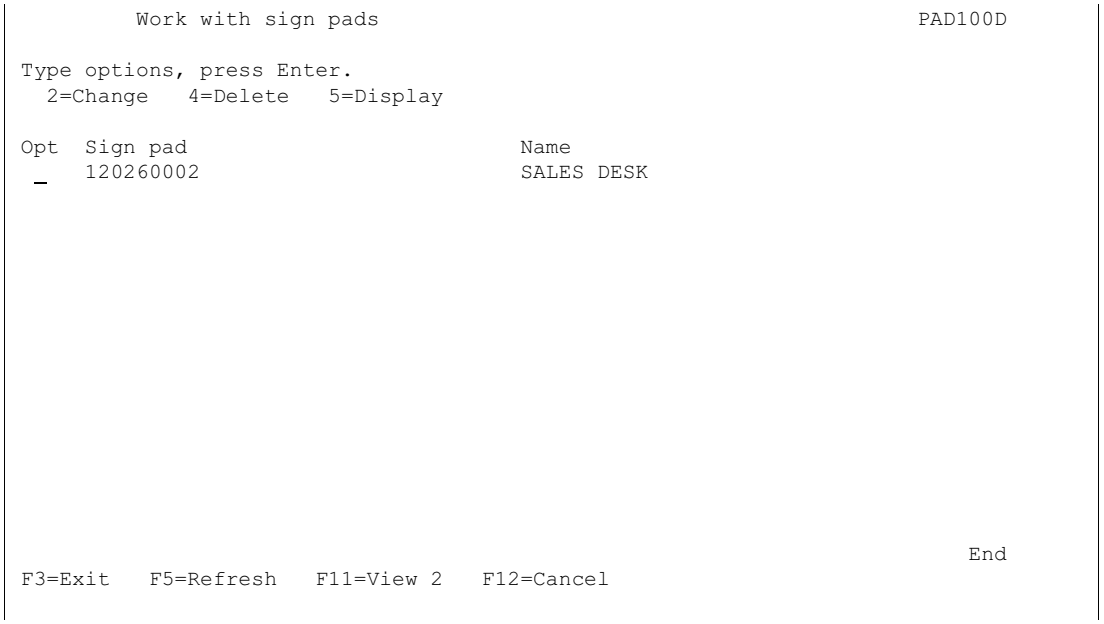
The signpad(s) can be configured via the Signpad menu in InterForm400. You reach this via options:

80. Administering InterForm400
40. Signature pad administration

```
Signature pad administration                    System.......: PMK250
                                                Workstn ID...: QPADEV000B
Subsystem....: SIGNINTER                           CCSID ....: 00277
   Library...:   APF3812                        User ID......: KSE
Port.........:  9290

Select one of the following options:

 1. Work with signature pads


 5. Display signature pad server log


10. Start the SIGNINTER subsystem
11. End the SIGNINTER subsystem
12. Work with the SIGNINTER subsystem

Option:


F3=Exit                   F6=Display messages            F12=Cancel
```

On the top you see the actual subsystem and the port number, that is used for communicating with the signpad. This may not be SIGNINTER, it can be TERMINTER if you have upgraded from a previous InterForm400 version, and you can even also chose a different subsystem and library via the InterForm400 configuration as mentioned on page 40.

Via option **1. Work with signature pads** you can see which Signpad(s) that are visible from the host and you can also chose to assign an alias (name) for the signpad(s). As default both the Sign pad id and name will be the serial number:



With the settings above you can refer to the signpad as either '120260002' or 'SALES DESK' when you want to sign a PDF file.

Signing PDF files

You can sign PDF files in two ways:

1. Sign an existing PDF file via the **APF3812/SGNPDFF** command. This command is described on page **520**.

2. Sign via an **email finishing definition** in Auto Forms Control.

If you want to sign PDF files created in another way, then you need to use the SGNPDFF command. This can e.g. be called directly after running the MRGSPLFPDF command. If you use a PDF file naming definition, then you can call the SGNPDFF command via a closing exit program in the definition.

For the actual signing process the signer is able to first view the complete document if preview is activated. The job will halt (without a timeout) for the signer to actually sign the document - unless the signpad is connected in which case an error message will be sent:

```
                      Additional Message Information

Message ID . . . . . :   APF5470       Severity . . . . . :   00
Message type . . . . . :   Sender copy
Date sent  . . . . . :   08/04/15      Time sent  . . . . . :   14:25:14

Message . . . . :   Signature pad 120260002 for AFC output queue not available
  (R I).
Cause . . . . . :   Signature pad 120260002 for AFC output queue QUSRSYS/EMAIL
  not available.
Possible choices for replying to message . . . . . . . . . . . . . . . :
  R -- Retry operation in error.
  I -- Ignore the signing process for the pdf file.
```

When the actual signing starts the signer has 5 seconds to complete the signature and the signed PDF file will be created after the 5 seconds time out.

Signing via the SGNPDFF command

One way of signing is to add a signature to an existing PDF file. This is possible with the command, APF3812/SGNPDFF as described on page 520.

Signing via an email finish definition

Before you decide to use an Auto Forms Control output queue for signing via the signpad you need to consider, if this should be implemented on a (new) specific output queue as the job will be standing idle waiting for the sign procedure to end, which will prevent any other processing on the same output queue while waiting.

First you need to assign a signpad to the specific output queue in Auto Forms Control. This is done from the InterForm400 Main Menu via options:
5. Work with Auto Forms Control
1. Functions attached to Output Queues

And select 2=Change for the specific output queue:

```
         Update Auto Forms Control Definition                        AFC302D

Output queue . . . . . :  EMAIL
  Library  . . . . . :    QUSRSYS

Type choices and then press Enter. Press F3 or F12 to exit.
  Description  . . . . . .  Email demo
  Autostart job  . . . . . .  Y               (Y N)
  Code page  . . . . . .  *SYSVAL          Number, *SYSVAL      F4=List
    When to use code page  . .  *SPLFATR         *SPLFATR, *ALWAYS
Default output output queue and printer type
  Output queue . . . . . .  HPLJ500          Name, *WINPRINT
    Library  . . . . . .    QUSRSYS
  Printer type . . . . . .  HP4D


Optional template AFC-definition to be executed after this definition
Template AFC-definition:
  Output queue . . . . . .
    Library  . . . . . .
Signature pad used by jobs in this output queue.
  Sign pad . . . . . .  SALES DESK                  F4=List
F3=Exit      F4=Prompt          F10=Additional parameters   F12=Cancel
```

In the bottom you can state the signpad to be used for this output queue - if a definition selects the signpad option.

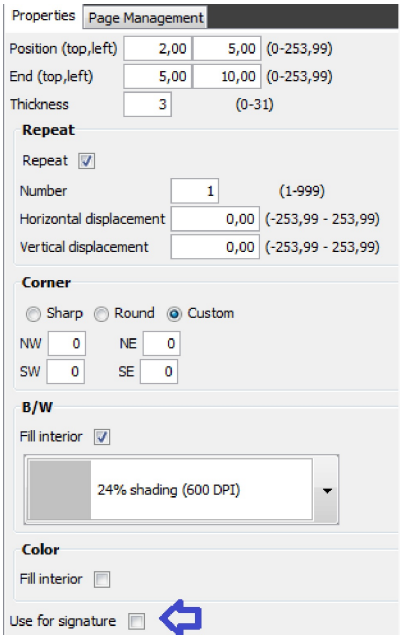
For the email finishing definition you activate the signpad via option **9. Encryption and Signature:**

```
        Work with Encryption and Signature Information               MAI380D

Definition name  . . . . . : MAIL_TABLE
Description  . . . . . . . : Multiple email receiver in table

Type choices, press Enter.

Encryption information
  Encrypt PDF File . . . . . . . . . N              (Y=Yes, N=No)
  User Access Restrictions . . . . . *NONE          *NONE, *NOPRINT ...
                                                       ... *NOCOPY, *NOEDIT

  PDF Owner Password . . . . . .

Digital Signature Information
  Digitally Sign PDF File  . . . . . N              (Y=Yes, N=No)
  Certificate  . . . . . .          Name, *SENDER
  Organisation . . . . . .

Signature Pad Information
  Sign PDF-file on sign pad  . . . . Y              (Y=Yes, N=No)
  Preview  . . . . . . . . . . . . . N              (Y=Yes, N=No)
F3=Exit    F12=Cancel
```

You also need to specify at least one signpad frame in the overlay, that you are merging with. The last one will be used. If you forget to specify that the AFC job will halt with an error and you will be able to see the reason in the joblog:

```
                      Additional Message Information

Message ID . . . . . :   APF5468       Severity . . . . . :   00
Message type . . . . . :   Escape
Date sent  . . . . . :   08/04/15      Time sent  . . . . . :   14:25:14

Message . . . . :   No signature boxes exists in the pdf file.
File /APF3812Mail/PDFtemp/P0000000.007.pdf has no signature boxes.
```

The signpad frame is set in the overlay on the frame element like so:



Refer to page 608 for a full description of the frame element.

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