Nexus 10.1
Reference Manual

ESKO
artwork

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Chapter 1. Introduction

1.1. General

This manual will describe the complete operation of the Nexus workflow management system. In some cases when specific ArtPro related modules are used within the Nexus environment, references will be made to the ArtPro documentation when appropriate. At the end of this manual an index is provided to facilitate easy finding or specific topics when required.

1.1.1 About Nexus

Nexus is a comprehensive workflow management system that automates the pre-press production workflow in commercial printing as well as packaging and labeling environments.

Nexus offers optimum performance and a level of functionality unmatched in the industry. It adds flexibility to your process, enhances your control, and boosts your productivity.

Nexus is a fully modular and flexible workflow system, build from a number of main modules, allowing you to configure your own system tailored to your needs.

Nexus easily integrates with the equipment and software that you have currently in operation, even allowing to communicate with other RIPs or workflow systems since each module has its own supported input and output formats.

The first module, NexusImport handles the import of PDF 1.6, PostScript 3, TIFF/IT as well as ArtPro native data.

NexusProcessor, the second main module, handles all content related modifications like versioning, double burn and automated Step and Repeat.

The third module, Nexus Basic RIP actually performs all the necessary processing to calculate proofs as well as the final films or plates, regardless of the brand of proofer, imagesetter or platesetter being used, based on PostScript input files.

The PDF Rip does the same as the Nexus Classic RIP, but based on PDF files as input.

The PDF Processor performs a number of actions, varying from connecting the page boxes and separations, to adding marks on PDF files in order to make the file ready for the RIP.

1.1.2 About the Manual

The rest of this chapter will contain the hardware requirements, software components of the system, and the installation requirements.

Chapter 2 covers the complete NexusManager user interface.

Chapter 3 gives a full explanation on how to define and edit workflows.

Chapter 4 covers the different ways to send files and jobs through the workflow system.

Chapter 5 until 10 explains all activities one by one in full detail.

Chapter 11 gives additional information on the screening used by Nexus, including the calibration possibilities.

Chapter 12 gives an overview on how color management can be implemented in Nexus

The Appendices at the end contain a schematic overview of all activities and their necessities, along with information on specific procedures and functionality, such as MIS integration, User Keywords and the Decorate Editor.

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1.2. What's new in Nexus 10.1

A list of all new functions in Nexus 10.1, and a crossreference to the appropriate place in the manual is given below.

- **Compatibility**

  Nexus 10.1 is compatible with ArtPro 10.1, and is fully compatible to the Enfocus PitStop 10 PDF library.

- **Pantone+ Ink books**

  When installing Nexus, the Pantone+ ink books are put in the "PantonePlus" folder on the server.

- **File Select**

  The File Select activity now contains an option to select ArtPro or PDF documents based on the separations in the document. See 5.1. Select File on page 156

- **Open File**

  The Open File activity now allows to use Folder Replacement. See 7.3. Open ArtPro File on page 185

- **Export PDF**

  The Export PDF activity contains a number of new options:
  - Downsampling for 1-bit images
  - Optimize White Objects
  - Screening Registration
   See 7.9. Export PDF on page 218

- **Select Objects**

  By selecting Objects > Screen Name and leaving the "Screen" field empty, you can now select objects without screening. See 8.18. Select Objects on page 253

- **Modify Separation**

  In the Modify Separation activity, you now can update inks from the ink book, and you can set separations to overprint. See 8.22. Modify Separations on page 259

- **PowerTrapper / PDF PowerTrapper**

  PowerTrapper, the trapper functionality from other EskoArtwork applications, has now also been added to Nexus.

  PowerTrapper is a Nexus Processor activity, allowing to trap Art-Pro files. See 8.39. PowerTrapper on page 269.

  PDF PowerTrapper is a PDF Procesor activity, allowing to trap PDF files. See 10.15. PDF PowerTrapper on page 399

- **PDF Prepress**

  A new option was added, "Update Spot Color Equivalents", to update the spot color values based on the ink book. See 10.2. PDF Prepress on page 369

- **PDF Preview Generator**

  The maximum resolution for the Preview Generator has been changed from 120 to 300 dpi. See 10.13. Preview Generator on page 391

- **Shuttle Server**

  The Shuttle Server has been updated in Nexus 10.1. Therefor, recent Shuttle Clients are necessary. The supported Shuttle Clients are:

  - DeskPack 10.1 Assembly 5 or higher

  - ArtPro 10.1 or higher

  - Shuttle Standalone 10.1 or higher

  - Neo 10.0 or higher.

1.3. Hardware requirements

All up to date Hardware Requirements can be found online:

http://www.esko.com > software > Hardware Requirements .

- **Virus Scanner on Windows**

  Virus scanners must be disabled for the Jobs folder and for the Nexus application folder for Nexus to run correctly

- **Spotlight on Mac OS X**
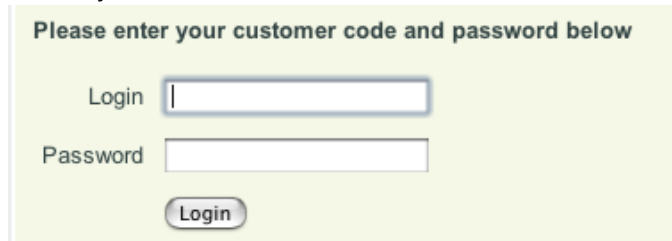
  When running Nexus on Mac OS X, Spotlight must be turned off. Otherwise, Nexus will not be able to remove temporary files, and will not be able to find all the files it needs.

1.4. Download center

EskoArtwork provides software through the Dowload Center.

http://download.artwork-systems.com

1.4.1 Download Center Login

When arriving on the download pages, a username and password is asked. If you do not know your customer code and/or password, please contact your local dealer.

Please enter your customer code and password below

Login

Password

Login

You can change the language in the dropdown in the upper right corner.
By entering your username and password, you arrive at the Download Center. Select the product (in this case Nexus or NexusManager) by clicking the appropriate icon.

1.4.2 Tools & Drivers

After selecting the product, you can open the "Tools & Drivers" page, by clicking the Tools & Drivers button at the bottom of the page. This Tools & Drivers contains all tools & drivers you might need for the selected software, e.g. the Aladdin HASP hardware key driver.

1.4.3 Select platform and version

There are different versions available for Nexus: Mac OS X Intel and a Windows version.

More information is available on www.esko.com

As from Nexus 10.1 on, the following platforms are supported for the server:

- Apple Macintosh Intel OS 10.5, 10.6 and 10.7 Server or Client
- Microsoft Windows 2003 Server SE (SP4) 32-bit
- Microsoft Windows 2008 Server 32-bit
- Microsoft Windows 2008 Server 64-bit
- Microsoft Windows 2008R2 Server 64-bit

Nexus support a maximum of 4 Gb of RAM for each module that runs on Windows 2008 Server 64-bit. This allows memory consuming processes to run more smoothly

Please note that the Agfa and HighWater PCI interface cards will not be supported on Nexus 9.5 or higher running on Windows 2008 Server. They will continue to work as before on Nexus 9.5 running

on Windows 2003 Server. These cards are mainly used to drive the Agfa Avantra range of image setters, and some Agfa AccuSet and Agfa Galileo models are also supported. (see 1.5.4 Highwater card and driver on page 23)

1.4.4 Request License

To upgrade to Nexus 10.1, you should request upgrade licenses on the Nexus 9.5 page in the Download Center. Once these upgrade keys are available, you can create a build and download Nexus 10.1 from the Download Center, install it, start the Esko Local License Manager, and activate the upgrade license.

Note:

If you want to move the upgraded Nexus server to another machine, it is advised to first upgrade Nexus to 10.1 on the old machine as described above, deactivate it, install Nexus 10.1 on the new machine, and use the keys generated when deactivating to activate Nexus on the new machine.

1.4.5 Apply Licensing

A personalized Nexus version is going to be made. The email address (found from our dbase) to which an e-mail will be sent when the Nexus software is ready to be downloaded, is shown below. If the e-mail address is incorrect, or if the email should be send to another address, you can define the e-mail address in the input field.

An e-mail with the download URL will be sent to

documentation@esko.com

(Create build)

The creation of the build takes several minutes. Once the build is created, it will be shown in the Download Center, and an e-mail will be sent. This e-mail will contain the URL where the build can be downloaded.

You will download a disk image (.dmg) that has been compressed with gzip (.gz) Normally your internet browser will automatically unzip the archive leaving you with two files on the desktop: the .dmg.gz file, and the .dmg file which you can mount by double clicking it (if your internet browser doesn't mount it automatically).

If your internet browser doesn't automatically unzip the downloaded file or doesn't recognize it, just save it to your desktop and drop it on Stuffit Expander.

When downloading an OS X version on a station in another Operating system (e.g. Intel), save the .gz file to disk, move it to the OS X station, and unzip the disk image there.

The "Related Downloads" section contains manuals, release notes and other downloadable files related to the selected software.

Product Key files containing the Nexus license should be downloaded as well. Product keys are marked with Activated when they are already in use, not activated when they haven't been used or partial when they are partially in use, in other words, when one or more licenses are used of the product key instead of all licenses.

1.4.6 My Builds

Nexus 9.0 WIN Build 21 - 40097.exe	40097 Enc:13821 (Nexus 9.0 WIN Build 21)

The software can be seen and downloaded from the My Builds list for 48 hours after building. These builds can be downloaded by clicking the link. Next to every link, the Version, the dongle and its encoding, the creation date and time, and the time before purging is shown.

l	22 May 2008 14:58	71 hours 33 minutes (delete now)

1.4.7 Installation

The installation of an OS X version is done through an Installer found on the mounted volume. Do NOT move the installer from the mounted volume, as the installer will result in an error message when run from another location.

For more info on the actual installation, see later.

1.5. Installation guide

This installation guide describes briefly how to install a Nexus workflow system on a Windows or Apple platform. It does not discuss the installation of the operating system itself, therefore we suggest to read the available Microsoft documentation on installation of servers.

1.5.1 Nexus installation folder

Pay attention to the fact that the installer for Nexus 9.x or higher uses Install Shield and installs in the selected folder, instead of older versions that were installing in a Nexus 9.x subfolder automatically.

1.5.2 Before you start

• **The operating system**

Before you start with the installation of Nexus, make sure that Windows 2003 or 2008 for server is installed or Apple OS X Server. More information can be found on http://www.esko.com.

Please be informed that Terminals services needs to be disabled before starting the installation on Windows.

If not, error message "(-5006:0x80004005)" will appear.

- **Hard disks**

  From the recommended configuration for a Windows platform, we know that every system has ideally at least two hard disks. The first, 36 GB disk is used as C drive, and will contain the operating system and all system related applications and files. Nexus is always installed on a hard disk that isn't used by the operating system. For basic configurations this would be the 72 GB disk standard delivered, which is the minimum size for Nexus and all files that will be generated. In the case that more extra disks have been installed, they may be combined as one volume to be used by Nexus. The total available hard disks size can be checked in Windows by double clicking on "My Computer" or in the "Disk Manager" (right mouse click on My Computer – Manage – Disk Management).

- **network (for Windows platform)**

  The network connectivity for the Nexus server will be done by using the TCP/IP protocol. Therefore, the TCP/IP services must be installed during the initial installation. The server must be assigned a valid IP address in the range being used at the customer site. By right clicking on the networking icon on the desktop, and select properties. The different connections will be showed. Right click the local area connections, select properties again. Select the Internet Protocol component (TCP/IP) and press properties. Here you must specify a fixed IP address, and not a dynamic one through DNS
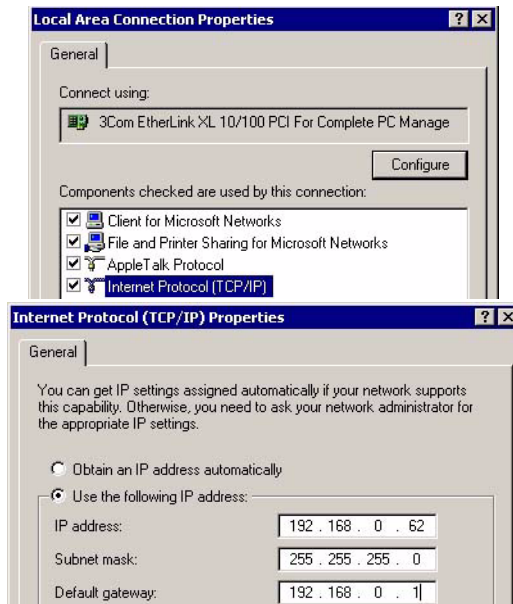
1.5.3 Nexus volume

- **Services for Macintosh (Windows 2003 Server only)**

  Before being able to setup the Nexus volume, you have to make sure that Services for Macintosh have been installed on the server. By default the Services for Macintosh are installed on Windows Server. It can be started in the Services:

  - right-click on 'My Computer' and select 'Management'

  - In the Computer Management, click 'Services and Applications' - Services

  - Double-click 'File Server for Macintosh' and click Start

  If necessary, the Services for Macintosh can be installed through the Windows Component Wizard. To open this Wizard, click Start, point to Settings, click Control Panel, double-click Add/Remove Programs and then click Add/Remove Windows components.

  In components, click Other Network File and Print Components, and press details. Select the File Services for Macintosh and confirm. When File Server for Macintosh and TCP/ IP are both installed, The Apple Filing Protocol over TCP/IP will be enabled automatically. If the Appletalk protocol was not yet installed, it will now be done automatically. You don't have to restart the system, for these changes to activate.

  Services for Macintosh are only available on Windows 2003 Server.
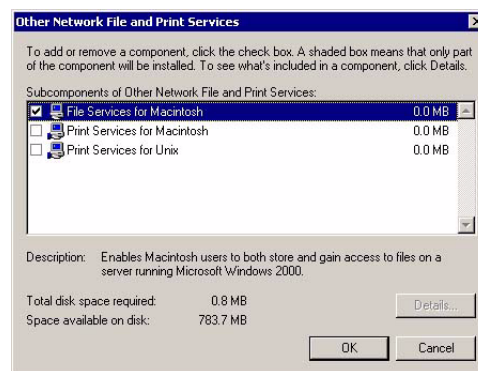
- **Setup Nexus_Mac**

  On the hard disk used to install Nexus, a folder must be created called "Nexus_Mac". This folder must be accessible from the operators Macintosh. To enable this, the folder should be shared as a Macintosh Volume. Following steps describe how to setup this Mac volume.

  - right mouse click on "My Computer" icon on the desktop

- choose "Manage", the Computer Management window will open
- choose "Shared Folder"
- double click on "Shares" in the right window
- right click on the right window and choose "New File Share"

- browse to the "Nexus_Mac" folder that you have to share and click ok
- check the option "Apple Macintosh"
- enter in the field "Share name": Nexus_Mac
- You will see that Windows 2003 enters "Nexus_Mac" in the field "Macintosh share name" automatically too.
- confirm
- click on "Next"
- select "All users have full control"
- click on "Finish" The Nexus_Mac share should always be a folder, and not a full drive such as E:. If the complete disc is shared, Nexus Edit will not be able open ArtPro files directly from within the Manager GUI.

• **Define a guest account**

To be able to access the Nexus_Mac volume from an Apple Macintosh workstation, a guest account has to be setup for this volume.
- right mouse click on "My Computer" icon on the desktop
- choose "Manage", the Computer Management window will open
- choose "Local Users and Groups"
- double click on "Users" in the right window You will see that the account "Guest" is disabled. You have to activate it:
- right mouse click on "Guest"
- choose "Properties"
- disable "Account is disabled"
- disable "User must change password at next logon"

- enable "User cannot change password"
- enable "Password never expires"
- click apply and ok
- close the "Computer Management window"
- restart the system

1.5.4 Highwater card and driver

For customers outputting film to an Agfa Avantra imagesetter (or a Printdrive over Apis), additional drivers for the Highwater or Apis card must be installed. This part of the installation is thus optional and only meant for these customers.

Before installing the Highwater card driver, the hardware card must be plugged in first into one of the available PCI slots on the server. In order not to damage the equipment this should be done very cautious. Power cables from computer and monitor should be disconnected. Also the cable between monitor and the computers graphical board is ideally disconnected. After opening the computer, the Highwater card must be plugged into a PCI slot. Then the computer may be closed, cables reconnected and the system restarted.

Windows 2003 Server will immediately detect the new hardware and show a message. Follow the installation wizard which will ask at a given moment to point to the driver of the new hardware.

The drivers are not loaded yet, therefore you must browse to the folder "/Nexus_Mac/Nexus9/AgfaOnHw_Install/Win2003/ Select the "hwplot" file. This is an INF-file for use on Windows 2003. Press "next", The installation wizard will continue the Highwater installation. If it has finished, you should now be able to see your Highwater card HW47X/HW77X device listed in the Device Manager (My Computer – Manage – Device Manager).

To finalize the Highwater installation, browse to Nexus_Mac/ Nexus9/AgfaOnHw_Install/ and run the application "InstallWin2003" After restarting the Server again, the Highwater interface board is completely installed.

Note:

Please note that the Agfa and HighWater PCI interface cards will not be supported on Nexus 9.5 (or higher) running on Windows 2008 Server. They will continue to work as before on Nexus 9.5 running on Windows 2003 Server. These cards are mainly used to drive the Agfa Avantra range of image setters, and some Agfa AccuSet and Agfa Galileo models are also supported.

1.5.5 Activation

The Activation of the software is done using the EskoArtwork Local License Manager. For a full explanation on how to use the EskoArtwork Local License Manager, we refer to the EskoArtwork Local License Manager documentation.

1.5.6 Starting and quitting Nexus

- **Create shortcuts**

Nexus is ready for use. But for easy launching we will create some shortcuts from Control on the desktop of Windows 2003 Server. The shortcut can optionally be stored in a folder on the desktop.

Browse to /Nexus_Mac/Nexus9/. Right mouse click on "Control" and drag it to the desktop. In the menu which appears, you select "Create Shortcut(s) Here". Also for NexusManager, it is handy to create a shortcut on the desktop of the Mac.

- **Nexus Configurator NexusConfig**

The NexusConfig application allows to define presets for Nexus and to copy settings from previous versions of Nexus, e.g. when upgrading to a new release. See 1.8. NexusConfig on page 32

- **Starting Nexus**

To launch Nexus on the Windows 2003 server, you just have to start the Control. This may be done by double clicking the shortcut, just created on the desktop.

Consequently, Nexus launches the Portserver. This application takes care of all communication between Control and NexusManager.

The Portserver window will open to show debugging information, but this window may be minimized. The second step is to launch Control, which will open the Control window as shown.

If Control is started the very first time, it will launch all the Nexus modules. By launching all the modules the first time Nexus is started, it will register them. This is only done if you start the application for the first time. After a while, the modules not being used will time out and close. The modules used by certain workflows will remain active.

All these modules, being monitored by control are launched in minimized mode, and there is very rarely a reason to maximize them. The last step is to start NexusManager from one of the Mac workstations. When prompted for the TCP/IP address, enter the TCP/IP number for the Nexus server and press connect. It is possible to store some default IP addresses in the Manager as explained in Chapter 2. NexusManager, 2.1.3 Servers on page 37. Chapter 2. NexusManager, 2.1.3 Servers on page 35.

- **Quitting Nexus**

  On the Macintosh, NexusManager can be quit the usual way for Mac applications. To quit Nexus on the Server, the Control window must be made active. The window is active if the menu bar has blue color. Then, the letter "q" (no capital Q!!!) must be pressed. In sequence all RIP modules and the Portserver will shut down. It is strongly advised never to shut down the individual modules separately, since this may cause problems when launching Nexus the next time.

1.6. Pre Installation requirements

Following list is just an overview of items that should be taken into account, when a new Nexus Workflow solution is implemented at customer site, and it serves as a reminder for Field Engineers and Customers.

- **IP addresses**

  Each computer will need an IP address for the local network connection. It is advised to have Nexus in the same subnet as the Macintoshes. New TCP/IP addresses should be assigned by the local System Manager to avoid duplicates on the network. In the case modem support will be provided, two additional addresses for the R.A.S. (Remote Access Service) will be requested.

- **Location**

  Have a suitable location for the computer, monitor, keyboard and external drive cabinet/RAID (if applicable). The location should ideally be within 3 meters of a network connection and should have a CAT5 cable long enough to reach the computer. If the RIP is driving the output device directly (over APIS), NexusRIP needs to be located within 6 meters of the output device.

- **Internet connection (optional)**

  Internet access on the Nexus Server can be necessary, so that the EskoArtwork support team can login the customer's system using NexusManager. This will allow for viewing and if necessary change workflow or job settings.

- **Power supply**

  Please ensure that a suitable U.P.S. (Uninterruptable Power Supply) is on-site if appropriate. Each computer requires 4 power connections. A U.P.S. system is only necessary if the normal power supply is insufficient.

- **Spooler location**

  If a spooler (e.g. RasterBlaster) will be driving the output device(s), a suitable location near the output device (within cable distance, usually 6 meters) needs to be chosen. The spooler will need sufficient room to accommodate the computer, monitor and keyboard. The Spooler runs on separate hardware with Windows 2003 Professional, and needs a valid IP address and sufficient Power supply as well.

- **Macintosh**

  All Macintosh computers used for printing to the RIP should have Mac OS X 10.2.2 or higher. All Macintosh computers that will interface with the RIP using NexusManager should have Mac X 10.4, and TCP/IP enabled with a valid network address. Hardware requirements for the Apple workstations can be found on the Esko website.

- **Local Integration**

  Please have a TCP/IP address and a valid user name and password for any output device or additional systems that the Nexus-RIP will be sending to, such as OPI servers, Brisque, Grapholas, Printdrive, HP plotter, Gerber impress, Creo Allegro, Purup, etc. to enable our technician to connect to the device.

- **Flexocal / Hybrid / Platecell Patterning**

  If these special calibration and screening techniques will be installed as well, some extra equipment needs to be on site.

  A high quality densitometer is very important. Since these techniques really focus on better highlight reproduction, an extremely accurate calibration is necessary.

  To measure the Flexo plates a VipFlex or alternative measuring device is recommended.

  For Flexocal, a Hard dot film in combination with the correct chemistry gives the best results. Please contact EskoArtwork for recommendations on suitable products.

- **Java Runtime Environment**

  In order to use the WebCenter Approval activity on a Nexus Server running on Windows, Java Runtime Environment needs to be installed and set up.

  After installation of Java Runtime Environment 6, it can be necessary to adjust the systems' Environment Variables:

  1. Go to the Control Panel

  2. Open System

  3. Select the Advanced tab, and click the Environment Variables button

4. In the System Variables, select "Path" and click Edit

5. At the end of the line, add the location of the JVM.dll file, separated by a semi-colon ;
   After installing Java Runtime Environment, the default path is C:/Program Files/Java/JRE6/Bin/Client/

In case any doubts raise on these requests, before the installation starts, EskoArtwork Support department must be contacted. To guarantee a smooth installation this list will be covered before the actual installation starts.

1.7. Principles of Operation

1.7.1 General Concept

Nexus is a Workflow Solution. This means files can be processed through Workflows, following the predefined combination of subsequent tasks.

As Nexus is a client-server based concept, all processing is done on the server, taking full advantage of Multitasking and (when available) Multiprocessing.

On the server side, there are a number of Modules: applications capable of executing one or various Workflow Activities. The workflows and jobs being processed, are controlled from an application on the client side, NexusManager, or Shuttle (either standalone or as plugin in another application) . Other applications on client side allow to view or edit intermediate files: files held from a workflow, or resulting files.

In the following part, the different Applications are briefly explained, as well as the Modules, and the intermediate file types.

- **Nexus Applications**

- Control
  Control is one of the major sub-applications of Nexus. Not only does Control schedule all the jobs, it is the link between the different processes, and takes care of the internal communication. This application knows the status of any job, workflow, module,... at any given time. The other sub-applications will be launched by Control when needed for a specific task, and quit afterwards to save resources. Some of the most used processes are the Print-driver, Interpreter, Merger, Bander, Assembler, Trapper, Purger, Processor, Browser,... and will be found as separate executables in the Nexus folder. However, the user will not have to deal with them as separate applications with individual user interfaces.

- Portserver

  Is the application that provides the means by which NexusManager communicates with Control on the server, by transferring Apple Events via TCP/IP.

  Where the Portserver runs as a separate application on the Nexus Server, it has been incorporated in NexusManager. Portserver ensures the communication between the Graphical User Interface and the server, but also between the different processes internally.

- NexusManager

  This is the Macintosh OS X based user interface to the Nexus server. In order to configure the server, set up or modify the workflows and to provide visibility on the processing of jobs, NexusManager must be used.

  When the application is launched, a connection to Nexus will be made over TCP/IP. NexusManager 8 is capable of connecting to two Nexus systems at the same time, and switching between servers is possible.

- Shuttle

  Shuttle allows to submit and monitor files, either from the Shuttle standalone application, or from a plugin in another application (ArtPro, Illustrator, Neo, ...). For more information we refer to the Shuttle manual.

- NexusEdit

  The Nexus concept has been made in such a way that jobs running through the workflow can be held and checked at any stage. When different tasks and file conversions are performed, intermediate files are saved in the job folders. NexusEdit provides the capability of viewing and editing these different file formats. For more info on these file formats, please see later in this chapter.

- Decorate Editor

  The Decorate Editor is an application that comes with NexusManager, allowing to change or create marks to be used in the Decorate activity. See 10.6. PDF Decorate on page 379 and Appendix 4 : Decorate Editor on page 454.

- Librarian

  Librarian is an application that can be downloaded from Artwork Systems' Download Center, allowing to define and edit Ink Collections. Ink Collections contain 6 types of settings : Ink Properties, Trapping Pairs , Document Size settings, Look Up settings,

Contacts and Press Inks. These settings can be used in a number of activities, e.g. the PDF Trapper. For more information on Librarian, we refer to the Librarian manual.

- Runlist Editor

    The Runlist Editor allows to change and define Runlists to be used in the Merge Pages activity. See Chapter 10. PDF Processor & RIP Activities on page 369 and Appendix 5 : Runlist Editor on page 468

- DotSpy

    DotSpy is an application to preview screened 1bit TIFF files. This is very comparable to viewing films on a light table. DotSpy runs on Mac OS X. On Windows, you can use Bitmap Viewer.
    For more info on DotSpy, we refer to the DotSpy Manual.

- Symphony Calibrator

    This standalone Macintosh based application is used to build calibration curves to control the output on the different proofers, imagesetters, platesetters and other output devices NexusRIP sends data to.

- **Nexus Modules**

    Nexus has been built up from a modular approach. The basic parts are NexusImport, NexusProcessor, , Nexus Basic RIP, Nexus PDF Processor and Nexus PDF RIP. Besides those, the functionality can be enhanced through additional stand-alone applications (e.g. WebWay, see above) or through adding specific optional activities, such as e.g. S&R Nested or specific output activities.

- NexusImport

    Is the software component that takes care of automating the import process. It takes in composite and separate PostScript files from different origin, as well as PDF files and ArtPro native files. The functionality is foreseen to perform a detailed preflighting during this import process. It can save the imported files as native ArtPro files, ready for usage on a Mac workstation running ArtPro, PowerLayout or NexusEdit.

    NexusImport also has the capability of printing the ArtPro files to PostScript, and pass them further on to NexusRIP. This feature may save considerable printing times on the individual workstations.

- NexusProcessor

  Enables jobs using comprehensive ArtPro functionality to be automated. Some of the most common tasks to automate are: vector based trapping, Step & Repeat, double burn, ink coverage calculation, applying regmarks,...

  Basically every tool in ArtPro which can be automated has been implemented in NexusProcessor.

- Nexus Basic RIP

  Is the core of the Nexus system and takes care of all the conversions to be made, and all the devices to be driven. It contains the processes that enable the customer to interpret, rasterize and screen jobs, and also sends them to the required output devices.

  NexusRIP supports all industry file format standards as well on input as on output side. The file types used internally are described in the section below.

- Nexus PDF Processor

  The PDF Processor performs a number of actions, varying from connecting the page boxes and separations, to adding marks on PDF files in order to make the file ready for the RIP.

- Nexus PDF RIP

  The PDF Rip does the same as the Nexus Classic RIP, but based on PDF files as input.

- **Nexus File Types**

  Nexus uses a number of file types throughout the process, each with its own characteristics and application. Every workflow activity needs one or more specific input file type, and has one or more output file type. Understanding this is crucial in linking activities together into workflows.

- ArtPro File

  An ArtPro file is a vector-based file, used to apply most Nexus Processor activities. An ArtPro file can be used in ArtPro, Powerlayout or NexusEdit

- OPPO file

  OPPO (OPtimized PostScript) is a vector-based file type, created from the imported PostScript file. An OPPO file can be separated, or it can be merged into one single file, for proofing or trapping purposes.

- PSTI File

  A PSTI (Professional System Technology Inc.) file, is an unscreened raster based file, which can be used for trapping purposes, and can be opened in the Insight part of Nexus Edit. A PSTI file consists of a file at CT resolution and a file at line art resolution.

- Screened 1bit TIFF File

  A screened 1bit TIFF file is a screened file per separation, ready for output to an imagesetter. These files can be viewed in DotSpy

1.7.2 Nexus Workflows

As explained Nexus consists of a number of individually running processes. Instead of applying these different tasks with their own parameters to a certain job one by one, the processes will be linked together in what we call a "workflow"

A workflow describes how particular type of jobs are to be processed, by selecting the activities that are required and defines how these are to be linked together. Workflows may differ on the input file types, the output requested or tasks to be performed such as CIP3 generation or Raster trapping to be applied. Nexus offers a wide range of standard workflows that can easily be modified depending on the customers individual situation and requirements, but also offers the possibility to create workflows from scratch. Defining and editing workflows is described in Chapter 3. Defining Workflows on page 89.

- **Running files through Nexus**

  Jobs may be send through an Appletalk printer, a hot folder or manually. Once a job is scheduled by control for a specific workflow, the necessary processes will be launched on the Nexus server. How to run files through Nexus is described in Chapter 4. Running Jobs on page 138.

1.7.3 Nexus on Mac OS X

Running Nexus on Mac OS X works exactly the same as running Nexus on Windows. The difference in configuration and setup can be found earlier. The rest of the manual has been set up for using Nexus on Windows.

Running Nexus on Mac OS X does have some limitations:

• Only sending files through hot folders or manual selection is possible. When running Nexus on Mac OS X, it is not possible to define an Appletalk Printer Workflow, or define a Printer Monitor in order to print directly to the workflow.

• Direct interfacing to an imagesetter is not possible when running Nexus on Mac OS X. Imagesetters can be driven by sending to external RIP's or spooler devices. Options and activities referring to these options, will be unavailable on Nexus OS X

1.8. NexusConfig

The NexusConfig application, found in the Nexus software folder, is an application that allows to set a number of configuration settings for Nexus, and that allows to copy settings and defaults from a previous install of Nexus, eg. when upgrading to a new release of Nexus.

The settings are saved in a file named "Nexus.env". Applying the changes can only be done if the Nexus Server is NOT running.

1.8.1 Nexus settings

- **IP Address**

  The IP Address used by Nexus. In case the server running Nexus, has more than one Network adapter (and thus more than one IP address), it is necessary to set this up correctly

- **Port**

  The TCP/IP port used by Nexus to communicate with Nexus-Manager. Default it is set to 10001

- **Bonjour**

  Bonjour is a way of broadcasting or setting up network connections without configuration or knowing the IP address. Using Bonjour, a Server can be selected from the NexusManager without knowing the IP address or any configuration.

Note:
Unless Bonjour is being forwarded, Bonjour only works within the same subnet. This means the first 3 parts of the IP addresses should be the same for Bonjour to work. Contact your IT department for more information.

Bonjour Broadcasting publishes the running state of the server to NexusManager (see 2.1.3 Servers on page 35). Bonjour is default pre-installed on Mac OS, and needs to be installed on Windows. Use the option to turn Bonjour Broadcasting on or off.

- **Nexus Shared Memory**

  The Shared Memory lines give info on the type of memory, address and size.

1.8.2 Librarian

The Librarian, an application that can be found next to the Nexus-Manager Application, can be configured either local (XML) or Remote, using SQL.

It allows to define and edit Ink Collections. Ink Collections contain 3 types of settings: Ink Properties, Trapping Pairs and Size Settings. Ink Properties contain definitions of inks, based on their name. The

definition contains CMYK value, RGB value, LAB value and Ink Type (Standard, Opaque, Varnish, Technical). The Ink Properties can be used e.g. in the PDF Trapper for Nexus. Trapping Pairs contain, as the name says, pairs of inks and the definition on how trapping should be applied.

- **XML**

  If the Librarian Driver is set to XML, Librarian settings will be retrieved from a local XML file, at a fixed location. When working locally, the settings defined in the Librarian, which will be saved in the folder Users/Shared/SettingsConfigurator, should be copied to the Nexus Server, in ../documents and settings/all users/documents/settingsconfigurator.

- **XML at Custom Location**

  If the Librarian Driver is set to XML at Custom Location, Librarian settings will be retrieved from a local XML file, at a defined location. The location of the XML file is defined by clicking the browse button "...". A path is removed by clicking the x button.

- **MySQL or PostgreSQL**

  When working Remote, the settings need to be published using PostgreSQL or MySQL. How to do so is explained in the Librarian manual. In that case, the address of the server should be entered in NexusConfig.

- **Test**

  The Test button allows to test the MySQL or PostgreSQL connection based on the settings .

1.8.3 Upgrade

The Upgrade tab of NexusConfig allows to copy settings from a previous version of Nexus. This can be used to maintain all setting files after upgrading Nexus.

Copying is done by selecting the previous location of Nexus, selecting the settings files to be copied, and click the Copy Settings button.

1.8.4 Apply Changes

This will save the changes to your Nexus settings in the Nexus.env file. Applying the changes can only be done if the Nexus Server is NOT running.

1.8.5 Dongle

Since Nexus 9.5 new licensing it allows to disable dongles. In order to get a permanent license for the software, you need to disable your dongle. Instruction can be found in the Nexus 9.5 New Licensing document that is available in the Apply Licensing section of the Download Center.

Chapter 2. NexusManager

2.1. Preferences

The preferences, containing besides the preference settings also position and size of job & workflow editors, list header and template user keywords, are saved in a Preference file (XML) in Library/Preferences/Nexus9.

2.1.1 GUI

- **Show Dependency Colors**

  For every *Dependency* type (File, Memory and Order), the visibility and preview color can be set. Using the checkbox, you can define if this type of dependency should be visible.

  By clicking the color patch, the *Color Picker* dialog will be opened (i.e. a Mac OS dialog) in which you can select the new color for the dependencies. It is advisable that, once you get used to certain colors for dependencies, these colors are not changed too much, as this might bring confusion.

- **Show Thumbnail**

  If the *Show Thumbnail* option is switched on, a thumbnail of the input file (opened ArtPro file, Imported PostScript file) will be shown next to the job info, if a job is selected in the *Job List*. The Preview can also be shown on the left in the Job Editor. The thumbnail can only be shown if the file has a preview.

- **MIS Integration**

  By enabling MIS Integration in the preferences, you allow Nexus to be integrated in an MIS workflow. For more information on MIS integration, see Appendix 2 : MIS Integration on page 446.

- **Ask Confirmation when deleting jobs**

  NexusManager will ask for confirmation when deleting jobs, if this option is on. Otherwise, jobs will be deleted immediately.

- **Ask Confirmation to close Job Window**

  Closing the Job Window will close the connection to this Nexus Server. Therefore, you have the option to get a confirmation when closing the Job Window.

2.1.2 Applications

In this tab you can define the location of the default editing applications to be opened from within NexusManager. Besides Nexus Edit and TIFF Editor, you can also define the PSTI Editor and PDF editor. The location of the application can be defined by using the Arrow button to browse. Removing an application is done by clicking the X button.

You can also define the location of the Automation Engine Pilot application in the Nexus Manager preferences:. This allows you to locate the Automation Engine Pilot on your Macintosh workstation. It adds the functionality to go to the Automation Engine job folder where the 'Copy to Automation Engine' activity has copied the file to. This can be done by double clicking on the 'Copy to Automation Engine' activity in the job editor of NexusManager.

2.1.3 Servers

In the "Servers" window all servers (Nexus systems) are displayed by name and IP address as defined for the local NexusManager client. This list will actually determine which Nexus servers will appear in the pop-up list to make it easier to make a connection to a Nexus server. When a server is defined, NexusManager will also store additional info in the preferences, like the recently submitted files, recent places and favorites used in the Remote Browser.

A server which is broadcasts its availability using Bonjour, will have a bullet icon on the left. For more information on Bonjour, see 1.8.1 Nexus settings on page 32.

- **To define a new Nexus server to work with:**

  1. Click the + button

  2. Fill in an arbitrary name for the server you want to work with.

  3. Type in the IP address for that server.

  4. Define if you want this server to be the default server. The Default server will be the Server selected in the popup when opening the New Connection dialog.

  5. Define if you want automatic connection for the server. Upon startup, NexusManager will attempt to connect to all these Servers immediately.

  The name of the server will appear in the pop-up list while the appropriate IP address appears in the IP address field when selected.

- **To modify attributes of a Nexus server already in the list:**

  For every defined Server, you can set the default path for Fonts, Pages, Links, Calibration files, Hot Folders, Spool Folders, Stitchers, ICC profiles and PDF Profiles. The paths are relative to the location of the server software. When connected to the server,

you can use the Browse function to define the paths. Using Folder Mapping, a file server can be implemented to be mounted both on the Nexus server and the Mac client.

1. Select the server you wish to modify and select "Edit" from the Edit menu, or use the shortcut ⌘-E, or double-click the Server in the list.

2. Make your changes

3. Click OK

- **To delete a Nexus server from the list:**

1. Click in the list on the server you wish to delete

2. Select "Delete" from the Edit menu, use the shortcut ⌘-Backspace, or click the - button.

The selected server is immediately deleted from the list.

Note: Please note that NO WARNING is issued ("Are you Sure….") when removing a server from the list

2.1.4 Advanced

- **Distance Unit:**

The available units are inch, mil, pica pt, PS pt, Q, bai (bai & Q: Japanese units for character size), cm and mm. In NexusManager they are needed e.g. to set trapping widths, preflight profiles, etc.…

In every input field, it is possible to use arithmetic operations, by entering +, -, * or /.

It is also possible to enter a distance in another unit than the default, e.g. entering "5inch" when the default unit is mm. The values will be recalculated to the default unit on the fly.

- **Font Size Unit:**

The same units are available. Text Units are used e.g. in the Trapper, and in the Selector activity

- **Update Period**

The *Update Period* defines how much time is left in between updating the NexusManager to the actual Nexus System. This is default set to 1 second, which means that the NexusManager will be updated every second. Of course, these timings depend on the amount of traffic to and from the server.

- **Workflow Template Folder**

Using this function, the *Workflow Template Folder* can be defined. The use of the *Workflow Template Folder* is explained under Workflow Editing, in Workflow Templates.

- **NeXML Template Folder**

  Using this function, the *NeXML Template Folder* can be defined. The use of the *NeXMLTemplate Folder* is explained under XML, see the TechDoc about NeXML which can be found on the Download Center.

2.2. Quit

Quits the NexusManager application. This has of course no influence on the Nexus Server applications.

Shortcut: ⌘ - Q: Quit

2.3. Connecting to a Nexus Server

2.3.1 Automatic Connection

If one or more servers defined in the Preferences have the "Automatic Connect" option enabled, NexusManager will automatically try to connect to these servers.

If no Default Server is set to automatically connect, or if this connection failed, NexusManager will not be connected to a server, and most options will be grayed out. In that case, you need to establish a connection yourself.

2.3.2 New Connection

A new connection is made using the New Connection function in the File menu, or using its shortcut, ⌘ - N. The Connect dialog will open.

- **Server - IP**

  Depending on the settings in the Preferences, the Server pop-up list will contain a number of preferred servers, while the IP address field will contain the appropriate IP address when selecting a specific server from the list.

  When no servers have been defined in the Preferences Menu, this pop-up list and IP address field will be empty.

  When a Default server has been defined in the Preferences Menu, this default server will appear in this pop-up list when launching NexusManager.

  It is also possible to connect to a server simply by entering its IP address.

  When the IP address is invalid or no Nexus Server is responding at the selected IP address, a red exclamation mark is shown when trying to connect.

  You can specify the portnumber after the IP address (e.g. 192.168.0.1:10005)

- **User & Password**

  If User Management has been set up, the user name and password need to be entered. See 2.6.5 Users & Groups on page 45.

  If the entered username or password is incorrect, an error icon is shown on the right of the User field.

  The administrator has super user privileges and should be used only with caution.

  The username will be shown in the title of the job window and the user rights will be restricted according to the group(s) the user belongs to.

  The Remember Password checkbox can be used to store the Username and Password

2.4. File Menu

2.4.1 New Connection

The New Connection function will open the Connect dialog, allowing to make connection to a Nexus Server. It is possible to connect to different Servers at the same time. See 2.3. Connecting to a Nexus Server on page 37.

Shortcut: ⌘ - N: New Connection

2.4.2 New Workflow

The New Workflow function will create a new workflow. For more information, see 3.1. New Workflow on page 89.

Shortcut: ⌘ - ⇧ - N: New Workflow

2.4.3 New Hot Folder

The New Hot Folder function will create a new hot folder for a workflow. For more information, see 2.12.8 Hot Folder on page 72.

Shortcut: ⌘ - ⌥ - N: New Hot Folder

2.4.4 New Printer

The New Printer function will create a new Appletalk printer for a workflow. For more information, see 2.12.9 Printer on page 73.

2.4.5 Run

The Run function allows to run a file through a workflow. If a Workflow is selected in the Workflow window, or if the Workflow Editor is open, this workflow will by default be used to run the file through. Otherwise, the workflow can be chosen from the dropdown list. For more information, see 4.3. Run File on page 144.

Shortcut: ⌘ - R: Run

2.4.6 Save

• **Save (General)**

The *Save* function under the File Menu will trigger Nexus to save the complete database on the server. This means that all modifications which have been made on the local NexusManager Client (e.g. new licenses, new workflows, modified workflows, etc....) will be saved to disk on the Nexus System.

Normally, all changes made through NexusManager are saved immediately on the NexusManager, so the *Save* function will only be used to force the Server to a save when something is going wrong.

• **Save Workflow**

If the Save function is applied with a Workflow selected in the Workflow list, or with a Workflow Editor window open, the particular workflow will be saved. Saving and restoring a workflow is described in 2.11.7 Save on page 66

• **Save Users & Groups**

If the Save function is applied with the Users & Groups dialog open, the Users & Groups settings will be saved. Users & Group settings are explained in 2.6.5 Users & Groups on page 45

• **Save Log**

If a Log window is opened, the Save function can be used to save the log to an external file.

Shortcut: ⌘ - S: Save

2.4.7 Restore

The Restore function allows to restore Workflows you saved earlier, or to restore Users&Groups settings saved earlier.

2.4.8 Close Window

The *Close* function closes the active window. If the selected window is a Job window, the connection to that server is closed. If the option Ask Confirmation to close Job Window is on, a confirmation will be asked before closing the connection

Shortcut: ⌘ - W: Close Window

2.5. Edit Menu

2.5.1 Workflow Edit functions

The topmost *Edit* functions can be used when editing a WorkFlow. See later: Editing workflows

- **Undo**

  Undo cancels the last change made to the Workflow. This can be adding or moving an activity, changing the parameters for an activity or removing some activities. While the Workflow is being edited, the number of undos is unlimited. When closing the editing window of a Workflow, the undo buffer is emptied.

- **Redo**

  Redo cancels the last *Undo* function performed on the Workflow. It is possible to *Redo* as many times as the *Undo* function was applied. Any change (adding, moving or removing or changing parameters) will empty the Redo buffer. This means that *Redo* is only possible immediately after using *Undo*.

- **Cut**

  Cut removes the selected activity or activities from the edited Workflow, and places them on the clipboard. This means the activities can be used to be pasted (see below) on another position, or in another Workflow, since the activities and their parameters on the clipboard are kept when closing the Workflow Editing window.

- **Copy**

  Copy puts a copy of the selected activities on the clipboard. The original activities remain unchanged. The activities on the clipboard can be used to be pasted on another position, or in another Workflow, since the information on the clipboard is kept when closing the Workflow Editing window. The *Copy* function, unlike the other editing functions, can be used on locked Workflows (i.e. if the Padlock is set to locked).

- **Paste**

  Paste inserts the activities on the clipboard (including their parameters) in the edited Workflow. The activities will be placed to the right bottom of the last selected activity.

2.5.2 Delete

The Delete function can be used to delete the selection: a workflow in the workflow list, a job in the job list, a Server in the Server list, ...

Shortcut: ⌘ *- Backspace: Delete*

2.5.3 Find

The Find function will activate the Search field in the active dialog, when available (Job list, Workflow list, ...)

Shortcut: ⌘ *- ⎁ - F: Find*

2.5.4 Select All

The Select All function can be used to select everything in the active window. When holding down the shift key, the function can be used to deselect everything.

Shortcut: ⌘ *- A: Select all*

Shortcut: ⌘ *- ⇧ - A: Deselect all*

2.5.5 Edit

The Edit function will open the selected item for editing.

Shortcut: ⌘ *- E: Edit*

2.5.6 NeXML Editor

The NeXML Editor allows to edit a NeXML file. The same editor window is opened to edit a NeXML file in the Monitor tab or when running a file (see 14.3. Run File on page 144).

The NeXML Editor allows to change the settings in any NeXML Ticket.

- **Activity & Label**

  In the pane on the left, all activities for which settings are defined in the NeXML file and their labels are shown. The list can be organized alphabetically by activity name or by label by clicking the column header. The labels can be edited.

- **Name & Value**

  By selecting an activity, the settings for that activity are shown on the right. If possible, the available values are represented in drop-down menus.

- **Edit Name**

  The name of a value can be changed by clicking the name, by selecting "Edit Name" or by double-clicking the name. In the Edit Name dialog you can type the new name, or you can select "Use Original Name". In that case, the original name of the value (i.e. as defined when exporting NeXML from an activity) will be used.

- **Edit XPath Expression**

  The Edit XPath Expression, which can be found in the contextual menu of a value, allows to insert or edit an XPath Expression.

- **Edit Popup**

  The Edit Popup function, which can be found in the contextual menu of a value, allows to change or define the values available in the popup. This function can also be used to turn an input field into a popup.

Multiple NeXML Ticket windows can be opened, and it is possible to copy activity settings (not individual settings) by dragging and dropping them from one window onto another.

An entry can be deleted using ⌘ - BACKSPACE or using the Delete function from the Edit menu.

2.6. Server menu

2.6.1 Edit Volume

As Nexus processes data, a lot of temporary files need to be stored on the system. This is necessary e.g. for retrying jobs. By default these files are stored in a directory called Jobs in the application folder.

In this folder, all the information and files, relating to a job are stored. You can see that per job, there is a separate Job folder, carrying the Job number. In these folders, all files that have been created during the processing of this job are stored. Also, there is a text file called Job log, that contains all information on the Job.

- **Path**

  The Path button offers the possibility to change the Name and Path of the default volume. Changing this Path allows the user to run Nexus on a relative small disc, but have the Jobs copied on a larger disc, or a storage solution for instance.

- **Purge at**

  The Purge At defines the percentage at which automatic Job purging will start. As soon as the selected Volume gets too full, the oldest completed Job will purge automatically. Jobs that are held, failed or aborted don't get purged, so that on a really full system it is possible that new jobs get purged automatically upon completing, although the purging time has been set later. The percentage value in the popup is a percentage of the total disc space. Next to the Purge percentage is shown how much disk space will be kept free. You can monitor the Volume using the Monitor Volume function, in the View menu. See 2.6.2 Monitor Volume on page 42

2.6.2 Monitor Volume

By pressing the Monitor button, the Monitor Volume window opens up. It is a floating window, that can be positioned freely, and kept open if necessary. As long as the disk space remains below the Purge point, the bar remains green. Once the Purge point is exceeded, the bar changes to red.

2.6.3 Devices...

The Device Contexts menu is a kind of local database containing a wide range of devices (proofers, imagesetters, platesetters, printers, etc....) and device parameters to help the user in setting up workflow parameters. When, as an example, a user wants to send

screened data to lets say an imagesetter, it is important to know the available resolutions for that specific brand of imagesetter. This information is contained in the Device Contexts database.

At any point in time when the user needs to specify parameters for a device in a workflow, NexusManager will look into this database to display all appropriate parameters for that specific device.

The Devices facility is invoked by selecting Devices... from the Edit menu to open the Output Device Information window. A user must have Administrator rights to access the device context. The Device function is dependent to the Server, so you must be connected to a Server first.

- **Enabled - Disabled Devices**

  The Device window shows two scrollable tree views, one for enabled devices and one for disabled devices. In the tree views, the items are grouped by proofer type or imagesetter. Only enabled devices will be shown whenever an activity editor (e.g. ArtPro, Assembler) shows a device popup, in order to facilitate the selection of device dependent variables.

  An enabled device is moved to the disabled list by clicking the arrow button. Similarly, a disabled device is enabled by selecting in the lower list and pressing the Enable button. Any changes are unsaved until the Save button is pressed.

- **Model**

  Shows the name and type of the Device. The model name can be altered by using the Modify button

- **Rotated**

  This popup should be set to the default orientation of the device, e.g. 0º, 90º, 180º or 270º. Drum devices would typically have an orientation of 90º or 270º.

- **Mirror**

  This option must be enabled for devices with a right to left scan direction such as the Celix.

- **PPD**

  For some devices, a PPD is available. By selecting a PPD, the info that can be retrieved from the PPD (such as resolutions,...) will automatically be filled into the appropriate fields.

- **Roll Fed / Sheet Fed**

  When setting up a device, you can determine if it is *Roll fed* or *Sheet fed*. When selecting one of these options, the button next to it, allowing to set *Roll Media* or *Sheet Media*, becomes available.

- **Roll Media**

  In the *Roll Media* dialog, you can set up different widths (actual width, imageable width and description).

- **Sheet Media**

  In the *Sheet Media* dialog, you can set up different sheet sizes (width, height and name) or you can add some of the *Standard Sizes*. Clicking *Add* will add the size defined in the Width, Height and Description fields in the sizes list, clicking *Modify* will change the selected *Size* to the values in the input fields.

- **Maximum Image Width and Height**

  These values, shown in preference units, describe the maximal image sizes for the selected device.

- **Resolutions**

  Available resolutions for the device. Clicking the + button will add a resolution to the list, clicking the - button will remove the selected resolution. The defined resolutions show up in the Manager.

- **Proofer Device**

  Output devices are separated into imagesetters and proofers. If an enabled device is selected and the Proofing Device box checked, when the OK button is then pressed, the ordering in the enabled list box will change so that proofing devices are shown at the end of the list. When a proofing activity is chosen, only devices marked as Proofer will be available, and when making image setter output, all other devices will become available

- **Proofer type**

  When setting a device as a *Proofer*, you can now define what type of proofer it is: Generic, RTL, Kodak, Presstek or Epson. When a proofer type other than *Generic* is chosen, the *Proofer* will only be available in activities connected to the device type. E.g. a device set as *RTL*, can only be chosen in Workflow Activities such as *Make TIFF for RTL Device*. Proofers set to be *Generic* can be chosen in any *Proofer* activity.

- **Proofer settings**

  Depending on the type of proofer selected, you can select the Model and the colors appropriate for your proofer.

- **To define a new device to work with:**

  1. Fill in an arbitrary name for a device you want to work with.
  2. Type in the appropriate parameters for the device: max width, max height, default orientation, reverse scan, and define the resolutions list (using the Add and Delete buttons next to the resolutions window)

3. Click the + button underneath the Devices list to add the device you created to the list of enabled devices.

The name of the device will now appear in the appropriate pop-up lists in NexusManager while the parameters for that device will be displayed.

- **To modify parameters for a device already in the list:**

    1. Click in the list on the device you wish to modify

    2. The name and parameters will appear in the appropriate fields

    3. Make your changes

    4. Click the Modify button next to the enabled Devices list

    The modifications are now updated in the Devices list

- **To delete a device from the list:**

    1. Click in a list on the device you wish to delete
       The name and parameters will appear in the appropriate fields

    2. Click the - button underneath the Devices list

    The selected device is immediately deleted from the list.

Note: Please note that no warning is issued ("Are you Sure…."). To recover from an unwanted deletion or modification you need to click Cancel which will equally disregard all other changes made during the device contexts session.

Click Cancel to disregard changes made to the Device Contexts menu. Click Save to accept changes made to the Device Contexts menu

2.6.4 Links and Pages

The Links and Pages function will open a dialog showing all Links or Pages found in the Links or Pages folder as defined in the Preferences (see 2.1. Preferences 2.1.3 Servers on page 35).
If the user has the necessary privileges, it is also possible to remove Pages or Links from the server, by selecting them and clicking the "Remove" button.

2.6.5 Users & Groups

Nexus allows to organize the operators, shift managers and administrators in users and groups, depending on priority and privilege level each of them has to get. The system has each user organized into one or multiple groups.

The user management is based upon a concept of different groups who have layered responsibilities. A user can be a member of up to 4 different groups. The group will determine the access level to jobs and workflows.

Note: Workflows and jobs are owned by groups: group A can not necessarily access workflows from group B and vice versa.

Note: If no settings for Users and Groups have been made, no Log-in is required and everyone has administrator rights.

- **Setting up Groups**

  To start defining the different groups, press the Add button and a New Group will appear in the Groups List. The default name for this group will be New group, New group1,... but can be changed at any time. The default rights given to a new group will be read and write workflow and priority change. A group may be removed by selecting it and pressing the - button, by the shortcut ⌘ - Backspace, or by choosing Delete in the Edit menu.

- **Administrator**

  An administrator can administer everything and has full control. To define an administrator, add a new group and give it all attributes. If no user with Administrator rights is defined, a warning will be shown, and a user with Username "admin", without password, will be created, and will be part of an "Administrator" group.

  Remark that checking the Administrator right will enable all other rights as well. Every user belonging to the Administrator group will be able to view, use, create and delete all workflows. For any job run through the system, they are able to change the priority as well. In addition, users with administrator rights are the only ones that can define system specific settings such as the device context, the user management, modules, volumes and licenses. Some of these settings can be viewed by other users as well, but cannot be altered.

- **Setting up Users**

  Once the groups are set up we can assign the "real" persons to the group they belong. Go to the "Users" tab and add new users. Enter the name of the user and his password and assign the groups to which this person belongs. Passwords and name are not case sensitive.

- **Saving and restoring groups**

  Groups and user setup can be saved to an external file, in order to restore it, e.g. when upgrading from one version to the next, using the Save function in the File menu, or by using its shortcut ⌘ - S, saving all settings (users, groups, passwords, etc.) into an external file.

Using the Restore function while in the Users & Groups dialog, such a file can be opened, restoring all settings as saved.

- **Workflow Groups**

  When new workflows are created, they will by default be assigned to the different groups the creator belongs to. This can be verified by opening the Properties. Only the operators who are member of the right production group are able to see and execute the constructed workflows. They are not able to edit the workflows and all workflow options will be graygrayed out in the Workflows tab.

  In the Group window of the Workflow Properties, we see a list of all available user groups in the left column. The right column shows the groups that have been assigned to the selected workflow. These settings can be changed only by someone with administrator rights using the add and delete buttons. These buttons will be disabled for all other users.

  When a workflow is not member of any group, it is visible to anyone. Administrators can always see and edit all workflows.

  For more info on Workflow Properties, see 2.11.2 Workflow Properties on page 64

2.6.6 User Keywords

It is possible to define Keywords, which will be available in the File Naming Template. User Keywords are defined by a Key (a 4 char unique code), and a Name (by which it will be shown in the list). A default value is entered, but this can be changed in the Run File menu or when using an XML file (see Appendix 1 : User Keywords on page 444 for more details).

- **Edit Server Side**

  If the Edit Server Side option is on, the User Keywords are stored on the Nexus Server, and thus become available to all Nexus operators.

Note: When installing a new Nexus version, you can copy the file containing the User Keywords from the old version to the new one. The file is named "TemplateKeywords.aeo".

2.6.7 XPath Expressions

The XPath expression functionality can be used in combination with MIS Integration and with the NeXML activity. For a full explanation on XPath Expressions and MIS, see Appendix 2 : MIS Integration on page 446.

Note:	When installing a new Nexus version, you can copy the file containing the XPath Expressions from the old version to the new one. The file is named "Xpaths.aeo".

2.6.8 JDF Editor

The JDF Editor allows to view and edit JDF files coming from the MIS server, allowing to add files and submit the job to a Workflow. For a full explanation on MIS, see Appendix 2 : MIS Integration on page 446. The JDF Editor is only available if MIS Integration is enabled in the Preferences: see 2.1. Preferences, MIS Integration on page 34.

2.6.9 PDF Profile Control Panel

The PDF Profile Control Panel allows to manage, create and edit Enfocus PDF Profiles.

In order to use the PDF Profile Control Panel, the PDF Profiles folder needs to be defined in the preferences (see 2.1.3 Servers on page 35), and the server needs to be mounted. The Panel shows all PDF Profiles in the folder, including all subfolders or "categories".

- **Manage**

- New...
  A new PDF Profile, based on an existing or an empty PDF Profile

- Edit...
  Edit the selected PDF Profile

- Remove...
  Remove the selected PDF Profile

- Duplicate...
  create a duplicate of the selected PDF Profile. This will be named "Copy of" followed by the name of the original PDF Profile

- Export...
  Exports the selected PDF Profile to a .ppp file.

- Import...
  Allows to import a .ppp file to a PDF Profile.

- Sort...
  Changes the order of the PDF Profiles. Move Up and Move Down moves the selected PDF Profile up or down in the list. When a (sub)category is selected, it can be sorted alphabetically. This sorting can be fixed using "Keep Sorted".

- New / Rename / Remove Category...
  Allows to add, rename or remove a subfolder or category

- Export Category...
  Exports a subfolder or category and its contents to a folder.

- Import Category...
  Import a folder containing PDF Profiles into a category.

- **Edit Profile**
  When editing a PDF Profile, the Enfocus PDF Profile Editor will open. Creating or defining a PDF Profile implies that you specify all the properties which have to be checked, reported and, if necessary, fixed.
  To define a PDF Profile:

  1. Click a problem category in the list.
  2. Select the Enable category check box.
  3. Select one or more properties or potential problems to check.
  4. Specify how to fix the problem, if necessary.
  5. Select how the detected problem should be listed in the preflight report: Information or Error.
  6. Repeat steps 1 to 5 for each potential problem you wish to check and fix, and click OK.

2.7. View Menu

2.7.1 Jobs

Opens the Jobs window. See 2.9. Jobs on page 51.
Shortcut: ⌘ - 1: Jobs

2.7.2 Workflows

Opens the Workflows window. See 2.11. Workflows on page 63.
Shortcut: ⌘ - 2: Workflows

2.7.3 Monitors

Opens the Monitors window. See 2.12. Monitors on page 70.
Shortcut: ⌘ - 3: Monitors

2.7.4 Queues

Opens the Queues window. See 2.13. Queues on page 82.
Shortcut: ⌘ - 4: Queues

2.7.5 Modules

Opens the Modules window. See 2.14. Modules on page 84.
Shortcut: ⌘ - 5: Modules

2.7.6 Show / Hide Toolbar

You can hide and show the toolbar of some windows, such as the Workflow list, the Workflow editor, the Job editor, etc.
Shortcut: ⌘ - ⌥ - T: Show/Hide Toolbar

2.7.7 Zoom In

In the Job Editor and WorkFlow Editor, you can zoom in, using the function from the View menu, from the contextual menu or by using the shortcut ⌘ - +. See 2.10. Job Edit Window on page 57 and 3.3. Nexus Flow Editor on page 115.

Shortcut: ⌘ - +: Zoom In

2.7.8 Zoom Out

In the Job Editor and WorkFlow Editor, you can zoom out, using the function from the View menu, from the contextual menu or by using the shortcut ⌘ - -. See 2.10. Job Edit Window on page 57 and 3.3. Nexus Flow Editor on page 115.

Shortcut: ⌘ - - (minus): Zoom Out

2.7.9 Zoom Fit

In the Job Editor and WorkFlow Editor, you can Zoom to fit the window, using the function from the View menu, from the contextual menu or by using the shortcut ⌘ - 0. See 2.10. Job Edit Window on page 57 and 3.3. Nexus Flow Editor on page 115.

Shortcut: ⌘ - 0: Zoom Fit

2.7.10 Errors

If a failed job is selected in the Job List, the Errors function will open the Error Log for that job. See 2.9.4 Job Actions on page 55.

Shortcut: ⌘ - /: Errors

2.7.11 Info

When in the Workflow list, the Info function can be used to open the properties of the workflow selected in the Workflow list. See 2.5.5 Edit on page 41.

When in the job list, the Info function can be used to open the File Info, if the Nexus Server is mounted. See 4.3.4 File Info on page 146.

Shortcut: ⌘ - i: Info

2.7.12 Log

If a job is selected in the Job List, the Log function will open the Log for that job. For every job in the Job List, Nexus retains an elaborate log, even for files which have been purged from the system. The "Update" option will update the Log window to the current state of the job.

Shortcut: ⌘ - L: Log

Note: The log is the only job related data which is not removed from the system when purging

2.7.13 Dump

The dump option is only useful for diagnostic purposes by the AWS support department. When selecting a job, workflow or queue and using the Dump function, a window will appear providing some information on the selected queue.

The search function can be used to search for a specific key, type or value.

2.8. Window menu

2.8.1 Minimize

This will minimize the active window. This can be done using the Minimize function in the Windows menu, by clicking the - button in the upper left corner of the window, by double clicking the window title bar or by its shortcut.

Shortcut: ⌘ - M: Minimize

2.8.2 Zoom

This will enlarge the active window to fit the screen. This can be done using the Zoom function in the Windows menu, or by clicking the + button in the upper left corner of the window.

2.8.3 Cycle Through Windows

Every time this function is applied, the next window will be activated This can be done using the Cycle Through Windows function in the Windows menu, or by its shortcut.

Shortcut: ⌘ - ': Cycle Through Windows

2.8.4 Bring All to Front

This will bring all Nexus Manager windows to the front.

2.9. Jobs

The Job Window contains the following parts:
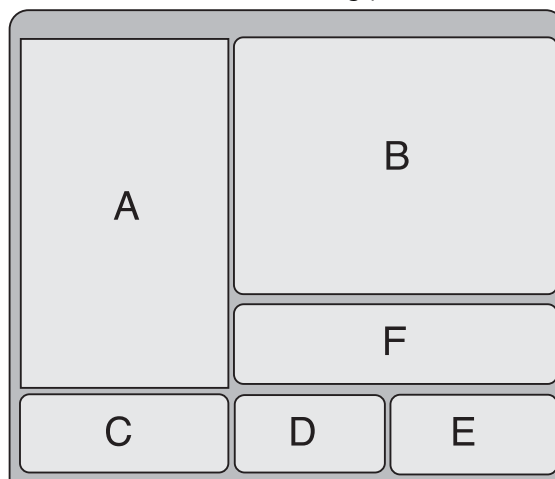
- A: The Job List (see 2.9.1 Job List on page 52)
- B: The Job Information (see 2.9.3 Job Information on page 54)
- C: The Show settings (see 2.9.2 Show Jobs on page 53)
- D: The Job Actions (see 2.9.4 Job Actions on page 55)
- E: Filter settings (see 2.9.5 Filter on page 56)
- F: Error List

In case "Show Detailed" is switched on (see 2.9.2 Show Jobs on page 53), pane A and B are combined in a list. The title bar of the window will show the IP address of the server, or the name of the server if it is entered in the list of Servers in the Preferences (see 2.1.3 Servers on page 35). In case you are logged in using a User Name, the current user will be shown in the title bar.

2.9.1 Job List

The Job List shows all Jobs which have been or will be processed through the system. An icon in front of the job entry will display the status while a name and a colored bar will identify the job and display its progress. What jobs are shown is defined by the Show settings and the Filter.

- **Job Icons**

Following icons in front of the job entry are used:

	Processing	The job is currently busy processing
	Held	The job is on hold, further processing will wait for operator intervention (see 6.1. Wait for OK on page 172 and 2.9.4 Job Actions on page 55)
	Waiting	job is waiting to be processed
	Completed	job has completed successfully
	Failed	there has been an error processing this job
	Aborted	job has been aborted (stopped) (see 2.9.4 Job Actions on page 55)
	Purged	job data has been removed from the system (see Purge Time in 2.9.4 Job Actions on page 55)
	Low Priority	
	Medium Priority	
	High Priority	

- **Remarks**

  - Multiple jobs can be "Busy" simultaneously, however each system module (see 2.14. Modules on page 84) can only run one job at one time (note that certain modules like FTP-Exposer and Assembler can be duplicated to allow for multiple jobs to be active for one type of module, this will be explained more in detail in the Modules section). Whenever a job needs to access a Module which is currently active on another job in order to become Busy, it will remain in the "Waiting" state until the module has finished its work on the previous job.

  - Whenever the sum of Busy Jobs and Queued Jobs exceeds the Active Job Limit parameter in the WorkFlows window, all new jobs entering the Job List will receive the "Waiting" state until a sufficient number of jobs have been completed. By default the Active Job Limit has been set to a value which does not impose too much overhead on the system while retaining sufficient jobs active simultaneously.

  - Whenever the disk gets full beyond the Purge Limit (see 2.6.1 Edit Volume on page 42) all jobs in the job list will remain Waiting until sufficient disk space has been made available

2.9.2 Show Jobs

The Show Job section in the bottom left corner defines what jobs are shown, and how they are represented.

- **Show Jobs by Workflows**

  The Job List can be filtered by the Workflows which are available in the system. By default the Workflow popup-list is empty, showing all jobs in the system. This can be set to any of the workflows active in the system by selecting it in the Show dropdown. When a workflow is selected, only the jobs which have gone or are going through this workflow will be displayed in the Job List.

  The Show field can also be used as a search field, by entering the name or a part of the name of the workflow. This can be used e.g. to show all jobs in workflows containing the string "Trap". If multiple strings are entered separated by spaces, all these strings must match. Wildcards can not be used.

- **Show Jobs by Status**

  The buttons allow to define what jobs should be shown, based on their status. By deselecting a button (e.g. Holding), all jobs with that status (e.g. on hold) will be hidden, and the other way around.

- **Show Tree**

The Tree button (at the right of the status buttons) allows to show all jobs in a tree structure. Clicking the button again goes back to regular view.

You can navigate through the list using arrow up/down. You can expand the selected Workflow using the right arrow key, or by clicking the triangle.

You can collapse it again using the left arrow key, or by clicking the triangle again.

- **Detailed**

If the Detailed option is switched on, the regular job list is replaced by a detailed sheet, showing the State Icon, the Job Name (or File name, if the Filenames option is on), start time, state, End Time, Workflow, Job ID, Priority, User, Hot Folder, NeXML file, MIS Job-Part and Certified (showing the profile used for certifying). By control clicking a column heading, a contextual menu appears, allowing to hide the column, insert a column that was hidden, use "Edit Column" to rearrange the order, or use "Auto Size" to set the width of the columns automatically. If the File Path is truncated, the full name will appear at the cursor tip when moving over it.

Jobs can be sorted based on any of these properties by clicking on it. Clicking again will change the sorting order: a triangle pointing downwards or upwards indicates sorting is done descending or ascending.

You can scroll through the list using the arrow keys. Selecting multiple jobs can be done by holding the shift key.

2.9.3 Job Information

The Job Information list shows more elaborate information on the job that has been clicked in the Job list:

- Job Name: name of the job
- State: job status with icon and completion percentage
- Certified Status: whether or not the file is Certified, and if it contains warnings or errors
- State: its status, and for how many % it is processed.
- Start Time: time when the job became active
- End Time: time when the job completed, failed or aborted
- Time: difference between Start Time and End Time
- User Name: Owner name of the computer the job is coming from (not always available), or when user management is used, the logged in user that submitted the job.
- Workflow: workflow that the job is going or went through

- Directory: folder where the all job related data is stored, please note that the data is stored in a job folder which contains the ID number of the job.

- NeXML: The NeXML file that was applied on the job.

- Purge Time: Time when the file will be purged

- Item States: states of the different items (activities – see workflows) the job is going or has gone through). As each job has an overall state, each jobs equally consists of different items (activities) which each have their own respective states: queued, busy, completed, failed, held, etc.…

- If the selected file is a Stitched job, a list with all files in the stitch sheet is shown in the Job information part.

- If enabled in the Preferences, you will also get a thumbnail of the job.

If a Workflow item is selected, the job information is replaced by the workflow description. See 2.11.2 Workflow Properties on page 64.

2.9.4 Job Actions

Additional tools are available for purging, viewing logs, changing job priority, etc.… Depending on the selected job in the Job List, some of these actions may not be appropriate: e.g. a "Complete" job does not have an Error list, it is not possible to set Purge Time for a "Held" job, it is impossible to Purge a job which already has the "Purged" state, etc.…

- **Purge**

  In order to have a job in the Job List immediately purged (without going into the Purge Time window to set a new date and/or time, see 2.9.8 Purge Time on page 56) the Purge button can be clicked. Please note that there is no undo to recover from this function, all job related data will be removed from the system.

- **Release**

  When a job is on hold in the Job List, it can be released by clicking the Release button, this will resume the processing for the job.

- **Abort**

  When a job is in the "Waiting", "Busy" or "Held" state, it can be aborted by clicking the Abort button, this will stop all processing on the job and put the job in the "Abort" state.

- **Delete**

  When a job is in the "Purged", "Complete", "Failed" or "Aborted" state it can be deleted from the system by clicking the Delete button. Please note that Delete is not the same as Purge. Delete will

remove all files, including log file and job directory, AND remove the job entry from the Job List. Please also note that there is no undo to recover from this function.

Shortcut: ⌘ - Backspace

- **Edit**

  You can double-click on a job entry in the Job List to open the Job Edit Window. The Job Edit window is described in 2.10. Job Edit Window on page 57.

  When a Workflow item is selected, the WorkFlow editor is opened instead. See 3.3. Nexus Flow Editor on page 115.

Shortcut: ⌘ - E

2.9.5 Filter

The Jobs window contains the possibility to show only certain jobs, based on the Filter by Date / User / Name settings.

The Filter by Name and Filter by User field can be used as a search field, by entering the name or a part of the job or user name. This can be used e.g. to show all jobs containing the string "Trap". If multiple strings are entered separated by spaces, all these strings must match. Wildcards can not be used.

You can use the shortcut ⌘ - ⌥ - F to go directly to the job name filter.

Date based filtering can be set to All Jobs (no filtering), Between two specified dates, and before or after a specified date. If Date filtering is set, the Set button changes to "Change".

2.9.6 Contextual Menus

The Job tab, like most windows in Nexus, contains contextual menus. By ctrl-clicking or right-clicking a job, a contextual menu appears, where you can chose edit (open a job editor window for the job), dump or view the log for the selected job, set its priority, or edit the workflow, which will open a workflow editor window for the workflow the selected job went through. If the selected file is on a mounted volume, the contextual menu will also contain the option to "Reveal" the job in the finder. The window with stitched files also contains contextual menu to reveal / open files.

2.9.7 Run Job

You can run a file through a workflow from within the Job Window, either by choosing "Run" in the contextual menu, selecting a job and using the shortcut ⌘ - R, or by dropping a file on the Job List. The Run File dialog will open. See 4.3. Run File on page 144.

2.9.8 Purge Time

Every job (except for "Held" and "Aborted" jobs) has a defined Purge Time. When the Purge Time is reached, all data files associated with the job are automatically removed from the system. This

facility is called purging. At what time a job will purge is set on a per workflow basis and occurs typically a specific amount of time after the job has completed. (see WorkFlows – Set Purge Time)

The Purge Time window contains the date and the hour the selected job will purge. Each of these can be modified using the arrows. The Do not purge option will allow for certain user selected jobs not to be purged. Cancel and OK will close the Purge Time window, respectively ignoring or accepting the changes made.

Please note that although the Purge Time window is accessible for "Failed" jobs, the Do not purge option for these jobs is automatically set, ensuring that these jobs are not automatically deleted from the system.

2.10. Job Edit Window

The Job Edit Window allows the user to monitor the progress of a job in detail and to interact with jobs in progress or jobs which have been processed. The displayed Job Edit Window on the previous page shows an example of a job which is currently in progress. In this window the following main areas can be distinguished:
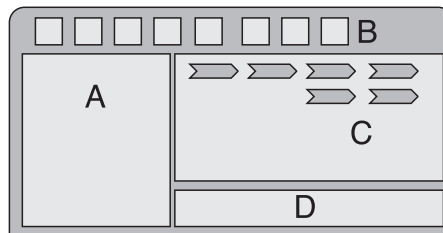
- A: Information Area: contains information on the currently selected activity or the overall job. Use the Arrow keys to navigate through the activities. When available, also the separations used in the job will be shown here.

- B: Control Area: contains buttons with actions to be performed on the currently selected activity or the overall job. This can be shown or hidden using the shortcut ⌘ - ⌥ - T or by selecting "Show Toolbar" in the View menu.

- C: Activity Area: previews in a graphical way the progress of the job.

- D: Error List

2.10.1 The Activity Area

The activity area is a graphical representation of the progress of the job. It is similar in layout to the workflow representation (see section Workflows), in the sense that there is a left to right and top to bottom ordering of processes, but there are no explicit links shown be-

tween activities, and whereas a graphical "Workflow" representation only shows one set of activities for all pages and all separations which may be present in a job, the Activity Area shows all activities for every page and every separation in the job. This allows access to every single activity in the job to facilitate complete user intervention. Every activity is represented by an arrow which contains an identifier icon and a status icon. The color of the icon and a progress bar may give additional visual feedback on the identification and progress of an activity. The name and the label of the activity is shown. For Nexus RIP activities, the separation is shown when applicable.

- **Identifier Icon:**
  shows the activity identification, e.g. calculate separations, make a proof file, interpret PostScript, etc..... A sequential order of activities actually forms a Workflow.

- **Status icon:**
  determines whether the activity is Dormant, Queued, Busy, Completed, Held, Failed, Aborted, Purged. See also 2.9.1 Job List on page 52 for a full description of states. The only difference with the Job List is that in the Job Edit Window, an activity remains Waiting until the input data for that activity becomes available, then it changes to Queued until the system is ready to start processing that activity.

- **Color:**
  in some cases the color of the activity will give additional information on the activity, e.g. separation colors (CMYK and PANTONE colors) can been used to display the activity for a specific separation.

- **Progress bar:**
  the activity arrow is actually a progress bar, empty (white) when not started, partly colored when active (+ progress shows while processing), and completely filled when finished.
  The first activity in the Activity Area actually represents the job activity (remark the letter J in the identifier icon). An indication of progress is given by the extent to which the background has been filled in (the arrow progress bar).

- **Page**
  The "Page" icon, represented with the letter P and a number in front, is actually an identification for the page. The number shown is the actual page label, which can be more than just a number.

It is important to note that not all activities related to a job will become available in the Activity Area as soon as the job gets started. Some may only show up after an activity gets completed. A typical example is the Interpreter, only when the PostScript data is interpreted does the system know how many pages and/or separations there are in the document to be processed.

Underneath the activity arrow, the page size is shown.

- **Changing the view**

  The view of the activity area can be changed in the contextual menu. Using the "Split View" option, you can divide the window in two horizontal parts, allowing to view different parts of the flow. By holding down the shift key, you can choose "Split View Vertically". "Hide View" will remove the selected part of the window.

  From the contextual menu, you can also zoom in or out, zoom to fit, change the background color, select a background file, clear the background file (by holding down the shift key), hide or show the Activity Labels, show or hide abandonned separations, etc.

2.10.2 The Information Area

This area contains information on the currently selected activity or the overall job. By default the system will display the Information on the complete Job when the Job Edit Window gets opened. Whenever an icon is selected in the job edit window, its outline changes to red and the Job Information section at the top left provides more information about the selected activity.

The Job Edit window shows a preview of the input file (when available), or a preview of the output file of the selected activity (e.g. save ArtPro File) at the left hand side, without the server being mounted.

If the separation info on the job or activity is available, it will be shown on the left hand side as well.

Activity Description	example: Job, Page, Activity
Name	identification name of selected activity or job
Start Time	date and time when activity got started
End Time	date and time when activity was stopped
Time	the actual processing time which is the time the computer has actually been performing calculations for the activity, between parenthesis

(Time)	the elapsed time: the difference between the start time and the end time. Since multiple jobs or activities may be active at the same time, the elapsed time will generally be longer than the processing time.
State	the state of the job or activity

2.10.3 The Control Area

This area contains a number of controls which are available in order to interact with the job edit window, to control the sequencing of processes and to view or change activity parameters. These controls appear as buttons at the top of the window and may or may not be enabled, depending on the current status of the activity. Some of these buttons (such as Hold and Edit) are also available in the Workflow Editor, while others (e.g. Retry, Show Errors) are only applicable when jobs are run on a workflow.

Some of the buttons work on multiple selected activities. Selections can be made by dragging a rectangle over the activities, by selecting activities while holding the shift key, or using the arrow keys.

- **Reveal Job In Finder:**
  this function will open the job folder containing the output files in the Finder.

- **Open Files:**
  This function will open the output files of the selected activity in ArtPro, or for PDF files in Neo (if present) or in the applications as defined in the OS (Preview or Acrobat).

- **Hold:**
  if an activity is currently Dormant or Queued, pressing the Hold button will change the status icon in the activity to a pause symbol actively suspending the processing of this activity. If at least one activity has a Held state and if no more activities need to be processed, e.g. all activities of the job have reached a Held state or Completed state, the job as a whole will be shown as Held in the Job List. Once a job is Busy, it cannot be Held, it can only be Aborted or allowed to run to completion.

- **Release:**
  if an activity is currently Held, it may be released with the Release button. This will make the activity available for processing. Depending on the status of other activities of the job its status will then change to dormant, active or queued.

- **Retry:**

  some activities in the Job Edit Window may be retried
  or reprocessed. This would happen typically after edit-
  ing the parameters of the selected activity to reprocess
  the activity with the new parameters, or when for whatever rea-
  son an additional run of that activity is needed (e.g. an additional
  proof copy). In fact, the Retry button can be pressed whenever
  activities that depend on that activity are not themselves active. If
  they are active, they must be aborted first or allowed to complete.

  It is only possible to Retry activities which read their input data
  from disk. Activities which are dependent on data which is resi-
  dent in the system's memory cannot be retried since the data at
  the time of retrying would not be available in memory. This is the
  case for most of the NexusImport or NexusProcessor activities.
  From these modules only the activities which open data from disk
  can be retried (e.g. Importing, Open File, etc.…). The Retry but-
  ton is disabled when the selected activity can not be retried.

- **Abort:**

  when an activity is Busy, Dormant, Held or Queued it
  can be terminated by pressing the Abort button. This
  will terminate the activity prematurely and the status
  icon will change to the Aborted state. Furthermore all subsequent
  processes that depend on the output from this process will also
  appear as if they too had been aborted. However, parallel pro-
  cesses on the same page or another page will be allowed to con-
  tinue. When all active processes reach completion (or become
  held) both the page icon and the job icon will show the aborted
  state.

- **Show Errors:**

  if an error occurs while processing an activity, its status
  changes to Failed and subsequent activities are abort-
  ed. Non-dependent activities are allowed to continue
  to completion or until all are Held, but then the job and page icons
  will show as Failed and the job will be shown as Failed in the Job
  List. By clicking on the Show Errors button, the Job Errors win-
  dow will show the nature of the error. Typically, there would only
  be one error shown, but for some activities such as the Interpret-
  er the activity will complete before changing to the Failed state to
  allow for all errors to be displayed in the Job Errors window, e.g.
  multiple fonts missing, or fonts and images missing, etc. By se-
  lecting an activity, the error / warning list will also be shown at the
  bottom of the screen.

- **Edit Parameters:**

  Activity parameters are normally defined by the workflow (see Workflow) on which a job is run. However, it is also possible to change them for an individual activity, by selecting the activity and pressing the Edit button. The parameter editor specific to that activity will then appear. This parameter editor is very similar to that for a workflow activity apart from some job specific differences:

  In the Job Editor, the padlocks are not visible.

  Most File Naming Template can not be changed here. For a full description of File Templates please refer to the File Template section in the Workflow chapter. Output filenames for an activity are only configurable through the Workflow Editor.

  Some facilities that require a knowledge of separation colors (such as color definition in the Merger and Manual Trap definition in the Trapper) are only available through the Job Edit window and not in the Workflow Editor.

  Additionally some activity arrows do not have parameter editing available. A typical example is the Page activity where clicking the Edit Parameters button will only display the Page dimensions and the Document Page Number.

2.10.4 Drag & Drop

In a *Job Editor* window, any activity with an output file (a file written to disk) can be drag and dropped on a folder or an application, in order to copy the output file in the folder, or open it in the application it was dropped on. This can be used e.g. to copy an output file on the desktop, to open a saved ArtPro file in ArtPro, to open a PDF file in Acrobat, etc.

Dragging and dropping requires the server to be mounted, in order to have access to the output files.

2.10.5 Analyze File

If the "Analyze File" option is on in the Select File activity (see 5.1. Select File on page 156) or in the Select Page activity (see 5.3. Select Page on page 160), the separations list will be retrieved from the ArtPro, PS, PDF or JDF file. This information can then be seen and used in the Job Editor. E.g. in the PS/PDF Import activity, the separations in the job are listed, allowing easy remapping of the separations.'

The best way to be used is to put the activity on hold to define the remapping of the separations before importing the file.

For activities that support it, the separation list can be reordered, and separations can be turned on or off. This can e.g. be used in the Kodak Separated Proof activity.

The Separation List Viewer supports multipage documents. The Page dropdown allows to select a page, and the separation list will reflect the separations for that specific page.

2.10.6 Output Files

For activities with a file output, the "Output Files" option in the contextual menu of the activity will open a list of all files created by the activity. The contextual menu on this file list allows to open the output, reveal it in the finder, or open the info. The File Info shows the same information as the Info button in the Run File window. See 4.3.4 File Info on page 146.

2.10.7 Quicklook

If you are running NexusManager on Mac OS X 10.5, you can use the Mac OS 10.5 QuickLook function, to get a quick preview of an output file of an activity, simply by selecting the activity and pressing the space key.

2.10.8 Read Parameters from XML

This function, in the Contextual menu in the job editor, allows to read the Parameters from an XML to be applied to the activities in a Job Editor. This allows to read settings from an XML file for a job on Hold, or for a job to be rerun.

2.11. Workflows

The Workflows are shown in a column view, indicating the number of active jobs, total number of jobs, job limit, purge time and Groups. As in the job window, Workflows can be sorted by any of these parameters by clicking on the column header. By control clicking a column heading, a contextual menu appears, allowing to hide the column, or insert a column that was hidden, or change the size of the selected or all columns to the minimum width or to reorder the column order. Note that the Group column is not visible when there are no users and groups defined.

The - and + button next to the column headings, allow to switch between a normal view and a narrow, single column window.

There are two buttons above the workflow list: New Workflow (see 3.1. New Workflow on page 89) and Properties (see 2.11.2 Workflow Properties on page 64)

The Find above the workflow list allows to filter the workflows by name. Multiple strings can be used, separated by spaces.

2.11.1 Edit

A workflow can be edited by double-clicking it in the workflow list, by its shortcut, or by selecting "Edit" in the contextual menu.
The Edit action will open up an new window, the Nexus WorkFlow Editor, which allows the user to reorganize, modify or change the parameters of activities which are making up the workflow. Modify-

ing the workflow does not influence jobs already in the job list. See Chapter 3. Defining Workflows on page 89 on how to define, change or create a workflow.

Shortcut: ⌘ - E

2.11.2 Workflow Properties

The Workflow Properties can be opened using the "i" button in the Workflow window, the Info option in the View menu, by selecting "Properties" in the contextual menu on the workflow, or by double clicking the first activity in the Workflow Editor. It opens a dialog in which a number of Workflow settings can be made. The Cancel button or ESC key will close the dialog without applying. The OK button will apply the changes.

- **Workflow Color**

  By clicking the color square next to the workflow name, you can define a color for the Workflow. This color will be used in the job list, for the jobs run through that workflow. It will also be used in the Workflow list.

  Removing the color can be done by shift clicking the color patch.

- **Set Purge Time - Delete Job on purge**

  Set Purge Time is used to define the time period after job completion when all of the data files relating to a job will be purged, e.g. deleted from the system.

  When purging takes place, the icon for the job in the job list changes to a trash can, provided the Delete On Purge option has not been set. If Delete On Purge is also set, the job itself will be deleted as well, i.e. removed from the Job List window.

  The Purge Time is set as a unit of time. If the unit is changed using the pop-up, the value shown will change accordingly (e.g. 1 week = 7 days). Different workflows can have different purge periods.

- **Job Limit**

  The Job Limit is used to define the maximum number of jobs that may be running concurrently. This limit excludes jobs that are complete, held, have been aborted or have failed. Reducing it will effectively reduce the number of concurrent activities in the RIP. If it is set to 1, this will result in jobs being executed one at a time.

- **Priority**

  Sets the default Priority for jobs going through the WorkFlow.

- **Disable PPD Locks**

  If the Disable PPD Locks option is on, all PPD locks will be ignored completely. This must be set when using NeXML to change parameters of the WorkFlow.

- **Page Mode**

  When Page Mode is unchecked, screening a separation can start before the page has been interpreted completely.

- **Groups**

  The Groups tab is only available if Users & Groups are defined. See 2.6.5 Users & Groups on page 45. In this tab, the user groups to which the selected workflow is assigned, can be viewed, and, if the user has Administrator privileges, these groups can be changed. When a workflow is not member of any group, it is visible to anyone. Administrators can always see and edit all workflows.

  Further info can be found in • Workflow Groups on page 47

- **NeXML**

  The NeXML tab allows to attach a restrictive list of NeXML files from the NeXML Template folder (defined in the preferences) to the workflow.

  Only the NeXML files in this list will be visible in the NeXML Ticket section in the Run File dialog for this Workflow. If no NeXML files are selected, all NeXML files in the NeXML Template folder will be available in the Run File dialog. See also 2.1. Preferences, NeXML Template Folder on page 37, and 4.3. Run File on page 144.

- **Description**

  This allows to enter a description for the workflow. This description is shown in the Job window, when selecting a Workflow while in Show Tree mode. See Show Tree on page 54.

2.11.3 Delete

The command - backspace shortcut, or the Delete function from the contextual menu, allows to delete workflow(s) from the list. After confirmation, the system will remove the workflow and all related hot folders and printers (see Monitors) from the server. Deleting a workflow will fail when there are still jobs in the Job List, which have been processed, are being processed or are queued for the selected workflow. A warning saying "Cannot delete workflow" will be issued.

Shortcut: ⌘ - Backspace

2.11.4 Duplicate

Duplicate, either chosen from the contextual menu or by using its shortcut ⌘ - D, will generate a copy of the WorkFlow selected in the list. A dialog will open, allowing to define the name of the duplicate workflow. The default will be the name of the original workflow, with "R" appended to it.

Note:	Duplicating a workflow only copies the workflow itself, it will NOT generate any printers or hot folders. If e.g. a workflow has a hot folder, the duplicate will not have any hot folders nor printers. See 2.12. Monitors on page 70 on how to add hot folders and printers.

2.11.5 Run File

Run File can be used to manually run a file through the selected workflow. For more information on how running a file manually through a workflow, see Chapter 4. Running Jobs on page 138.

Shortcut: ⌘ *- R*

2.11.6 Make PPD

Clicking the Make PPD button creates a PostScript Printer Description file for the selected workflow.

This is necessary when sending files through the Workflow using the LaserWriter function. For more information on using PPD's and printing to a Nexus Workflow, see Chapter 4. Running Jobs on page 138

2.11.7 Save

The Save function can be chosen in the File menu while a Workflow is selected. It can also be chosen from the contextual menu on the Workflow list, or using its shortcut ⌘ - S.

It is used to save a workflow and all external references as a config file on disk, either remote or locally. The config file includes the workflow and all its linked files, except fonts. E.g.: calibration files, ArtPro marks files, Enfocus PitStop Profiles and action lists, etc., except fonts and paths that are using template key words that are resolved when a job runs through the workflow.

The saved workflow can then be copied to another workstation or server and restored using the Restore function, or it can be used as a Template (see the use of Templates in Chapter 3. Defining Workflows on page 89)

If the workflow is designated to have printer, stitcher or hot folder input (please refer to 2.12. Monitors on page 70), this information will equally be saved, if the "Save Hot folders, Printers and Stitchers" option is on at the bottom of the browse dialog. Also the Nexml is saved.

The config file includes the workflow and all its linked files, such as calibration files, ArtPro marks files, Enfocus PitStop Profiles and action lists, etc., except fonts and paths that are using template key words that are resolved when a job runs through the workflow. The feature can be used to copy a workflow from one Nexus Server to another. It also allows the customer to easily provide a complete workflow to EskoArtwork's Customer Services in case of a problem.

The Save process is executed by the ArchiveServer module. The resulting file is exchanged via SOAP calls between Nexus server and NexusManager. In order to save workflows, you should setup the ArchiveServer module, which can be found in the Modules list.

1. Open the Modules window

2. Double-click the ArchiveServer module.

3. Enter a Listening Port. The Listening Port should be an open port, so the firewall needs to allow connection. By default the ArchiveServer module is running, using the 5181 port.
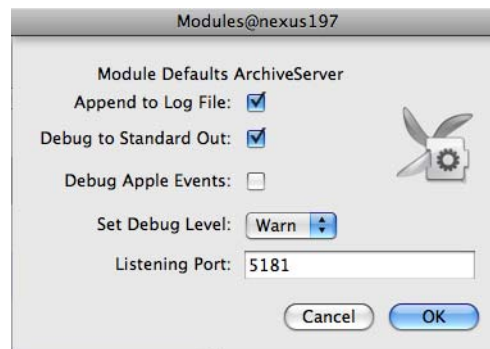
4. Click OK

Note: Please note that the workflow config has the file extesnion .nxcfg. It is a ZIP file that can be extracted by renaming the extension to .ZIP.

Shortcut: ⌘ - S

2.11.8 New

Defining a new Workflow is done using the New Workflow button, the New Workflow function in the File menu, by its shortcut ⌘ - ⇧ - N or by choosing New from the contextual menu in the Workflow list. See 3.1. New Workflow on page 89. For information on how to build a workflow, see Chapter 3. Defining Workflows on page 89.

Shortcut: ⌘ - ⇧ - N

2.11.9 Restore

The Restore function can be chosen in the File menu while in the Workflow window. It can also be chosen from the contextual menu on the Workflow list. It allows to restore a workflow saved using the Save function. You can also drop the workflow on the NexusManager application, or double click the workflow in the Finder.

When a Workflow is restored, it will be preflighted. Nexus checks if it can access the external files through those links. If it can't (the files have been moved, deleted or the Archive was saved on a different machine), it opens the Resolve Workflow window.
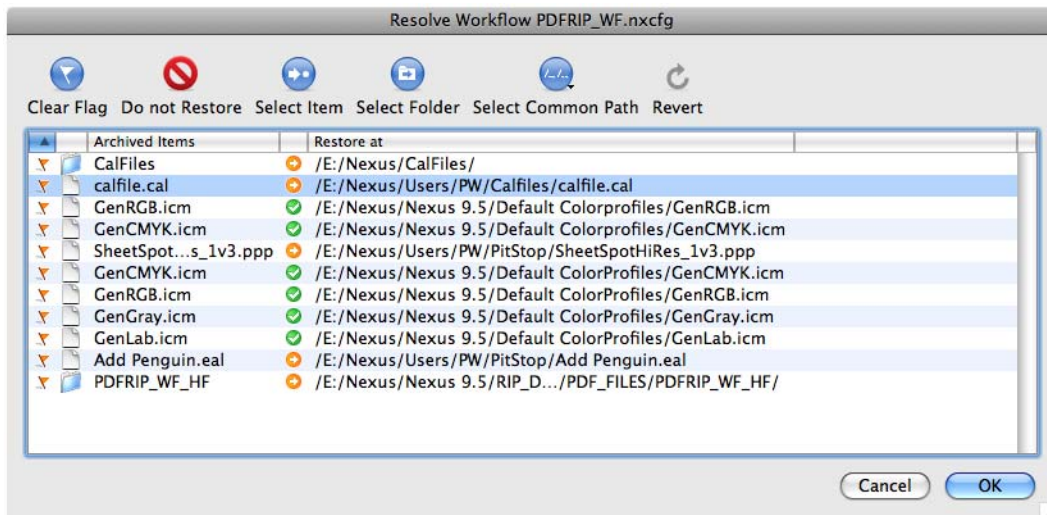
In this window, broken links have an orange arrow, valid links a green check, and deleted link a gray icon .

You can also see which links you haven't checked yet (orange flag) and which links you have edited (no flag).

Click on the top of the appropriate column to sort links based on their state (broken, valid or deleted) or on the flag.

To restore a linked item, select it and click one of the top buttons:

- Clear Flag: use this to indicate you have checked the item keep the original path and restore the item there.

- Do not Restore: use this to discard the item.

- Select Item: use this to browse to the item's new location (on your machine or on a mounted volume).

- Select Folder: use this to select the folder containing the item / where you want to restore the item (on your machine or on a mounted volume).

- Select Common Path: use this for several items that have a part of their original paths in common, to replace that common part by a partial path of your choice.

For example, if you have two linked items with the following paths:

- Server HD/Resources/PDF Profiles/CheckForSpot.ppp

- Server HD/Resources/Decomarks/Slugline.decomark

You can replace the "Resources" folder by a folder of your local machine, for example "Documents". The paths become:

- Local HD/Users/Me/Documents/PDF Profiles/CheckFor-Spot.ppp
- Local HD/Users/Me/Documents/Decomarks/Slugline.deco-mark

Inspector recreates the end of the path in the folder you choose on your local machine.

- Revert : use this to cancel your changes (changing the path or discarding the item) and revert to the original path.

To perform an action on several items at once, select those items using the Command or the Shift key before clicking the button. Use Command + A to select all items in the window.

When Restoring a workflow the appropriate printer, stitcher or hot folder will equally be restored if saved in the file, and if the "Restore Hot folders, Printers and Stitchers" is enabled. Also the Nexml is restored. If the hot folder can not be restored, the Nexml file can be saved from the Preflight status window. See 3.3.4 Workflow Activities on page 116

When restoring a workflow that has the same name of an already existing workflow, the "R" extension will be added to the workflow name. (see also 2.11.4 Duplicate on page 65: combination of a simultaneous Save and Restore)

2.11.10 Rename

In order to give a workflow a new name (e.g. after duplicating or when due to editing the name does no longer reflect the contents of the workflow), the name can be changed simply by clicking the workflow name in the Workflow list.

Note:

Changing a workflow name doesn't change the related hot folder, stitcher, or printer names.

2.11.11 Save All Workflows

Save All Workflows, accessible from the contextual menu, is basically the same as selecting all Workflows and use the save function. If multiple workflows are selected, you can also choose "Save Selected Workflows. See 2.11.7 Save on page 66.

2.11.12 Drag & Drop

When dropping a folder on the Workflow tab, the workflows inside the folder will be restored. If the folder does not contain workflows, the file(s) will be run through the selected Workflow. It is of course essential that the file is accessible on the Nexus Server.

The folder mapping defined in the Server Preferences can be used to map the file path to apath the Nexus Server can access. See 2.1.3 Servers on page 35

2.12. Monitors

The Monitors window provides the means by which the automatic data input mechanisms to workflows is configured and how these monitors are managed. The Printdriver module is the primary monitor handler.

A printer and a hot folder may be generated automatically whenever a PostScript input workflow is generated using the New workflow function, by selecting the required option. However, this option is not available when workflows are restored. Likewise, if both hot folder and printer input are required for a workflow, a monitor must be created separately from the workflow.

The Monitors are shown in a column view, showing all Hot Folders, Printers and Stitchers. Monitors can be sorted by any of their parameters by clicking on the column header. By control clicking a column heading, a contextual menu appears, allowing to hide the column, or insert a column that was hidden, or change the size of the selected or all columns to the minimum width or to reorder the columns.

The - and + button next to the column headings, allow to switch between a normal view and a narrow, single column window.

2.12.1 Edit

A Monitor can be edited by double-clicking it in the Monitors list, by its shortcut, or by selecting "Edit" in the contextual menu. This will open the Edit window for the selected type of Monitor. See 2.12.9 Printer on page 73, 2.12.8 Hot Folder on page 72 and 2.12.10 Stitcher on page 74.

Shortcut: ⌘ - E

2.12.2 Delete

Monitors can be removed by selecting them in the monitor list, and clicking the delete button, by selecting Delete in the Edit menu, or by the shortcut ⌘ - Backspace. In the case of a printer, the entry in the chooser or printcenter will disappear. When deleting a Hot folder, all related objects will be deleted as well.

In the event that might be necessary to debug a problem with a stitch sheet or other monitor, its contents may be displayed in a text window using the Dump function.

2.12.3 Add

The buttons on top of the Monitors list allow to create a new Hot Folder, Printer or Stitcher. The corresponding editing window will open. See 2.12.9 Printer on page 73, 2.12.8 Hot Folder on page 72 and 2.12.10 Stitcher on page 74.

2.12.4 State

The State indicates if a Monitor is active or on hold. Changing the state can be done by selecting one or more Monitors, and clicking the Run or Hold button. If a Printer is set on hold, the printer will cease to be visible on the network until the Release button is pressed to reactivate it. In the case of Hot Folders and Stitch Sheets, files added to their designated input folders will not be processed further while they are in a held state. If a stitch sheet has been partially made, it will be flushed promptly when putting the stitcher on hold.

2.12.5 NeXML

The NeXML column indicates the name of the NeXML file attached to the Hot Folder. The NeXML editor can be opened from the contextual menu on the NeXML file, or from the Workflow Editor.

2.12.6 Shuttle

The Shuttle option indicates which Hot Folders will be available in Shuttle. It can be switched on or off in the Monitors list, or in the Hot Folder settings (see 2.12.8 Hot Folder on page 72). For more information on Shuttle, see Appendix 3 : Shuttle on page 450.

2.12.7 Contextual Menu

The Contextual menu in the Monitor Tab contains the option to open the Edit window, to Dump or Hold the selected Monitor.

- **Reveal**

  When a Hot Folder is selected, the option to Reveal will also be available, to show the Hot Folder in the finder. The server needs to be mounted for this option.

- **Create PDF Workflow Option**

  PDF Workflow Option is a service available in OS X, and affects the print dialog of every application.

  When the PDF Workflow Services are used, the "Save as PDF" button, usually at the bottom of the Print dialog, is replaced by a PDF button.When clicking this button, a menu is shown, containing the original "Save as PDF" option, as well as every Hot Folder that has the PDF Workflow Option. This allows to save the PDF directly in the Hot Folder, without having to search for it in the Browse dialog.

  The Create PDF Workflow Option adds this option to the selected Hot Folder, making it available in the PDF menu in the Print dialog. It's only available if the server is mounted.

- **Create Alias on Desktop**

  Create Alias on Desktop can be used on Hot Folder Monitors, and allow to create an Alias of the Hot Folder. This option can only be used if the server is mounted.

2.12.8 Hot Folder

When adding or editing a Hot Folder, the Hot Folder settings can be changed.

- **Hot Folder**

  The default name has the extension _HF appended to the Workflow name, but the Browse button can be used to locate an alternative location. In the case of hot folders, it is quite reasonable for these to be located on a remotely mounted drive, possibly on an OPI server. It is also common to have the hot folders on a Mac accessible volume, which enables operators to copy their files from their workstation.

- **Workflow**

  Through this popup the workflow must be selected for which a new Hot folder must be created. This popup shows all current workflows. It is acceptable for a given workflow to have both Printer and Hot Folder input. However it is important to note that the Printer Spool folder should not also be defined for hot folder input, otherwise the job may be submitted twice to the workflow and there would be problems retrying the printer job. Hot folder jobs, once detected by the Print Driver, are copied into a sub folder of the hot folder called Spool, so that they do not get redetected. It is from this sub folder that a hot folder job would be retried if necessary.

- **Settings**

- Poll Period / Settling Period

  The Poll Period is the time interval that Nexus uses to check the Hot folder. Default value is 10 seconds, meaning that every 10 seconds the Hot Folder will be checked for new files.

  The settling period is the time that Nexus waits after the file is completely copied in the Hot Folder before start processing it. This to avoid that Nexus already starts and the file is still being copied over the network.

- Never Delete Hot Folder

  If this option is on, the folder itself will not be deleted, even if the Workflow it belongs to is deleted, or if the Hot Folder is removed from the Monitors tab.

- Hide Hot Folder Name in List

  If this option is on, the Hot Folder is represented by the name of the Workflow instead of the name of the Hot Folder.

- Show in Shuttle

  The Show in Shuttle option indicates which Hot Folders will be available in Shuttle. It can be switched on or off in the Monitors list (see 2.12.6 Shuttle on page 71), or in the Hot Folder settings. For more information on Shuttle, see Appendix 3 : Shuttle on page 450.

- **Ignores**

  Some OPI-replacement applications like ColorCentral create a temporary folder to spool their files. In the OPI workflows, a Hot folder from Nexus has been selected as the output folder. Nexus could see the incoming folder and attempt to process it resulting in an error. Once the OPI replacement has been completed, the temporary folder is removed and the fat PS file is direct available in the hot folder to process.

  To avoid such problems, all subfolders called Temp, Tmp & Spooler are excluded from processing automatically. Also Nexml.xml files, that can be in the hot folder when using NeXML (see later) will be ignored. Other folders or file names that should be ignored can be added by entering the name in the field, and clicking the + button. A file or folder name can be removed from the ignore list by selecting it and clicking the - button.

- **Groups**

  In the Groups tab you can set the Group settings for the Hot Folder. See • Workflow Groups on page 47.

- **Nexml Settings**

  The Nexml Settings will be used if files are run through a hot folder with a Nexml file. See the Nexml documentation for more info.

- **Drag and Drop**

  You can drag and drop a file on a Hot Folder to run the file through the workflow corresponding with the hot folder. If a NeXML is attached to the hot folder, this NeXML will be used to set up extra parameters for the job. See the Nexml documentation for more info.

2.12.9 Printer

When adding or editing a Printer, the Printer settings window opens. It may be necessary to define a printer manually after restoring a workflow, or if a Hot folder has been defined when setting up the workflow originally, and an Appletalk Printer based input possibility must be added.

- **Input Folder**

  When PostScript is received over the network, it is stored on the server as a file instead of being processed immediately by the interpreter. This allows to retry jobs without having to be resent over the network. But the file needs to be stored, and this spool folder would typically have the name of the workflow (possibly with the _Printer extension) and be in the PS_FILES subfolder of the RIP_DATA folder in the RIP folder. When setting up a new printer this default path will be proposed in the edit field. The Spool path will be shown in the Monitors window. Of course it can be defined elsewhere if more convenient and can be located through the Browse button. It might be appropriate, e.g., to store incoming PostScript on a physically different disk drive to the other files created by the RIP. It would normally be a local drive however.

- **Workflow**

  Through this popup the workflow can be selected for which a new printer is created. It shows all current workflows.

- **Printer / Append IP address**

  The name by which the printer will appear on the network, can be set here. If the Append IP address option is on, the last 3 digits of the server's IP address will be appended to the name of the printer. This can make it easier to distinguish and recognize printers over the network.

2.12.10 Stitcher

- **The Stitcher principle**

  Stitching is a facility on Nexus RIP to conserve film or plate material on large output devices. Under some conditions it may be useful to combine all separations from one job on one sheet, or it may be useful to combine multiple jobs on one sheet.

  Most large imagesetters on the market have their own built-in film optimization, however sometimes this option is only accessible through the original RIP from the same vendor, or it is limited in functionality. In a Nexus environment, where the physical connection is done often through a Spooler such as the Rasterblaster from Xitron, the Stitcher offers an excellent alternative for film optimization and also makes the optimization independent from the output device.

  Basically, the Stitcher is a separate program or module, that is joining TIFF images prior to output on the target device, together to form a single TIFF file. Screened data that would normally be sent direct to the output device, is in this case sent to a Stitcher which will fill up a Stitch Sheet as good as possible before releasing it.

A new stitch sheet is created by pressing the Add Stitcher button under Monitors to open the Add Stitcher Window. This window enables the type of stitch sheet to be defined. Once a stitch sheet has been created, it can be monitored.

- **Stitch Type**

- Monochrome

There are two basic types of stitch sheets, Mono is designed to stitch together screened TIFF files for output to film or plate. The input type is always 1bit TIFF data

- Color

Color Type is designed to stitch together CMYK images for output to color proof devices. In Color mode the output of the stitcher is always a PostScript file (the Output mode popup is disabled), which must be scheduled on a workflow than can accept PostScript input. Unlike mono stitching, where the input files are TIFF images, the input files for the color stitcher are link files made by a page workflow.

It is important to note that when a link file is made for use by the stitcher, it is renamed. If a link file is needed for some other purpose, such as making an imposition, the link file must be copied to two destinations.

- **General settings**

- Path

The hot folder provides the mechanism by which files are queued for the stitch sheet. In the case of Monochrome stitching, all files on the same stitch sheet, will have the same resolution, as Imagesetters and Platesetters cannot change resolution while exposing a sheet. The Stitch sheet will have the resolution of the first file entered. Files with another resolution will be held back until the current sheet is flushed, and then be placed on a new stitch sheet (unless the Move Mismatching option is on, see below). Parameters other than resolution, such as unit system, compression etc., are also inherited from the first image to be placed on the sheet.

The folder would typically be the destination folder defined in one or more workflows in the File Copy editor. These workflows copy their output screened TIFFs in a Stitch hot folder instead of transferring them directly to the target device. The full path must be specified, but can be located using the Browse button. The hot folder will contain a subfolder called Done into which files are moved after processing.

The files may also be renamed with a sequence number. This enables the same job to be stitched several times on the same sheet by simply recopying it to the hot folder. The files for stitch-

ing are deleted when processing of the stitched job on the target workflow is complete and the stitched job gets purged.

The name of the hot folder will also be the name by which the stitcher is shown in the Monitor tab.

- Settling Time

  The settling time is the time that Nexus waits after the file is completely copied in the hot folder before start processing it. This to avoid that Nexus already starts while the file is still being copied over the network.

- Filenames Matching

  This option allows to ensure that only files from the same job are stitched on a given sheet. When selecting Any File, all files will be accepted. By selecting Based on Leading text or Based on Leading Digits, only files with the same text or digits will be placed on the same sheet.

  If the "Single Image Repeat" option is selected, whenever an input file is selected (whether monochrome or color), it will be placed multiple times on the sheet in accordance with the specified spacing and centering parameters. The number of images will be that specified in the "Max Images" field or until the sheet is filled if this occurs first. The Replace Duplicates and Flush When No Match options are disabled and unavailable.

  "To First/Last Occurrence of" allows to match file names based on parts, separated by a special characters.

  E.g. by setting it to "First Occurrence of" and "_", filenames will be considered matching if the part in front of the first underscore in the filename, is identical

- Replace Duplicates

  If a job is entered in the hot folder with the same name as a job previously entered, it will replace the older file if Replace Duplicates is on. In the other case, the file will be added, adding "1" to the name. This also defines if retrying a job results in having both versions on the stitch sheet, or only the last.

- Flush If No Match

  If the Flush If No Match is on, as soon as a TIFF is submitted that does NOT fit, the Stitch Sheet will be flushed, and the TIFF will be placed on a new Stitch Sheet.

- Move Oversized

  The Move Oversized option allows to transfer TIFFs that do not fit on the page size into another folder, and so e.g. into a Stitcher for another (larger) device.

- Move Mismatching

  TIFFs that do not match can be transferred into a specific other folder, using the Move Mismatching option. This can be used to transfer them to another Stitcher for example. This allows e.g. to have 2 different Stitchers, building 2 different sheets at the same time, one at 1200, one at 2400 dpi.

- **Output Options**

- Mode

  TIFF

  If TIFF is selected as the Output Mode, screened TIFF files may be combined by the Stitcher itself to produce a large TIFF file that must be submitted to a TIFF Expose workflow. In this mode, TIFF images are aligned on 8 pixel boundaries for optimal performance, irrespective of image size and defined margins.

  Because the Stitcher is performing a complex function, there will be a significant delay between when the sheet is flushed (whether automatically or manually triggered) and when the stitched job is scheduled for processing. TIFF Output Mode is only relevant for Mono Stitcher. If the stitch type is set to Color, the Output Mode will default to PostScript

  PostScript

  In PS mode, the stitcher process completes much more quickly, because it simply generates a PostScript file containing links to the original TIFF images. The stitching is then done later by the Assembler, after submitting the PS file to the target workflow (which must be one capable of accepting PS input - i.e. not TIFF input). Typically, stitching TIFFs in the Assembler is slower than combining them in the Stitcher itself.

- Workflow

  This popup shows all currently available workflows from which one is selected in order to run the stitched file.

  If the Stitch Type is Color, the output file will always be in PostScript, so the target workflow must be capable of processing PostScript input (e.g. it must not be a TIFF Expose workflow). When a Mono stitch sheet is created, the most efficient output mode is TIFF, in which case the target workflow must be one that can accept separated screened TIFF files as input (i.e. TIFFExpose). There is currently no automatic validation of workflow input capabilities against stitched file type. The workflow would typically not be configured as a printer or with hot folder input as well as stitcher input (i.e. it would typical be set up just for Manual Select)

- Device

  This parameter defines the direction of the fast scan on the final output device with respect to the media width. The radio button should be checked according to the type of output device.In a drum setter, the fast scan direction is around the drum, which on a roll fed device is along the length of the media. For capstan devices, such as wide measure proofers, the fast scan is across the width of the media.

  Together with the Fill Page property, this parameter defines the sequence in which images are placed on the stitch sheet and when the sheet will be flushed for output. Drum setters are normally driven in Page Mode, with images initially being stitched along the fast scan direction (i.e. around the drum).

- Fill Mode

  This parameter effectively defines whether the stitcher is just being used to conserve media width or whether the complete page size is to be filled before output.

  In the first case, being Row mode, as soon as the full width of the media is consumed the stitched job will run and the media will advance by the height of the tallest of the stitched jobs The second option being Page mode will result in the page being filled completely. A page could be a complete drum in a drum setter, or a paper sheet on a sheet fed proofer. Fill Page mode normally consumes less media, but output will be delayed until sufficient images are delivered. It should be noted that if Fill Page has been selected, flushing the stitch sheet will always output the full page height.

- Timeout

  A stitch sheet is normally flushed when it is too full to accommodate any more images or when the manual Flush button is pressed. But it is also possible to specify a time period for a partially filled sheet after which, if no more images are supplied, the sheet will be flushed automatically. Whenever a new file is received, the timeout is reset to this value.

- Maximum images

  Another mechanism for automatically flushing a stitch sheet is to specify the maximum number of images to be put on the sheet. As soon as this number is placed, the sheet will be flushed even though there might be room on the sheet for more images. One application for this, by setting this value to one, is to position images on a predefined larger format.

- width & height

  These values define the size of the Stitch sheet. It is the size of the media, including all margins

- margin (before / after) & space

  Facilities are available to specify, for each direction on the stitch sheet, what the maximum dimension is, how much space should be left between images and what the margins before the first and after the last image should be, all measurements being specified in preference units.

- Waste

  The Waste value defines the point at which it is assumed that no more images will fit and the sheet can therefore be flushing immediately without waiting for another image. When not in Fill Page mode, the sheet will be flushed as soon as this condition is met. When in Fill Page mode, the condition must be met in both directions. Typically, in order not to waste media or time, the values should be set to just under the smallest page size that is likely to need to be stitched.

- images centered

  If there is any space remaining in a given direction, it is also possible to centre the stitched image, the remaining space being equally added to the before and after margins. It follows that the images will not actually be centred unless the margins before and after are equal. Centering may be enabled or disabled independently in both directions. When not stitching a whole page, centering will only be effective in the direction in which images have been stitched.

- Previews

  When switching on the Previews option, a preview will be added for every job, allowing to get a proper preview of the stitch sheet when monitored.

- Negative

  This is only applicable when stitching TIFFs in Mono Mode. If checked, all gaps between images are inverted in the output file. This is necessary when the individual TIFF images are already in negative mode.

  It would not normally be appropriate to mix positive and negative TIFFs on the same stitch sheet, but no check is made on the polarity of the input data files.

- Media Save

  If the Media Save option is on, images will be stitched underneath each other in the slow scan direction instead of in the fast scan direction, until no more images will fit. The right margin will be dynamically adjusted.

- Pad32

  The Pad32 forces the stitched sheet dimensions so that they are a multiple of 32 pixels at output resolution.

- **Monitoring a Stitcher**

  To monitor a stitch sheet, control-click on the monitor and select "Monitor" from the contextual menu.

  The Stitch monitor window (like the volume monitor) can remain open when other windows are opened. It shows the current status of the stitch sheet.

  At the top, the name of the workflow and the hot folder is shown. The Seconds Remaining timer indicates how much time is left before the sheet will be automatically flushed, if the sheet is not flushed for another reason.

  The Flush button forces the stitcher to immediately output the stitch sheet as it is at that moment. The Delete button removes the sheet and all its files.

  A white rectangular box is shown that represents the stitch sheet. The horizontal direction corresponds to the width of the media and the vertical direction to the media feed direction.

  As soon as the stitcher receives a file to be stitched, a gray rectangle representing the shape of this image will appear in this white area, showing the positioning on the sheet, based on margins, centering, etc., so a preview is shown on how the sheet would be imaged when hitting the Flush button.

  If the sheet has been configured in Row Mode, when there is insufficient room on the row to accommodate the next image, or when the remaining space falls below the maximum wastage value, the sheet will be flushed.

  If the sheet has been configured in Fill Page mode, as soon as no more images will fit across the stitch sheet, subsequent images will start appearing on the next row and so on until the page is filled with as many images as possible or until the maximum specified number is reached.

  If an image on the stitch sheet is selected with the cursor, it will be highlighted and information relating to it is shown at the bottom. This consists of the name of the original file, its dimensions and its calculated position on the stitch sheet.

To know the identity of the original input file on a stitched sheet, the stitched file can be selected in the Job Edit window. In the Stitched Files, a list is shown of all files on the stitched sheet. See also 2.9.1 Job List on page 52

Note that in the case of the color stitcher, it are only the link files that are deleted. The page files that these link files reference to are not automatically removed.
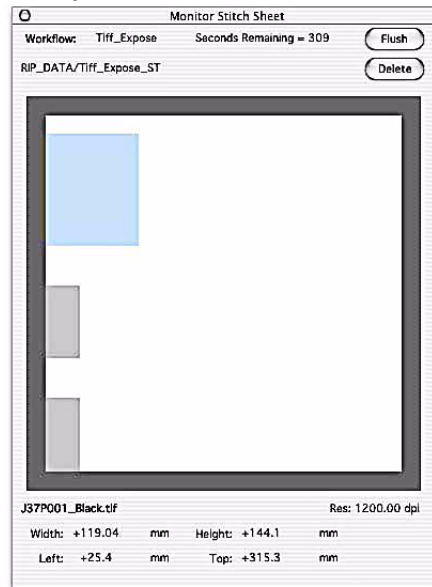
2.12.11 Print Driver

The Print Driver is a Module that is responsible for managing and monitoring all the incoming PostScript over the Appletalk network and all hot folders been setup to accept PostScript, EPS, PDF or other file formats.
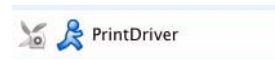
This module is handling the opening and closing of network connections and supporting basic PostScript queries. It links the incoming data to the designated workflows by creating a new file in the Spool folder and copying the PostScript code into this folder as a file. More details are found in the next topics: printers and hot folders

The printdriver also monitors all hot folders and checks the contents of the incoming files if not PS or PDF, but TIFF/IT, PSTI, TIFF,...

When files are received and copied in the Spool folder, Control will be notified that a new job is available, so that it may be scheduled on the corresponding workflow. Files received by the Print Driver will become part of the newly created job, but will remain in the spool folder, rather than been copied to the Jobs database. These files

will remain on disc until purged. This copy of the PS files being received by Appletalk Printer based printing, will allow a retry of these jobs at a later stage.

In the queue list, the entry of the Print Driver will show how many hot folders and printers are currently active.

2.13. Queues

The scheduling of all processes in Nexus is handled using Queues. Jobs are queued for the workflows on which they are supposed to run, but jobs and pages are also queued for each activity defined in these workflows. Finally, when jobs are completed, they are queued for purging.

On the left hand side, we see a scrollable Queue list. The Queues tab is presented in a column structure. For every queue, the number of jobs and number of active jobs is shown. Next to it is the Job / activity list. On top you can find the the Hold Queue, Release Queue Hold Job, Release Job, Abort, Purge, Retry and Priority buttons.

All the scheduling of the jobs and activities is done through Control by means of queues. These queues determine the order in which jobs will be processed, and when specific activities will be scheduled for processing by the target program.

Three different types of queues, each represented by another icon are available.

The Show option allows to filter what queues should be shown: Module Queues, Active Module Queues, Job Queues, Active Job Queues or All Queues.

2.13.1 Workflow queues

When a new workflow is created it will appear in the Queues List showing a workflow icon. Next to this icon, there will be another one, showing the status of this queue.

It is also indicated how many jobs are currently active and queued in total for this workflow.

A running icon means that the workflow is currently active and released. When we select this entry and press the Hold button, the icon will change and the workflow will effectively been put on hold. If we try to run a job through this workflow, it will remain in dormant state. Pressing the release button will relaunch the workflow, and the state will change to busy.

Holding and releasing individual workflows as an entity is not the normal procedure. If processing needs to be suspended for any reason, it is preferable to hold one activity in either the workflow ed-

itor, or the job editor (once the job has begun processing). This is easier to follow up as a user. The queues tab should only be used for advanced users and test purposes.

2.13.2 Module queues

These are represented by a Nexus icon, and have the same possible status, being running or held. For each single module in Nexus there is a Queue that represents an ordered list of data objects (jobs, pages and plates) that the module still has to process.

Nexus consists of a number of separate applications or modules, being scheduled by Control, and each being responsible for one or more tasks or activities. In the queues list, you can verify how many tasks are scheduled for each module, and view the status as well.

A Module is held by selecting it from the Queues list and pressing the Hold button, releasing the module is done by pressing the release button. Holding a module will result in all processes queued for this module to be suspended. If a module is active and performing a certain task when held, it will first complete the action before changing the state to Hold. Be aware that some modules are responsible for multiple processes. The Assembler Module for example is invoked for Banding, Screening and Proofing, but today only one process can be in progress at any time.

Modules that are not being used for a while will switch automatically to the Hold status. This means that these modules have been shut down by Control to release valuable system resources, being restarted later if required. When Control is started for the first time, all modules are launched so that Control can determine which activities they support.

2.13.3 Purge Queues

The queues labelled by the workflow name, and shown with a trash can icon are the purge queues. These indicate how many Workflows have reached the purge time, and how many jobs are scheduled for purging. Putting the queues into Hold is possible, but not recommended, as the Hard Disk space could fill up very fast when running jobs and not purge them.

2.13.4 Dump

The dump option (Contextual Menu) is only useful for diagnostic purposes by the AWS support department. When selecting a queue and pressing the dump button, a print window will appear providing some information on the selected queue.

2.13.5 List

If a Queue is selected in the list, the jobs in this queue are shown in the Job list. Above and underneath the job list, there are a number of buttons that can be applied on a job selected in the job list: Hold, Release, Abort, Retry, Change Priority and Purge Job.

The "edit" option in the contextual menu in this list opens the Job Editor of the job.

This can be very useful e.g. to monitor and change the queue of files waiting to be send to an imagesetter, without having to search for the individual jobs in the job window.

2.14. Modules

2.14.1 Modules Window

- **Module List**

  On the left hand side of the Modules window, we see the list of existing Modules. A Module is an independent executable program which runs on the Nexus Server. When Nexus is started up on the Server, all modules will be launched automatically. The Controller schedules all the applications. When a module has been idle for a while, it will timeout and quit to save processor resources on the Nexus Server. In the queues list, these modules will be put on hold, which can be verified in the control log.

  Every Module can have two modes. It can either be active or dormant. The Modules remain dormant until a job is launched which requires a certain module. At that moment, the icon in the List will change from dormant to running. On the server, the Modules may be seen as applications (having the extension .exe on Windows) in the Nexus application folder. When in use, each Module is a separate application and can be seen in the Task Manager.

  In a daily production environment, the end user should normally have no reason to access the Modules Tab. It would typically be the system administrator or technical support staff who would check on the status of the modules.

2.14.2 Module Options

- **Nexus Soap Server**

  The Nexus Soap Server module, which can be found in the Modules list, is the most important part of Shuttle Integration in Nexus. For more information, see Appendix 3 : Shuttle on page 450.

- **Duplicate**

  The + button allows you to duplicate a selected Module in the Module List. Currently this feature is only supported for a limited number of modules. The Duplicate button will therefore only be enabled if one of these modules has been selected.

  Details on how to set up multiple modules are discussed in 2.14.3 Multiple Modules on page 86.

- **Delete**

  If a module has been duplicated one or more times, these duplicates can be removed again by pressing the - button. The original module can never be deleted, because this could cause the system to fail or to behave unpredictable.

- **Edit defaults**

  The Modules have only limited settings. Upon selecting a Module in the List, the defaults as specified for this module are displayed by selecting Edit Defaults in the contextual menu, by selecting "Edit" in the Edit menu, or by the shortcut ⌘ - E. These defaults relate to all Nexus Modules, irrespective of function. They are important for Performance reasons and debug level.

- append to log file

  Every single Module writes diagnostic information to a log file, the name of which is the Module name, followed by the extension ".log" (f.e. assembler.log) Checking this option will make sure that a new log file will be created every time that Nexus will be restarted. The old logs will then be copied in the folder called Module Logs Backup, where they are available for diagnostic reasons. This is recommended, because log files can become quite big after a period of time.

- debug to standard out

  If this option is checked, Nexus will also write debug information to the Task Window on the Nexus server. Normally these Windows are minimized (except for Control) on the Windows 2003 machine, but through this option, it may be useful to select the modules and view the report generated.

- debug apple events

  AppleEvents are used for the communication between control and NexusManager. For the End User, there is no reason to view this communication. Only for development issues, it makes sense to use this option. This results in big data files, containing all information on messages being sent.

- set debug level

  There are three different debug levels. The popup enables you to modify the amount of detail requested for each module and activity both for the task windows and for the log files. Info is the most detailed option, and is recommended. Warn will only provide information about real and potential problems. Error will only log serious errors that occurred.

- **View Log / Activities**

  At the right hand side, a constantly updated log of the selected Module is shown. This option allows the user to view log files, without having to look for them on the server.

  By switching the dropdown menu to "Activities", you can see the activities of the selected Module.

  You can save the contents of this log window using the shortcut ⌘ - S or from the contextual menu.

- **Save / Restore**

  Save and Restore can be used to save and/or restore the settings of all duplicated Modules.

- **Sleep**

  If Modules are inactive for some time, they will be quit, to be restarted when they need to perform any action. As it is impossible to duplicate a module while it is running, the sleep function (in the contextual menu) allows to quit a module, in order for it to be duplicated.

- **Activity List**

  This list shows an overview of the tasks a module has to take care of in the Nexus Workflow system. Most modules only have to perform one specific task, but others have a whole range of similar functions to do. In case of duplicated modules you will see several columns for each module, indicating which activities the module can handle. In that case, you can switch off specific activities for one of the Modules.

- **Edit**

  This button is only shown when the Activity List displayed is an FTP Exposer List and the selected activity is 'Make RTL and Download'. This feature will allow to assign one specific RTL proofer to one FTP Exposer. Details can be found in the next section on setting up multiple FTP Exposers.

- **Show Nexus.env**

  The Show Nexus.env option in the contextual menu is only available on the Control module. It shows the contents of the Nexus.env file. See 1.8. NexusConfig on page 32.

2.14.3 Multiple Modules

A drastic boost of productivity can be achieved by running modules such as the Assembler, NexusProcessor or FTP Exposer multiple times on the same system. While before, plate calculation or exposing to an HP plotter could only be executed one at a time, it is now possible to calculate multiple proofs or plates simultaneously, effec-

tively increasing the throughput of the system. Equally, when multiple plotters are connected to the same NexusRIP, they can be driven in parallel.

The modules that can be duplicated have a wide range of activities to take care of. Therefor, these modules can become a bottleneck when multiple jobs are processed at the same time. By default the controller provides one of each module and one queue per module.

The Modules that can be duplicated are: the Assembler, the CIP3Gen, the EscPConvert, the FTPExposer, the PDFFlattener, the PDFPreProcessor, the PDFTrapper, the Nexus Processor, The RTL, the TotalRIP, the Transport, the Trapper and the PitStop module.

- **Load Balancing**

  By clicking the + button next to a module that can be duplicated, a second module named [Module]#1 will be generated.

  The default queue will feed both modules and each can handle any activity.

  With this basic setup of duplicated modules, only a straightforward Load Balancing will be done. Activities will be performed by one of the available modules, depending on their availability.

- **Prioritizing Activities**

  If priority must be given to certain activities, the modules can be setup differently. Duplicate the module as above. For multiple modules, you see the enabled activities in a column for each duplicated module. These columns are all changeable and effect the correspoding (duplicated) module. Select the duplicated module in the module list and then remove the ticks on all activities in the activity list, except the activities you want to create a fast track for, e.g. the Make Link activity in the Assembler.

  When link files need to be made, the 2nd Assembler will usually be free to do them. If the 1st/main Assembler happens to be idle, it can do them also. You can run this configuration in less RAM than the Load Balancing setup, as long as the memory settings for the link activity are reduced.

- **Multiple FTP Exposers / RTL / ESPC Convert**

- 1. Using different RTL plotter types

  The RTL module must be duplicated.

  Selecting the Make RTL & Download activity in the Activity List will show the "..." button. Click it to enter the IP address of the 1st printer. Select the second RTL Module and repeat, entering the IP address of the other printer.

When you have completed the above setup there will be an RTL module which handles each printer.

When building a workflow that is driving RTL devices directly, the Module popup can be used to define which FTP Exposer and related plotter should be used.

- 2. Using identical RTL Plotters

  If you are using two identical plotters (same size, paper and quality) and you don't care on which plotter jobs get output you can do the following: Do the same steps as for different plotter types.

  When building the workflows, in the RTL activities in workflows and jobs, you can leave the Queue popup and the IP address blank. In this case the activity goes on the default queue, and can be output on either HP. The default Exposer Queue will download the RTL data to the first available plotter.

- **Duplicating the Assembler**

  When duplicating the Assembler, make sure that there is enough RAM in the PC to handle the two modules running at once. When pressing the Edit Defaults button, the Module Defaults window will popup and show us the Assembler Memory Usage. The Assembler requires a lot of RAM and 80% is allocated by default to the total Assembler Usage. When duplicating Assemblers, the available RAM will be divided equally over the different Assemblers. The memory allocation can be changed in the Module default window if needed. You can repeat these steps to make 3 or more Assemblers, but this is unlikely to be useful unless you are running on a PC with 3 or more CPUs, and loads of RAM.

- **Multiple NexusProcessors**

  When duplicating the NexusProcessor, you have no checkboxes for the activities, so it is NOT possible to dedicate one of the NexusProcessors to a specific task. The result will be that all activities to be run through the processor, will go to the first available module.

Chapter 3. Defining Workflows

A new workflow can be defined by selecting "New Workflow" in the file menu, by selecting "New" in the contextual menu of the Workflows window, by clicking the "New Workflow" button in the Workflows window, or by its shortcut ⌘ - ⇧ - N.

When defining a new Workflow, you can either start from scratch, by selecting "Empty" as Workflow Type. You can start from a default workflow, based on the output needed, by selecting the appropriate Workflow type in the list. Once a workflow is created, you can edit it in the Workflow Edit window.

3.1. New Workflow

By creating a new Workflow, the Nexus Workflow Setup dialog will open, in which the Workflow Type, Input Type and name for the Workflow can be chosen.

When clicking the Cancel button or pressing the "esc" key, the dialog is closed, and no workflow is created.

When clicking the Create button, the workflow is created on the server. If Input Type is set to Appletalk Printer, the dialog to define the Appletalk Printer settings is opened. The options for this dialog are explained in 2.12.9 Printer on page 73. If Input Type is set to Hot folder, the dialog to define the hot folder settings is opened. The options for this dialog are explained in 2.12.8 Hot Folder on page 72.

After setting the Hot folder or Printer settings, the newly created workflow is opened in the Workflow Edit Window. When starting from scratch, i.e. using Workflow Type "Empty", only the Workflow activity will be present. Other activities can be added. See 3.3. Nexus Flow Editor on page 115

- **Workflow Name**

  The name of the workflow is restricted to basic characters, and is limited to 31 characters. If the name entered in the input field contains invalid characters such as $, &,..., these are automatically replaced by an underscore. When the name entered contains more than 31 characters, only the first 31 are kept.

- **Input Type**

  The input type for a workflow can be Appletalk Printer, Hot folder or manually select. For more info on these input types, see Chapter 4. Running Jobs on page 138. The input type for a workflow can be extended or changed at any time, in the Monitors tab. See 2.12. Monitors on page 70.

- **Installed RAM**

  The Installed RAM shows the total amount of physical memory available on the server, and not just the amount of memory assigned to Nexus.

3.2. Workflow Type

In the "Workflow Type" list, Nexus provides a whole set of standard, built-in workflows. The predefined workflows mostly refer to Nexus Rip functionality. All of these workflows are applicable in most common pre-press environments. Major differences are the available output devices, and the way of inputting files. There are basically no Nexus Import and Processor workflows foreseen, since these are a lot more customizable, and easier to set up using the "Empty" workflow type. Workflows generated using a "Workflow Type", may be used as they are, or they can be modified and edited at any time.

When choosing a Workflow Type other than "Empty", the dialog will expand, allowing to set Proofer, Outputs and additional parameters (The image below is not an actual screenshot, but it gives an overview of all options).
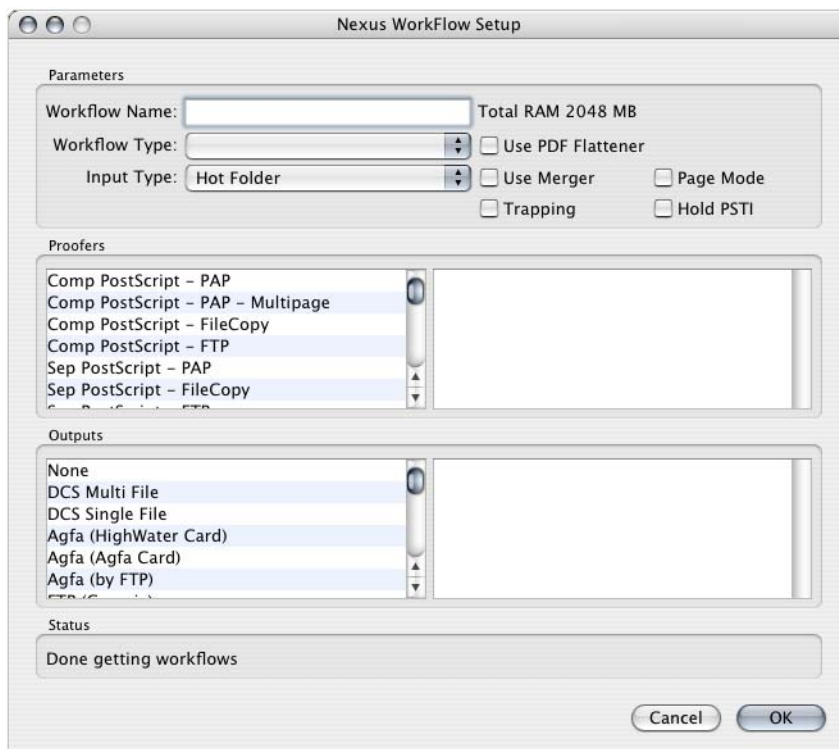
An overview of all predefined workflows is given later in this chapter.

3.2.1 The Nexus workflow setup window

• **Use Merger**

Use Merger and Page Mode is by default checked for all workflows in Nexus. For Basic and Imposition workflows without any proof, DCS output or any other composite output file, the Use merger option is enabled and may be unchecked for performance reasons. As soon as a proofer or output device is added to the workflow using the Add buttons, the Merger and Page Mode will be checked. After interpretation of a separated PS file, the merger will combine the resulting OPPO files into a single OPPO file. All PSTI workflows require the merger. More details on how to setup the merger can be found in 9.3. Merge OPPO Files on page 303.

• **Use PDF Flattener**

Some Workflows will contain the "PDF Flattener" option to flatten PDF 1.5 transparencies before processing the file. See 10.9. PDF Flatten on page 385 for more information on the PDF Flattener.

- **Trapping / Hold PSTI**

  Some Workflows will also contain the "Trapping" and "Hold PSTI" option. See • Autotrap workflow on page 100. PDF Workflows will contain the "Trapping" option.

- **Proofers/Output**

  Multiple proofers and output devices may be selected when setting up a workflow from the respective scrollable lists. By double clicking in the list, or clicking and dragging the output device to the right column, it will be added to the list on the right of used proofers or output devices. If a proofer or output device is added by mistake, it may be deleted from the respective list using command-backspace. The different devices will be discussed on the next page.

  The proofers available in the Add Workflows window are essentially a combination of a file type and an implied or explicit transfer mechanism. These separate activities will be described in detail in Chapter 9. Nexus Basic Rip Activities on page 291.

  In the output list, the separated and mostly screened output from a workflow, is defined. Each selected output option will usually add two or more activities to the workflow execution list.

- **CIP3**

  It is possible in Nexus to add a CIP3 file to a predefined workflow by selecting the installed output driver, and checking the CIP3 check box in front of the output name. This is reflected in the addition of "+CIP3" to the selected item in the output list. The Make CIP3 activity is explained in 9.7. CIP3 on page 316
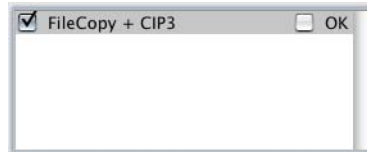
- **Wait for OK**

  For every proof and output, you can select the "Wait for OK" option. This means the output will not start as long as it is not manually launched.

  For more info on the Wait for OK activity, see 6.1. Wait for OK on page 172

3.2.2 Workflow proofers

- **Comp/Sep PostScript (PAP, File Copy, FTP)**

  As with all proofer types, the PostScript proofers are always a combination of a File Type, and a File transfer Mechanism. Where the first activities will be discussed in detail under Nexus RIP, the transfer activities are all File Management activities.

When adding one of these PostScript proofers to a workflow, three serial activities will be added to the workflow representation as shown below.

The first icon represents the Proof file activity, being Composite PS Proof, or Separated EPS proof, which generates the EPS proof files. In case of a composite proof, a CMYK EPS file will be generated, for separated proofs, there will be one grayscale per separation.
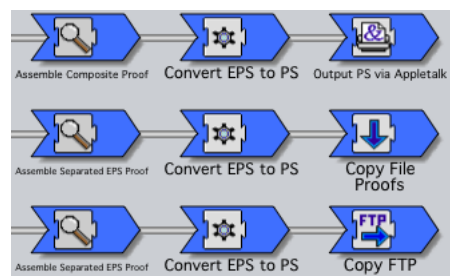
The Cog wheel icon represents the Convert EPS to PS activity, which will convert the resulting EPS files into PS, taking the PPD settings of the target proofer into account.

The last icon represents the file transfer system. In the case of PAP, the PS file will be transferred to the Proofer, using the Appletalk protocol. Through the PS output window, the Proofer name and the Proofer zone in the network should be specified. Other possibilities are the File copy and the copy over FTP activities, which may offer some performance advantages over PAP.

- **RTL Proofers**

  There are four pre-configured RTL proofers in Nexus RIP: RTL File copy, HP, HP Dotproof and FTP HP. Rather than using PostScript code, they all use RTL code to drive the proofers. RTL means Raster Transfer Language an is a subset of PCL (Printer Control Language). Generally it is used to embed raster images (bitmaps) into plotter files.

  Except when choosing HP Dotproof, these outputs will all include the HP proof download activity. The data created here, must still be combined and downloaded over the physical connection to the RTL device. This could be direct, or through an Axis Box by FTP. In some cases it may be useful to create an intermediate RTL file, and copy it to a required destination, this may be achieved by setting up an RTL File copy proofer.

  The HP Dotproof is a special case which combines a Dotproof activity with Download RTL, after assembling screened TIFF data per separation

- **Epson FTP/Parallel**

  This proofer option enables you to drive the Epson 7000 and 9000 series direct by using the EscP Language. All control parameters are available from Nexus and the Epsons may be driven over FTP if a network interface is installed or by using the Parallel port on standard configurations.

- **Disk File & Disk File FTP**

  Where the standard composite or separated PS proofers always result in an EPS file, it may be necessary in some cases to have access to different output formats.

  A Disk File proofer is nothing else than the combination of a composite PS activity with a File Copy or generic FTP. The Output Option is enabled and provides EPS, PDF, TIFF and Scitex CT as file formats. The various options are described in the Composite PS activity under Nexus RIP.

- **DCS Formats**

  Under Raster & Screened output activities, we described the different variants of DCS outputs. The main distinctions are of course the two DCS versions, where DCS1.0 is limited to CMYK, and DCS2.0 may contain spot colors. Another distinction is the use of multifiles or single files. With multifiles, a sub file per separation is created and one main file for previewing purposes. When selecting single file, all info will be contained in one file, but still be separated.

  When making a DCS Proof, all job data will first be converted to CMYK. When using the normal DCS activity, the spot colors will be kept, and the resulting DCS2.0 file will be used with proofers, capable of handling these files.

- **Presstek & Approval Proofers**

  Both are proofers that require some specific settings. Once the proofs are made, corresponding to the device resolutions, they will be transferred by a special version of the FTP file transfer activity. The proofs are made by device specific activities being Presstek output and Approval Proof

  Both for Approval and Presstek, there is a list with the different types on the market, which will force some parameters such as the resolution.

  In case of a Dotproof, the screened page sub will be used for specifying the parameters for the dotproof.

- **TIFF/IT**

  The TIFF/IT proofer added with this option results in a combination of PSTI to TIFF/IT activity and a generic File Copy activity. Adding this proofer to a non-PSTI workflow will result in a failure

due to the file format not being a PSTI. Although this output is only available as a proofer option, it may be used for later high resolution output as well. It is the PSTI Exporter module taking care of the conversion from PSTI to TIFF/IT, maintaining the separation between line work and CT.

- **PSTI FTP**

This standard proof option enables PSTI files, generated in the RIP to be transferred to another system, using FTP copy. The generic FTP activity is the only icon in the workflow for this 'proofer' type

It is appropriate for driving the UNIX based Digital Cromalin PSTI Input capability, but is also useful for transferring PSTI files over a wide area network to another Nexus RIP. Obviously this proofer option is only relevant to be added to PSTI workflows.

3.2.3 Output Devices

- **None**

This option is meant for test purposes. It is not triggering any additional activity on the workflows and thus the Make Separation icon will mostly be the last one in the graphical representation of a workflow. The separated output files, generated by the Assembler will not be copied out of the Job folder to any target device or Spooler.

In the Job folder, you can find all TIFF files to verify them in Adobe Photoshop or DotSpy, or any other TIFF file viewer.

- **DCS Multi & Single file**

This option adds exactly the same output to your workflow as when setting up DCS V2 proofers. Since these files are meant to be used with High resolution separated output, they are defaulted to Version 2.0 format.

Depending on whether the DCS Merge activity is added or not, this will result in a single or multi file DCS.

- **Agfa (Highwater Card) & Agfa (Agfa Card)**

Both options combine a make separation activity and an Agfa Expose activity. The Highwater card and the Agfa card are two different APIS Interface cards, which may be installed directly on the Nexus RIP Hardware. A direct cable connection will be made to the Agfa imagesetter or Printdrive.

The Agfa Expose activity offers a variety of control parameters which are identical for each card. The only distinction is in the drivers at the moment of installation.

Together with the CTM interface, these three interfaces are currently the only ones that provide a direct connection between Nexus and an Imagesetter, without using a Spooler or Third Party RIP.

- **FTP Output**

  As an alternative to direct output using interface card and cable, screened TIFFs may be sent over to another PC, taking care of the physical connection to the image or platesetter. These PC's are running an interface software, such as a spooler, or a limited version of a third party RIP, which provides control over device dependant parameters such as punching, image position, exposure,...

  Although most imagesetters would be able to accept data from Nexus when using generic FTP settings, there are several customized FTP outputs defined. Currently, there are Agfa, Gerber, Optronics, Purup, Saturn, Creo and CSI on the list. The reason is that in these cases, in addition to the normal IP address, Username and Password, there is also a token file been created and sent to the target PC. This token file is different for each vendor, and contains all sorts of information on the job, number of separations, job names,... but offers also a possibility to control some parameters on the devices. The different token files are described in the Rip Drivers activities.

  Output devices not mentioned separately, may just be driven, using generic FTP (f.e. Scitex to a Xitron Rasterblaster or similar)

- **File Copy**

  Is an alternative where FTP to transfer TIFF files is not possible. In the case of File copy, the output files should be copied into a mounted folder or share of the target spooler.

- **TIFF Convert**

  This output device is adding a special conversion activity after the Assembler, which is distorting screened TIFFs in order to make seamless TIFF or LEN output to drum devices such as the CDI.

- **PDF**

  This option is meant to create a rasterized PDF for output on third party RIPs. It adds a Band to PSTI activity to the workflow if necessary, followed by a PSTI to PDF and a file copy activity. This special PDF may not be handled by all RIPs on the market.

- **EPS /PDF Link**

  The default output for Page Workflows is an EPS link file. This is a low resolution representation of a single page or job, with a link to the high resolution file. The Link files are stored on the Nexus

server in a shared directory, so that they are easily accessible for use in imposition applications. It is now also possible to generate a PDF link file instead of an EPS link file.

3.2.4 Workflow types – an overview

The available template workflows through the Add button will be discussed here. The emphasis will be put on the overall meaning of each workflow. The separate modules and activities with their definable parameters will be discussed in the Chapter 6- Nexus Workflow activities.

For this overview sample workflows will be created, outputting to a variety of proofers and output devices.

- **Basic workflow**

   This workflow accepts PS, EPS or PDF and may output to one or more proofers and/or output devices.

   To get started, a simple Basic workflow will be created; it will not include trapping and will simply generate 1 bit TIFF files. We will not output to a specific device and select None in the device list. This will make sure the separations activity is included in the workflow, but the 1 bit TIFF files generated will not leave the Job folder. The Output Device None will typically be used for testing purposes
   The hold PSTI and Trapper are disabled since this is a non-PSTI workflow.

   The graphic representation of this basic workflow shows us next to the workflow icon the merger, an interpreter, a convert EPS to PS activity and an assembler or make separations activity. All of these activities are explained in detail in Chapter 9. Nexus Basic Rip Activities on page 291. In this specific case, where no proofing or composite output is generated, the Merge activity is not really necessary and may be deleted.
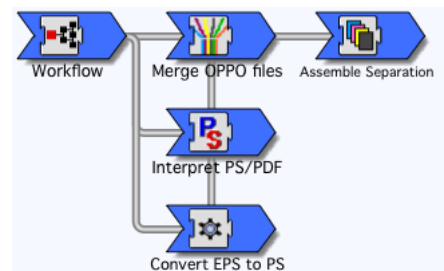
- Running a job through the basic workflow

The first job shows us a 5 color single page document being processed through our basic workflow as it has been set up. As soon as the job has been started, and the job entry pops up in the job list, we can view the progress of each job in the job edit window. The Use Merger box has been left checked so before being further processed, the separated OPPO files are first merged, and then the assembler generates the screened data per separation.
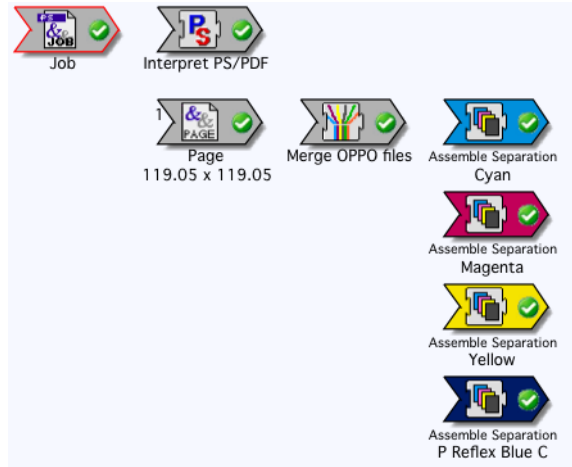
Note: the pages may show document page numbers instead of strictly ascending numbers

The second job shown is the same single page 5 color job, run through this basic workflow. The use merger however has been unchecked and the separated OPPO files will be processed immediately after they have been generated by the interpreter. In this case, each separation will generate a separate page in the job, each holding one color separation.

- Output files

In the examples above, the screened output files, generated by Basic workflows, were never destined to be transferred to an imagesetter or platesetter to be exposed. This because the output device in the workflow has been set to None.

However, the screened files have been created, and saved in the appropriate job folders on the Nexus Server. Their file names include the job and page number, the plate color name and have the extension.tif by default. Also present in this directory are the unmerged and merged (if the Merger has been used) OPPO files and the job log files. The naming of the unmerged OPPO files, is based on unique numeric identifiers, and is generated by control. For information on how to control the name giving and directories of intermediate and final files generated by Nexus, check the Template Editor.

The generated TIFF data may be opened for detailed inspection in a TIFF viewer such as Photoshop or DotSpy. Screened data may only be opened in Photoshop if the size and resolution are rather small.

- **PDF RIP workflow**

This workflow accepts PDF and may output to one or more proofers and/or output devices. The PDF RIP workflow is very comparable to a Basic Workflow, but it is a native PDF RIP, and can be used in combination with the PDF Processor activities: see Chapter 10. PDF Processor & RIP Activities on page 369.
The Trapper option includes a PDF Trapper activity before the actual RIPping.

The graphic representation of this basic workflow shows us next to the workflow icon the Select Page and a Rasterise Separations activity. All of these activities are explained in detail in Chapter 10. PDF Processor & RIP Activities on page 369.

- **Imposition workflow**

An Imposition workflow is essentially a non-trapping workflow that is capable of processing PostScript that contains embedded EPS or PDF link files that reference already RIPped and/or trapped pages. These link files have been created in an earlier stage by one of the Page workflows.

In larger pre-press environments it is very common to run these Imposition workflows on a separate system, designated as a Nexus Signature Server. This is a Nexus system configured in a way that it is capable of communicating directly or indirectly with the final output device, and usually an imposition proofer as well.

To add an imposition workflow, select Imposition as the workflow type in the Nexus Workflow Setup window. Notice that both the trapping and Hold PSTI check boxes are disabled for this workflow type; a PSTI file will never be created for this workflow.
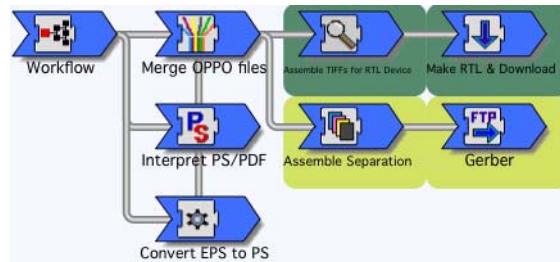
In this example, the Input type has been set up to Hot Folder, rather than Appletalk printer, so this workflow will not be published as a printer on the network, but the PS files have to be written or copied in the hot folder. The imposition workflow shown above, uses an imposition proofer, and outputs to the platesetter, using FTP. The workflow itself is similar to a Basic workflow and in addition there are editors for the proof and the final output device. For the imposition proof, the Proof and the Download activities are included. The Proof activity takes in the merged OPPO files, and creates CMYK TIFF files for output at the requested resolution (300 dpi or 600 dpi). The download activity forwards the RTL data to the proofer itself.

It is important for these workflows that they have access to the already RIPped data. For this reason, the Page Paths in the interpreter may have to be set up different than default. In some configurations it will even be necessary to search for the pages on a separate server. If the pages cannot be found, depending on the settings in the Interpreter parameters window, the job will fail.

It is very common for these workflows to include a Wait for OK activity after the Proof. This allows the user to control the imposition proof, before releasing the job and generating the screened separations.

• **Autotrap workflow**

This workflow accepts PS, EPS or PDF and generates pages in PSTI format, which is necessary for InRIP trapping, and for viewing the composite RIPped file in Nexus Edit. The workflow is cre-

ated by selecting Autotrap as workflow type. For this example, we have selected the Manual Select as the Input Type, which means that the Run Job option should be used to select files.

The PSTI format generated with this workflow may be used to further export composite RIPped and trapped images as DCS (portable PSTI) or even PDF format. In the Autotrapping workflow below, you may see we selected a composite PS proof and Agfa Highwater activity as output devices.
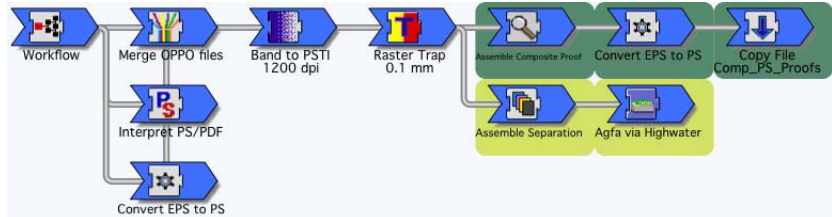
Right after the trapping activity a Wait for OK activity has been included in the workflow because the Hold PSTI option was checked in the setup window when creating the workflow. This will often be done on trapping workflows, so that the trapped pages can be viewed with Nexus Edit before being screened for final output.

Despite its name, an Autotrap workflow does not necessarily has to include the InRIP trapping activity. This depends on whether or not the Trapping check box has been checked while setting up the workflow. When checking the workflow after its been built, we see next to interpreter, merger,... also the bander and the trapper activity. The Bander takes in the composite OPPO files, leaving the merger, and rasterizes them into PSTI file. These files carry the extension .ulw and uct for untrapped line work and CT. Once the banding has been finished, the autotrapping starts and traps the PSTI files according to the settings been done for the trapping activity. The trapped version of the PSTI files are saved carrying the extensions .tct and .tlw for trapped CT and line work.

When we run a job to this workflow, it will be added to the job list as where we may select it and press the edit button to view it. We can see in this example that the job has been processed through the interpreter, merger, bander and trapper successfully before it stops at the Wait for OK icon.

Before releasing the job, it is recommended to check the trapped results as they are, before continuing and outputting proofs or film. See Chapter 13. NexusEdit on page 440

Once the traps on a page have been checked and approved, the page can be released for screening by selecting the OK icon in the job edit window, and pressing the release button. The page will further be processed, assembled and plotted.

Remark that it is very important that the PSTI files open for viewing the traps will be closed, before releasing the OK symbol. If this is not done, the job will fail with an error that the file is already in use by another process. The error may be viewed by selecting the activity icon that errors out, and pressing the error button (red triangle icon with exclamation mark), which indicates the failure. Closing the PSTI files in Insight and retrying the failed activity will solve the problem.

When a problem has been detected with the trapping in Nexus Edit, or if we want to make changes to the default trapping for some specific jobs or pages, we can do that while the page is still waiting to be released.

In the job edit window, you can select the trap activity, which can be edited (provided that it is not active), after double clicking the icon or pressing the edit button.

As will be explained when discussing the Trapper activity, some extra options will be available because we work on job or page level here. These options are meant to specify manual traps, non trapping colors or special cutback colors. The reason these options are not available on the workflow level, is because these settings require some job specific information.

For spot color trapping it is important to know that the CMYK color values as defined in the Color_Lib file will be used, and that possible changes have to be done in the merger

- **Portable PSTI and Portable PSTI Single File workflows**

These are special PSTI workflows, including Autotrapping or not, where the PSTI files are converted into special, compressed, unscreened DCS2 formats using the PSTIExporter module. When setting up one of these workflows, both the trapping and Hold PSTI option will be available since these are PSTI workflows.
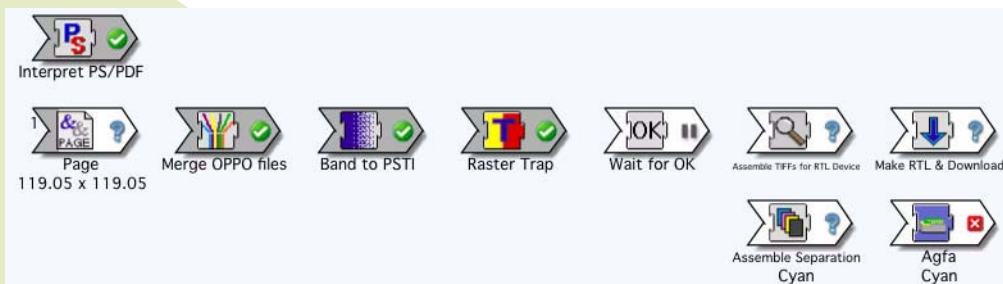
The Portable PSTI workflows are meant to drive any PostScript Device. The ripped pages (including traps) may be placed in any application supporting DCS2 files. When setting up these work-flows, a file copy will be included automatically in the Output Device list in the workflow setup window. Of course, the possibility to add a proof is there as well.

The workflow shown below is a standard Portable PSTI work-flow, with no trapping or additional proofing included. After the bander activity, we see the icons for the DCS8Sub and DCS8Main activity. The DCS8Sub activity processes all colors together to produce one sub file per ink. The DCS8Main activity will generate the main file with an optional preview and proof im-age. Please note that there is a file dependency (see later) be-tween both activities to make sure that the main file will not be generated until the sub files have finished.
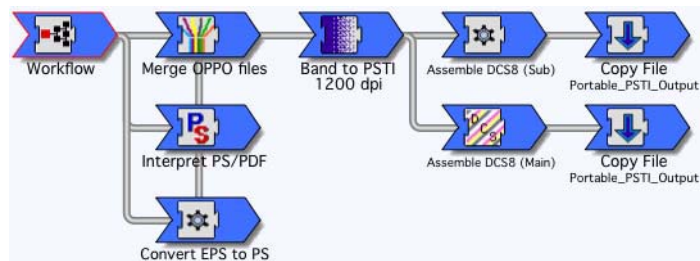
Once the Sub and Main files are created, they will be copied to the Portable PSTI Output folder, if not specified differently, using the file copy activity. Another option would be to use FTP file transfer.

The PSTIExporter activity, setup through the DCS8Sub activity window only contains two control variables, being the mode and compression. For optimal performance, the compression should be set to LZW, since this will result in optimal processing by the target PostScript Interpreter.

The parameters for the Main file, should be edited exactly the same way as for DCS Output, allowing for a composite proofable image to be included if required.

When a job is run on a Portable PSTI workflow, the PSTISepara-tor activity (also called the DCS8Sub activity) generates a number of files, according to the number of separations, which will be copied to the specified destination directory. After the subfiles

being processed, the Main File is processed and copied to the same output directory, which is recommended for easy file access.
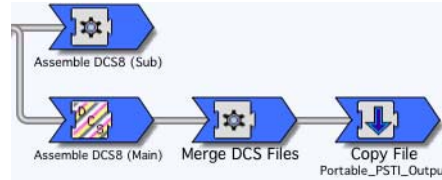
A Portable PSTI Single workflow will include the DCS Merger activity, which will combine the Main and Sub files into one single file. The output file is then copied to the specified output folder. In the job window, the individual separations will not be shown, but processed in one go. The resulting file will contain both sub and main files

- **TIFF/IT Output workflow**

TIFF/IT is a standard for the exchange of digital adverts and complete pages and is very popular for the newspaper production and the gravure printing market. The files contain only bitmap data and no vector data.

A TIFF/IT Output workflow does require the separation of line work and ct data. Logically with Nexus this implies the use of PSTI files. Like a basic workflow, this workflow takes in a PS or PDF which gets interpreted to OPPO files that are then merged to a composite OPPO file. These files will then be converted to a PSTI file using the Bander. Of course at this stage, the PSTI files may be trapped and possibly held for editing in Nexus Edit, as is the case with Autotrapping workflows.

The second activity, indispensable for this workflow type is the TIFF/IT output activity itself, represented by the output device icon. Through the PSTIExporter it will convert the trapped or untrapped PSTI files into a TIFF/IT format. The last step is to copy these files to the final directory using copy file. Two or three files, depending on whether the page contains image data will be copied. (being the lw, ct and fp file)

Of course a TIFF/IT Output workflow can be extended with any proofer or device output. The sample job shown has a disk file proof as proofing device. A 300 dpi proof will be saved as EPS and copied to the specified directory.

Although the creation of a TIFF/IT requires a minimum of two files, they will be copied in one action, not doing a separate copy activity for each file. The resulting TIFF/IT files can be used in further imposition. There are also several applications on the market to view these files, such as TIFF/ITeyes ®, which is a free TIFF/IT-P1 viewer from Rorke Data.

- **TIFF/IT Input workflow**

Another workflow that requires the generation of a PSTI file is the TIFF/IT input workflow. The PSTI file will in this case not be generated by the Band to PSTI activity, but by the TIFF/IT to PSTI Converter activity.

When creating a TIFF/IT Input workflow, the input type will default to Manual Select and the popup will gray out since this is currently the only way to select a TIFF/IT file. A file should be sent using the Run File function. See 4.3. Run File on page 144. The .FP file must be selected to run a job.

This workflow has the ability to import TIFF/IT files, created through any RIP or application capable of generating these files. Other file formats may not be selected. Right after the workflow icon, there is the TIFF/IT to PSTI activity, which replaces the normal Merger and Bander. Since TIFF/IT is the only file format which may be input in this workflow, there is no interpreter as well. Once the file has been converted to PSTI, it may be trapped, proofed and output as any other PSTI workflow. On the sample workflow below, separations are generated after InRIP trapping, which are then copied to a Spooler, using a generic FTP activity.

A possibility is to setup a hot folder based workflow for TIFF/IT input workflows, by adding a Select file activity in front of the TIFF/IT to PSTI activity, and specifying the .FP files to be selected, based on the extension. When setup correct, a folder containing TIFF/IT files may then be dropped in the hot folder, and only the .FP files will be selected and run through the workflow, automatically detecting the LW and CT files.
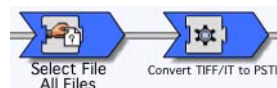
- **PSTI Input workflow**

  This workflow type enables PSTI files, that are for instance been created on another system, to be imported directly into Nexus RIP. They can further be trapped, proofed, screened and output as required. When adding such a workflow, the Input Type will default to Manual Select, which is the only available setup. Hot folder and Appletalk Printer based input is not possible for PSTI files.

  The PSTI Input workflow has no special activity icon, each workflow starts with the initial workflow icon, and immediately the proof and output activities will be added. In this case, we created a PSTI Input workflow, which is outputting to CDI. Once the PSTI files are selected, the make separation activity will create a screened TIFF per separation and the convert screened TIFF activity will generate the LEN files before outputting them to the Grapholas through FTP.

  Running a file always has to be done through the manual select unless preceded by a manual select activity as explained above.

  In the Run File window, PSTI should be selected as the input type, and the required Line work file should be selected through the browser. (this is typically a ulw or tlw file) The corresponding CT files, having the extensions .uct or .tct will be located automatically. If the ct file is selected inadvertently, this will result in a failure in the Scheduler. Obviously, if the PSTI file has been trapped before, the workflow should not include trapping

- **Vector Page workflow**

- About Page Workflows

  The Vector Page workflow is the first of the so called Page Workflows in Nexus Rip. This important feature allows you to Rip pages in advance of imposition. When processing the individual pages, Link files will be generated which can be placed into signatures using imposition applications and output without the need for reRIPping. This is similar to generic OPI applications, but the high res files do not have to be reprocessed by the interpreter.

  To accomplish this, workflows are defined that do not include final output devices, although page proofers may be present to proof the separate pages. In a multi station configuration, these

workflows would run on the Nexus Page server station, whereas the imposition workflows that combine the files for final output would be accomplished on a Signature Server.

Where the common factor of the Page Workflows is the creation of Link files, they differ depending on the Input Data type and the RIPped data format. Vector, Raster and Screened Page workflows all require PostScript, EPS or PDF as input data type. TIFF/IT and PSTI Page workflows will only accept these special input file types. Raster Page, TIFF/IT Page and PSTI Page workflows all result in PSTI, trapped or untrapped, as the RIPped data format. In the case of a Vector Page, the RIPped Data format is OPPO. In the case of Screened Page workflows, the only available RIPped data format is TIFF, normally screened and one file per separation, although all accessible through a single link file.

- Setting up a vector page workflow

From the Workflow setup select Vector Page as the workflow type. Notice that both the trapping and hold PSTI buttons are disabled, since no PSTI format will be created. In the Output Device list, a make link activity will appear. The Vector Page workflow does not generate screened files for final output, so additional Output devices should not be specified (although possible). Screening is not done until signatures are processed in an imposition workflow.
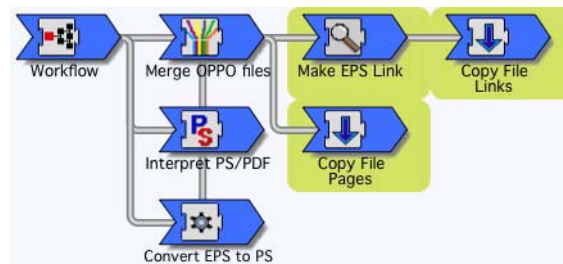
On the picture we can see that preparing the Link file consists of three stages, namely making the link file itself (being it EPS or PDF), copying the ripped page file and copying the link file.

Copying the link file is file dependant on the Make Link activity and order dependant RIPped page activity. This makes sure that the link file will not be available and used in an application, before the page files have been finished. (for more info on dependencies see 3.4.1 Dependency: File vs. Memory on page 119)

The Link file may be assembled according to a range of definable parameters, as discussed in the Make Link activity, and is a small EPS or PDF file with a proof image and/or a preview for convenient use in imposition and step-and-repeat applications. Once the composite OPPO files are generated, the make link activity will prepare the Link file that references the RIPped page.

The Link file and Page files are then copied to designated directories, mostly different and organized in a hierarchical fashion. This is very important, since the Link files must be easily accessible for the operators performing the imposition tasks based on the vector link files. The default for these directories is the Page folder and the Link folder, and may be changed using the Template Editor. It makes sense to define these folders as shared Mac Volumes on the Windows 2003 Server. When printing the Signatures at a later stage, the different Page Paths can be defined in the Interpreter settings of the Imposition workflow. The default path will always be included, but other directories would need to be explicitly included.

Once these files have been copied they are no longer subject to being purged. They remain in existence, even if the original job has been purged. The reason is that in production environments, there may be a considerable time difference between the production of the single pages, and the final output of the signatures.
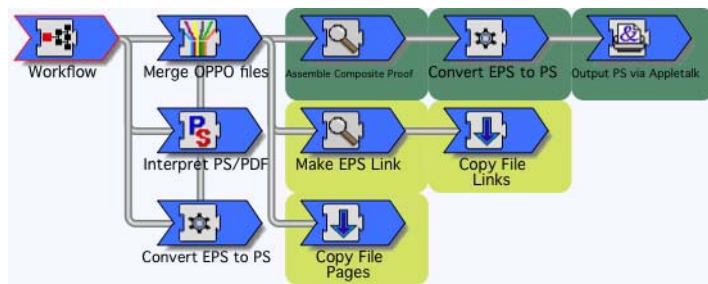
The Vector Page workflow shown includes a composite proof being sent over PAP. It is very common to add one or more proofing activities to Page Workflows, so that the pages can be checked for content. In this case there will be a direct output to a Post-Script Proofer.

When jobs are run on this workflow, the job window shows two proofing activity icons, the upper one corresponds to making the composite proof, and the lower one to making the Link file. The cog wheel icon represents the conversion of the EPS proof file to composite PostScript file, based on the information obtained from the target proofer PPD, and further defined in the PS Proof Parameters window. The last icon represents downloading the PostScript file over the Appletalk network.

In a Vector Page workflow, no screening will be applied. The individual pages have been interpreted and merged into composite OPPO files. When the imposition must be done, the existing Page Files will be used, which is important for data integrity and performance reasons.

- Static Links

Standard link files created by any Page Workflow will reference in their header to the page file in the Job folder. In the case of a Vector Page workflow, the Make Link file activity is file dependant on the Merge OPPO files activity as shown above.

Merge OPPO files   Make EPS Link

```
☐/PCCReplaceImages where {pop PCCReplaceImages} {false} ifelse {
☐<<
☐    /Path (D:/Nexus_Mac/Nexus Rip 6.5 rev 2/Jobs/Job_71/J71P001.opo)
☐    /Colors [ (Cyan) (Magenta) (Yellow) (Black) ]
☐    /NaturalSize true
☐>> PCC_OPPO_Link_Helper
```

When processing the impositions, the page files will be searched for initially in the Job folder. If the job folder has already been purged, the default Page Paths in the Interpreter will be used. If the Pages can still not be located, the job will fail.

In some production setups, it may not be recommended to use default paths, e.g. when you want to be sure that the latest, correct Pages are used, or if one want to avoid searching through large, default directories. In these cases, you can force the Link file to be static, by modifying the Page workflow as shown. The EPS Link file activity is in this case file dependant on the file copy from the Page File. Static Link files contain the absolute Page Path and when processing the imposed files, the pages will be searched for in this location.

Workflow   Merge OPPO files   Copy File Pages   Make EPS Link   Copy File Links

Interpret PS/PDF

Convert EPS to PS
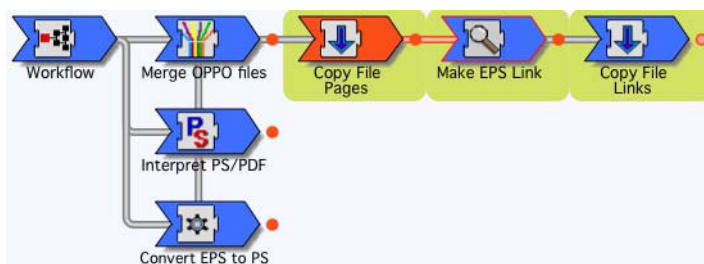
All Page Workflows can manually be modified in a similar way to generate Static Links.

```
☐/PCCReplaceImages where {pop PCCReplaceImages} {false} ifelse {
☐<<
☐    /Path (D:/Nexus_Mac/testpages/J83P001.opo)
☐    /Colors [ (Yellow) (P072) (P485) (P3405) (Rhodamine Red) ]
☐    /NaturalSize true
☐>> PCC_OPPO_Link_Helper
```

- **Raster Page workflow**

  This Page workflow starts with the interpretation of PS, EPS or PDF, and includes the Band to PSTI activity. This Page workflow will be useful, where pages need to be trapped, using inRIP trapping before imposition, or if softproofing using Nexus Edit will be applied.
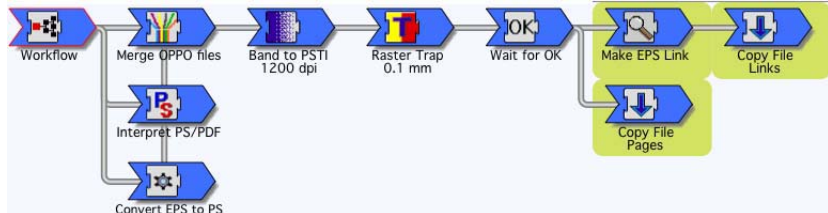
  To add this workflow to the workflow list, we selected Raster Page as Type. Both trapping and Hold PSTI are available and been checked for this workflow. In general, the procedure is much the same as for Vector Page workflows. The workflow part, where the Link file is created, and the Page and Link files copied to their destination, is identical. The difference is that in this case, the composite OPPO file is rasterized to PSTI format, and the Link file is derived from this PSTI rather than the OPPO file. When trapping is included, the Link file will of course reference the trapped PSTI format.

  In a Raster Page workflow, no screening will be applied since this is done through the final imposition workflow. However, because the single pages have already been rasterized to PSTI and been trapped, the performance gain on the Imposition workflow will be considerable, provided that the PSTI data does not need to be rotated for proof or separation output. Rotation of rasterized data is very time-consuming and should be avoided when possible.

  Adding a proof, or making final output of the pages is possible, and may be defined when the workflow is created. In this example, no proofing is defined, but the Hold PSTI activity is included, which will allow for soft proofing, once the Trapper has finished the page. When a multi page job is run through this workflow, each page will be treated separately, and a Link file per page is generated. The Wait for OK will hold the trapped page, selecting the trapper icon, and pressing the Nexus Edit button will launch Nexus Edit and open the trapped CT and Line work to check the files before further processing.

- Resolution

  It is very important that PSTI files are rasterized and resolution de-pendant. The resolution defined for the Bander must be sufficient for the final output resolution, or there could be some loss of qual-ity, especially for the line work.

- Screening

  Another limitation of Raster Page workflows is that PostScript Object based screening is not retained in the Page files as is pos-sible with Vector Page workflows. The pages will be screened ac-cording to the parameters, used for the final imposition workflow.

- **TIFF/IT Page workflow**

  The TIFF/IT Page workflow is similar to a TIFF/IT Input workflow, except that instead of outputting to a high resolution device, the (optionally trapped) PSTI file is saved on the server, together with a Link file that may be used in later impositions. Further handling is than identical to a regular Raster Page workflow.

  TIFF/IT is a popular exchange file format in commercial environ-ments, this because of the limitations in file editing. Once a page has been converted into TIFF/IT, there is no risk anymore for font problems and content related changes. The FP file can be posi-tioned directly in an application supporting TIFF/IT for Imposition. If TIFF/IT is not supported it makes sense to create a Link file through the TIFF/IT Page workflow.
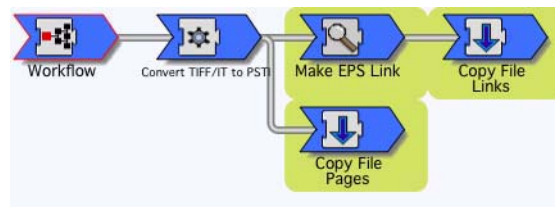
  When TIFF/IT Page has been selected in the workflow type pop-up, the input type will default to Manual Select, similar to the TIFF/IT Input workflow. Both Trapping and Hold PSTI will become available as with any other PSTI workflow.

  As with a Raster Page workflow, screening will be applied when assembling the Signature.

  To start a job, the FP file should be selected through the browser, as in a normal TIFF/IT Input workflow. The LW and CT files will be located automatically. Once the files are converted into PSTI, Nexus RIP can apply its features such as InRIP trapping, proof-

ing,... before creating the Link file and copying them to the setup directories.

- **PSTI Page workflow**

  As you know, Nexus Rip has the capability of inputting PSTI files, originating from a different Nexus Rip, using the Manual Select option. With a PSTI Page workflow there is the possibility to create Link files of these, and further use them in Imposition or Step-and-repeat jobs.

  Where PSTI files are unique for Nexus based systems, such workflows enable you to use this file format as standard, and make it compatible with most Signature applications through the use of EPS Link files.

  This workflow is even more simple than the previously described TIFF/IT Page workflow, because there is no conversion needed at all. Through the Run File browser, the .ulw or .tlw file will be selected, and PSTI as Input Type. If a CT file is available it will be found automatically.
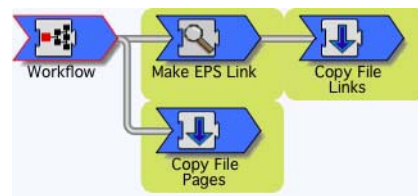
  From the workflow representation we can see that the PSTI file is not further edited (unless trapping has been added) and copied right away to the Page File directory. The first action is the Link file being generated, in the same way as for a Raster Page workflow.

  Again screening has to be applied when processing the final Imposition

- **Screened Page workflow**

  As with Vector and Raster Page workflows, PostScript, EPS or PDF may be input through Appletalk Printer, a hot folder or manual select. With this workflow type, PSTI files will not be generated if the Trapping box is not checked, so Hold PSTI and softproofing through Nexus Edit are not always possible.

  In a Screened Page workflow, the RIPped page files are generated by a special version of the Assembler (Assemble a screened page sub activity) and would normally be a set of screened TIFF images for each page. These TIFF images are basically ready for

high res output. Potentially this can reduce the time required to make imposed flats, because the individual page data does not require rescreening.
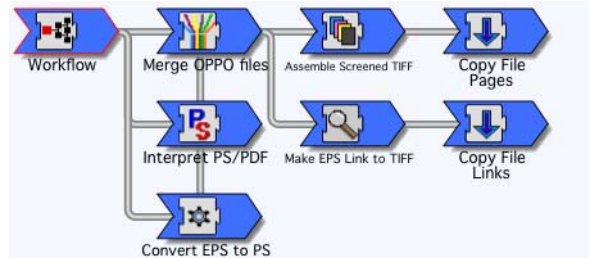
Using this workflow type enables you to combine pages or elements on one signature, that require different screening parameters. This may be an alternative to using an application such as ArtPro, where object based screening must be used.

Another useful application is the possibility to make sure for Step & Repeat jobs that all single jobs have the exact same screening. When stepping high quality labels, it may be required that every single label has the same screening, dot per dot. A Screened Page workflows allows you to achieve this, since the page data does not require rescreening. Note that PostScript Object Screening is effective through a Vector Page workflow, so a Screened Page workflow may not always be necessary in order to preserve screening on a Step & Repeat job. However, use of the Screened Page is necessary to ensure an identical phase relationship between image and screen dots. When defining the parameters for Assembling the Sub pages, it is extremely important that the specified resolution must match the resolution as specified in the imposition workflow, otherwise images will be incorrectly screened. This implies that the final output device must be known at the moment of processing the single pages.

When running a job on a Screened Page workflow, a 1 bit TIFF file for each separation will be created and copied to the specified destination directory. The Link file will thus reference multiple files instead of a composite OPPO or PSTI file. Notice that there is a dependency between the Assembler activity and the Make Link file activity to make sure that all TIFF files are available, before generating the EPS Link file. Although if a Proof image or preview are requested, these will be generated from the input file, being PSTI or OPPO.

- **TIFF Expose workflow**

  This workflow is required when already screened TIFF files need to be transferred directly to an output device. This workflow simply takes in the 1 bit TIFF files and copies them to the designated devices. The input TIFF files do not need be generated by a Nexus RIP.
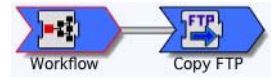
  When a TIFF expose is added, the Input Type will default to Hot Folder, since this is the only useful Input Type for this workflow. Appletalk Printer based input is not possible, and Manual Select is only relevant for test purposes or Stitcher input.

  The input to a TIFF expose workflow may also be TIFF files that have been created by the Stitcher, when operating in TIFF mode. How the Stitcher functions is explained in detail under 'monitors'

  Including a proofer on a TIFF Expose workflow is not possible, because each input file consists of a single separation, and thus no composite page image is available. Likewise, PSTI options are disabled. A normal TIFF Expose workflow will only show the output driver activity next to the workflow icon as shown here, except when the CIP3 activity has been added while defining the workflow.

  Sometimes it makes sense to have a simplified Nexus RIP with only a TIFF Expose workflow on a separate Server. For instance if several output devices have to be connected through interface cards, but only one full RIP is desired for productivity. Setting up such a spooler through this TIFF Expose workflow is also useful if an imagesetter is connected, which requires a very smooth continuous data stream such as the CTM.

  It is important that the resolution of the TIFF files must match the target device and the orientation must be correct for final output on film or plate.

- **JDF Imposition Workflow**

  JDF is a Document format allowing to optimize RIP time for Step and Repeats of PDF files. A JDF file for impositioning, contains the location of all individual files. These individual files (even marks etc.) need to be PDF files.

  The JDF file can be generated in e.g. Preps, Dynastrip or FastImpose, but it can also be generated by ArtPro or Nexus, using the Export PDF dialog. This will export the one-up files as PDF (or copy them if they are already PDF files), export additional objects (such as marks etc.) as separate PDF file(s), and a JDF file containing the positioning of all those files.

Keep in mind that, when exporting JDF, a PDF file is created for every group of objects. Therefore, it is useful to group marks etc. before exporting JDF, to avoid having too much different files. Marks generated by the marks functionality are automatically grouped.

- JDF Imposition Workflow

  The JDF Imposition Workflow should be built in different steps: select the JDF and convert it to a "fat" PDF, and rasterize it.

1. Select File

   To select the JDF file.

2. JDF to PDF

   This converts the JDF file into a "fat" PDF file.

3. Select Page

   To select the pages from the "fat" PDF file.

4. Rasterize

   To Rasterize the "fat" PDF file.

3.3. Nexus Flow Editor

The Nexus Flow Editor is opened automatically when creating a workflow. It can be opened for existing workflows by selecting the workflow in the Workflow window and clicking Edit Workflow, or by double-clicking the Workflow in the list.

The Flow Editor consists of these panes:
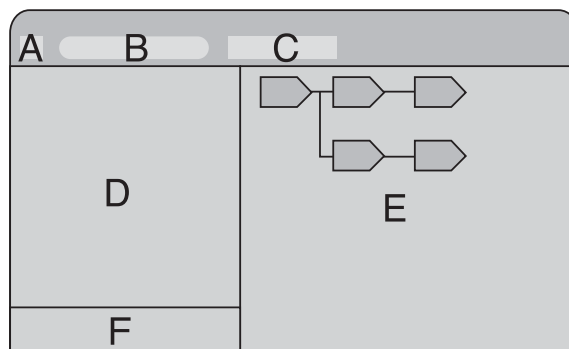
- A: Lock
- B: Activity Find
- C: Activity Actions buttons

- D: Available Activities
- E: Workflow preview: previews the workflow in a graphical way. This can be split horizontally or vertically using the contextual menu. This can be usefull for large chains of activities.
- F: Activity Name, Activity Label and Group Name.

Sections A B and C can be hidden using the shortcut ⌘ - ⌥ - H.

3.3.1 Padlock

When opening a workflow in the Nexus Flow Editor this icon will be locked, ensuring that no activities can be accidentally added or removed. You need to unlock it to make changes to the workflow.

The Padlock will NOT prevent parameter editing of the activities in the workflow.

3.3.2 Activity Find

The Find function above the Activities allows to search for a specific activity in the list, based on its name, using a Finder-like search function.

3.3.3 Activity Actions

- **Delete Icon**
  will delete the selected activity (or activities) from the workflow display area.

- **Hold Icon**
  will hold the selected activity in the workflow, any job going through this workflow will then automatically put that specific activity on hold. In the workflow display area this is indicated with a pause symbol appearing in the activity icon.

- **Release Icon**
  when an activity has been put on hold, selecting the activity and clicking the Release Icon will remove the Hold state.

- **Parameter Icon**
  will allow to edit the parameters of that specific activity, this is equivalent to double clicking the activity. For a full description of all activity parameters please refer to Chapter 5. File Management Activities on page 156 through Chapter 10. PDF Processor & RIP Activities on page 369.

3.3.4 Workflow Activities

The Section on the left shows all activities that can be entered in the edited workflow. The activities are divided in a number of categories. Next to the default categories, the folder defined as Workflow Template folder in the preferences will also be shown as a category, allowing to select workflow templates. See 3.5. Workflow Templates on page 130.

The different categories and where to find more explanation on all activities:

- File Management activities: see Chapter 5. File Management Activities on page 156

- Communication activities: see Chapter 6. Communication Activities on page 172

- Nexus Import activities: see Chapter 7. Nexus Import Activities on page 183

- Nexus Processor activities: see Chapter 8. Nexus Processor Activities on page 242

- Nexus Basic RIP activities: see Chapter 9. Nexus Basic Rip Activities on page 291

- PDF Processor activities: see Chapter 10. PDF Processor & RIP Activities on page 369

- PDF RIP activities: see Chapter 10. PDF Processor & RIP Activities on page 369

A selected activity may be added to a workflow by double clicking it, or by dragging and dropping it on the Flow Editor. The new activity will appear at the end of the current workflow, depending on which activity in the workflow display area is active (e.g. when an activity in a second branch is active, the new activity will be added at the end of that line).

It is also possible to insert an activity into an existing workflow sequence, by dragging it onto the line connecting two activities, in which case it will be scheduled for execution between these activities, possibly taking its input from the first and providing output for the second. Care must be taken to ensure that the input and output file types (where applicable) are compatible.

3.3.5 Activity Name & Label

If an activity is selected, its label can be entered, so that it represents the actual function of the activity. The Name (fixed) and Label of an activity is shown in the graphical workflow representation. If no label is defined, some activities will show additional info based on the parameters of the activity.

Labels and names can be hidden or shown using the contextual menu.

3.3.6 Activity Group

Using the Activity Groups, you can combine a number of activities into one group, to make it obvious that these activities are part of a certain task, e.g. creating a HP Proof and sending it to the HP Proofer.

Activities belonging to a group will have a colored square underneath, and will show the group name.

To change or set the group name or color, select one or more activities, and select "Set Group" in the contextual menu. Define the name and the color for the group, and click "Set".
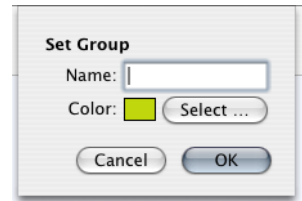
To remove a group, right-click on an activity of the group, hold down the shift key and select "Clear Group".

Note: When creating a new predefined workflow, some activities will already be grouped, e.g. when selecting RTL FileCopy as proof device, the "Assemble Tiffs for RTL Device", "Make RTL" and "Copy File Proofs" activities will be in the RTL FileCopy group.

3.3.7 Preflight

During the restoring of workflows, the activities are preflighted, and a check is made to ensure that all defined paths and external files are on the Nexus Server. If not, a list with missing files will be presented. From this list, you can directly edit the activity in the workflow. If the Nexus Server is mounted, the folder containing the missing file can be revealed (if it exists) from the contextual menu.

From the contextual menu in the Workflow Editor, it is possible to preflight the workflow being edited.

Restoring workflows will show the resolve window if needed. The preflight window is only shown when doing a preflight on the workflow.

3.3.8 Dependency Visualization

Dependencies define relationships between different activities in a workflow. As an example, if an activity needs to work on a file that has been saved to disk by an earlier activity in the workflow, we define this relationship by saying that this activity is "file dependent" to the earlier activity that saved the file to disk.

Note: Dependencies can only be seen and changed if the Show Dependencies is on in the preferences. See 2.1. Preferences - Show Dependency Colors on page 34

NexusManager visualizes dependencies by adding additional lines and colors to the user interface while highlighting the appropriate activities that are related to the selected activity. Furthermore the highlight color will aid the operator in checking the type of depen-

dency (e.g. file, order, memory). This visualization can be enabled through the Preferences. See 2.1. Preferences - Show Dependency Colors on page 34

If an activity is selected in a workflow, the related activities will highlight in the correct color.
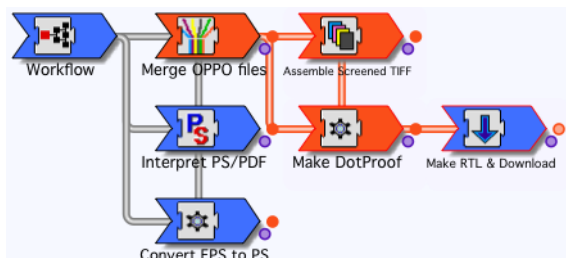
For this basic workflow, selecting the HP Dotproof activity, will highlight the Merge OPPO and Assemble Screened TIFF activity in orange, which means there is a file dependency.

If no activities are selected in the workflow then no activities will be highlighted although all dependency lines for every activity will be shown.

For a full description on dependencies and their importance in building workflows we refer to 3.4.1 Dependency: File vs. Memory on page 119.

3.4. Building a workflow

3.4.1 Dependency: File vs. Memory

There is a fundamental difference between NexusImport and –Processor workflow parts, and NexusRIP or Nexus PDF workflow parts. Every activity from NexusRIP and Nexus PDF reads a file (or group of files) from disk, performs an action, and saves a resulting file back to disk. Hence every activity from NexusRIP or Nexus PDF refers to a file on disk, on input as well as on output. This is typically referred to as "file-dependent".

The snapshot shows three activities:

- A Merge activity
  reading a separated OPPO file and writing a merged OPPO file

- An Assembler activity
  reading a merged OPPO file and writing e.g. separated screened TIFF files.

- A Copy activity
reading the separated screened TIFF files and copying (writing) them to another location on disk.

Additionally, the Assembler activity has been selected (indicated by the red outline) and at the same time the Merge activity gets highlighted in orange, indicating the Assembler activity is file dependent to the Merge activity. Equally, both activities are now connected with an orange line, further illustrating the file dependency.

NexusImport and –Processor activities are typically "memory-dependent". Typically these activities will perform an action on the data which is at that time in memory, and hence alter the contents of the memory. There are obviously some exceptions to this as will become clear from the NexusImport and NexusProcessor activity lists above. Activities like Insert File, Importing, Open File, etc.… will read data from disk and alter the contents of memory, activities like Export PDF, Save File, Print to File, etc.… will work with what is currently in memory and write an output file (e.g. PDF, PS) based on that data.
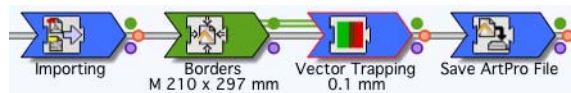
The snapshot shows a part of a NexusImport / Processor workflow with following activities:

- An Importing activity
reading PostScript from disk and converting the PostScript file into an ArtPro File in memory.

- A Borders activity
Changing the borders on the data in memory, not reading or writing to disk.

- A Vector Trapping activity
activity trapping the data in memory, not reading or writing anything to disk. However, there is a File Dependency button at the end of the Trapping activity, since TIFF files will be saved to disk if flattened opaque traps are being used. If trapping is done using blends, no output files will be generated.

- A Save File activity
saving the data from memory to an ArtPro file on disk.

Additionally, the trapping activity has been selected (indicated by the red outline) and at the same time the Optimizing activity gets highlighted in green, indicating the trapping activity is memory dependent to the optimizing activity. Equally, both activities are now connected with a green line, further illustrating the memory dependency.

Above explanation on file and memory dependencies will equally serve to explain why some activities may be retried after a job has been processed, while others cannot be retried. One general rule makes this clear: only activities reading data from disk can be retried.

Above explanation also explains why NexusImport or Processor activities always need a "Close File" activity at the end of the workflow. Since data remains resident in memory it needs to be closed off at the end of the job.

3.4.2 Workflow branching

As indicated in the general explanation of building workflows, when an activity is double clicked in the activity list window it will be added at the end of the workflow (or current branch), an activity can equally be dragged to a location in the workflow display area, or moved in the workflow display area. Following sequence shows the creation of a simple workflow including the addition of two branches…

- **NexusRip Activities only**

Add a PS Interpreter to the workflow, this will read a PS (PDF) File from disk and generate a non-merged OPPO file on disk

Add a Merge activity to the workflow, this will read a non-merged OPPO file from disk and generate a merged OPPO file on disk. Notice the file dependency to the Interpreter activity.

Add a Composite Proof activity to the workflow, this will read the merged OPPO file from disk and generate a proof file (format dependent on activity parameter settings) on disk. Equally, the red dependency line and the highlighted Merge activity clearly illustrates the file dependency.

Add a Copy File activity to the workflow, this will read the proof file from disk and copy (write) the proof file to a specific location. Again the file dependency is illustrated with the highlighted activity and the red connection line.

Add a Make Link activity to the workflow, underneath the Composite Proof activity, this will read the SAME input data from disk as the Composite Proof activity, e.g. the merged OPPO file which is the output of the activity it is connected to, and write a Link file for that

merged OPPO file to disk. In this case it becomes very easy to determine which file will be read from disk for processing because of the highlighted file dependency and the red connection line.
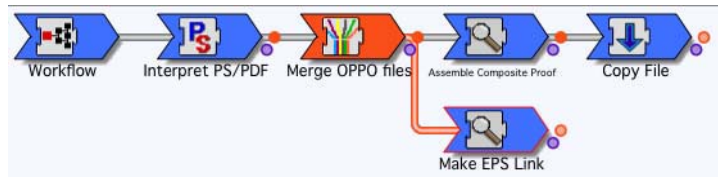
Add a Copy File activity to the workflow, this will read the Link file from disk and copy (write) the Link file to a specific location for use in an imposition application or a step and repeat application.
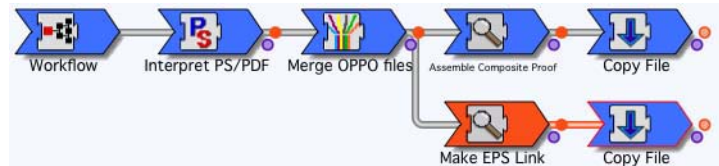
Add a Copy File activity to the workflow, underneath the Make Link activity, this will read the same input data from disk as the Make Link activity, e.g. the merged OPPO file which again is the output of the activity it is connected to, and copy (write) that file to a given location on disk. Again the red connection line clearly illustrates the file dependency.
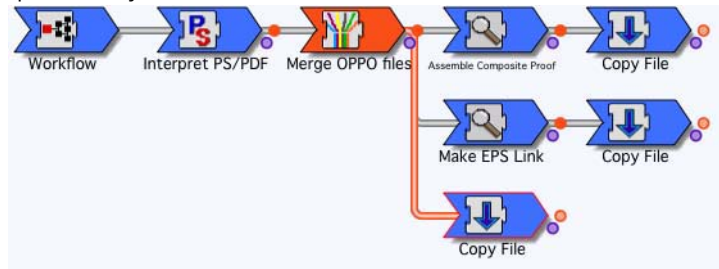
This clearly the workflow branching capabilities of Nexus, in this case with a NexusRIP workflow only. Please note that activities which are in a different branch may be executed simultaneously, provided they are not part of the same module (see Modules). In this example the last Copy File activity and the Make Link activity may be executed in parallel.

The same way of working can be used for Nexus PDF Processor activities.

• **NexusProcessor Activities Only**

The same branching can occur with NexusImport or Processor workflows, and even in combination with NexusRIP workflows. Following shows a sequence of setting up a simple NexusImport / Processor workflow with one branch…

Add an Importing activity to the workflow, this will read a PS (PDF) File from disk and generate an ArtPro file in memory,

Add an Vector Trapping activity to the workflow, this will trap the data in memory and alter the contents of the memory. The green connection line and the Importing activity which is highlighted in green clearly illustrates the memory dependency between the trapping and the importing activity.
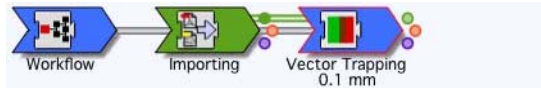
Add an Print to File activity to the workflow, this will export the contents of memory to a PostScript file and write this PostScript file to disk. Again the green connection line to the trapping activity and the green highlight color of the trapping activity shows that the Print to File activity is memory dependent to the trapping activity.

Add a Close File activity to the workflow, this will remove the contents from memory, hence close the file. As indicated above, every branch of a NexusImport or NexusProcessor workflow needs to be terminated by a Close File activity.

Add an Export PDF activity to the workflow, UNDERNEATH the Print to File activity to take the data from the trapping activity and export this to a PDF file on disk. The green line to the trapping activity shows the Export PDF activity will export the contents from memory as updated by the trapping activity.
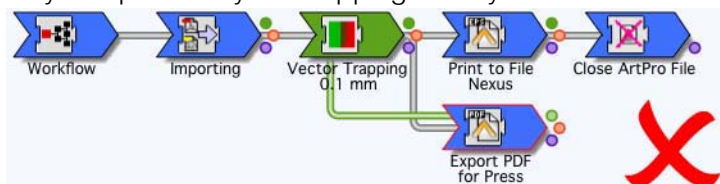
Add a Close File activity to the workflow, this will remove the contents from memory, hence close the file. As indicated above, every branch of a NexusImport or NexusProcessor workflow needs to be terminated by a Close File activity.
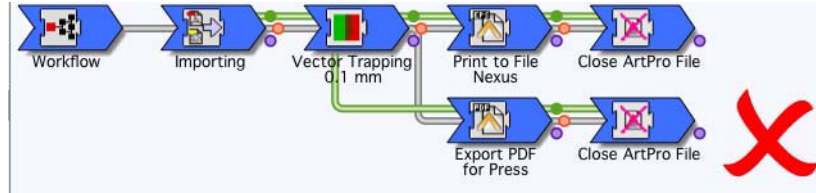
Until now, the building of this workflow follows the same logic as the previous NexusRIP workflow. However, in the first note we saw the importance of the memory dependency of activities of NexusImport and –Processor workflows and the file dependency of activities of the NexusRIP workflows. Because workflows are always executed from left to right first and then from top to bottom, and since the second branch in this workflow is equally based on memory dependencies this means that **ABOVE NEXUSIMPORT / PROCESSOR WORKFLOW CAN NEVER WORK CORRECTLY**!

Note the following sequence when a job would be executed through this workflow… again NexusImport and -Processor activities are always executed sequentially from left to right and from top to bottom…

- import file and store in memory
- trap file and alter memory contents
- generate PS file from memory contents to disk
- empty memory…
- generate PDF file from memory contents to disk….

This clearly demonstrates why the workflow can not work correctly: due to the nature of memory dependencies the PDF file would be generated from a non existing file since the file WAS ALREADY CLOSED BY THE FIRST BRANCH!

The only solution to this is to either sequentially execute the Print to File and Export PDF activities, or to introduce 2 Open File activities, in front of respectively the Print to File activity and the Export PDF activity. Furthermore, in order to be able to Open a File within a workflow, one needs to obviously save a file first.

There are 2 ways of ending up with an operational workflow from the status of the previous workflow based on this last method. This

method will actually have the advantage that it will be possible to re-try either the Print to File branch or the Export PDF branch as need-ed.

- delete all activities to the stage where only the Importing activity and Vector Trapping activity were there and build from that starting point.
- modify the previous workflow by adding activities and moving activities within the workflow

The first method starts from the Vector Trapping activity which is memory dependent to the Importing activity.

Add a Save ArtPro File activity to the workflow, this will save the contents of memory to disk. The green line indicates the memory dependency to the trapping activity.
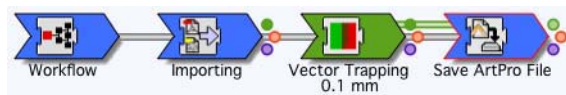
Add a Close File activity to the workflow. Since we will have to add two Open File activities at a later stage, we first need to make sure that the file has been closed first. It is not possible to have one file open in Nexus' memory multiple times.

Add an Open ArtPro File activity to the workflow. It will have auto-matically a File Dependency to the Save ArtPro File activity which is visually indicated by the red line between the Save ArtPro File Activ-ity and the Open ArtPro File activity.
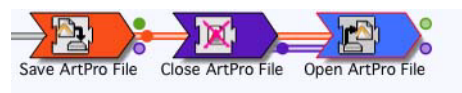
Add a Print to File activity to the workflow, this will export the con-tents of memory to a PostScript file and write this PostScript file to disk.

Add a Close File activity to the workflow, this will remove the con-tents from memory, hence close the file.

Add a second Open ArtPro File activity to the workflow, underneath the first Open File activity, again this activity will get a File Dependency to the Save ArtPro File activity.
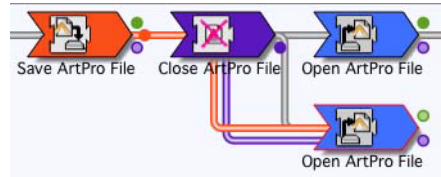
Add an Export PDF activity to the workflow, BEHIND the second Open ArtPro file activity, this will export the contents of memory to a PDF file on disk.

Add a Close File activity to the workflow, this will remove the contents from memory, hence close the file.
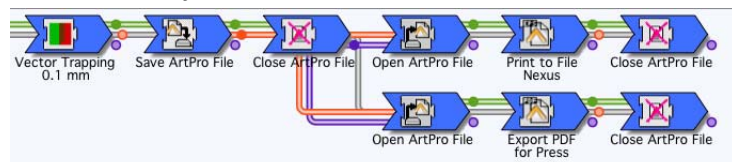
3.4.3 Collapsing Workflow Branches.

Every activity in a workflow is typically connected to another activity (or to the workflow icon when it is the first activity in the list.) Depending on the type of workflow or the type of connection this could be a memory dependency or a file dependency (or a combination of these). When all dependencies between the activity and the activity it is connected to are removed (broken), then the connection will disappear and all activities which followed this activity will collapse into the activity itself.
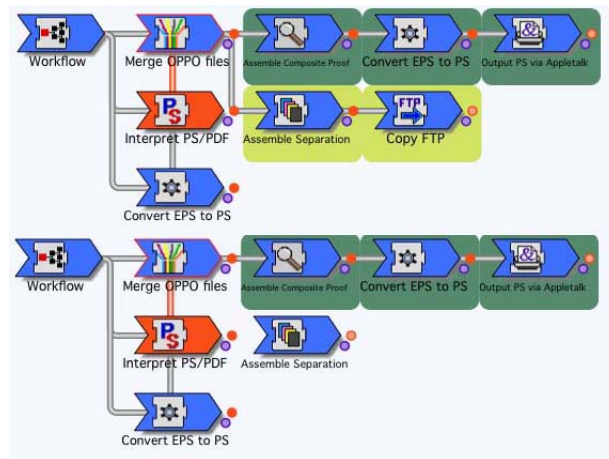
This results in one activity standing on its own in the workflow display area: in the first snapshot the assembler activity is connected to the FTP activity and to the merger activity, by disconnecting the assembler activity from the merger activity the FTP activity collapses

into the assembler activity which stands on its own. Reconnecting (e.g. creating a dependency) to the merger activity will make the FTP activity reappear.

3.4.4 NexusProcessor and NexusRIP

In order to connect a NexusImport and/or NexusProcessor workflow with a NexusRIP workflow, the connection needs to be made through PostScript. Practically this means that NexusImport and/or NexusProcessor need to "Print to File" after which the NexusRIP module needs to Interpret and Merge the PostScript for further processing.

In the example below, a file is imported, trapped, saved and then printed to the RIP which will make a proof file, make a link file, and copy the hires RIPped data to a location on the disk.
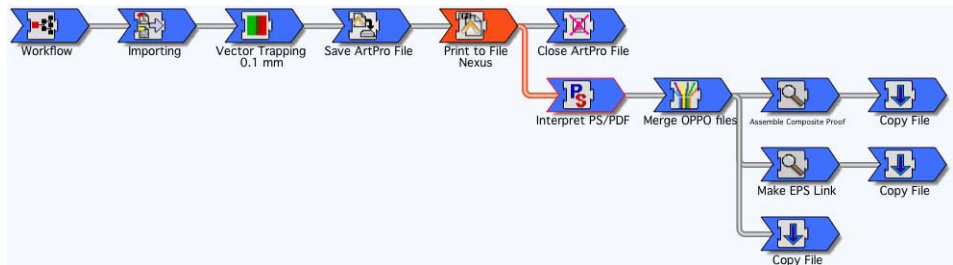
Four activities are important in the connection:

• Print to File activity:

generates separated Post-Script data from the ArtPro data

• Close File activity:

closes the ArtPro file

• Interpret activity:

Interpret the PostScript (separated data), notice the Interpreter activity is connected with an orange line to the Print to File activity, hence is memory dependent, equally demonstrated by the fact that the Print to file activity is highlighted in red.

• Merge Activity:

Merges the separated data to composite data for further processing.
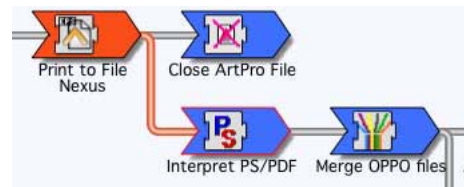
The Print to File activity as indicated in the figure needs the Device Type set to "Nexus" for the connection. (see 8.50. Print to File on page 287)

3.4.5 NexusProcessor and Nexus PDF RIP

In the same way as described above, you can connect Nexus Processor activities and Nexus PDF Rip or Nexus PDF Processor activities, replacing the Print to File activity by an Export PDF activity.

3.4.6 Dependencies

In the previous pages a lot of dependencies have already been illustrated, as well as their practical use. There are actually 3 types of dependencies which can be distinguished in Nexus workflows. Two of these, the memory dependencies and file dependencies have already been described above, the third type of dependency is the Order dependency.

- **Memory Dependency:**

  an activity is memory dependent to another activity when its needs the result in memory from the activity it is memory dependent to perform its processing. To create a memory dependency click and drag from the Memory Dependency Bullet (green) of the first activity to the second. This will make the second activity memory dependent to the first. Memory dependencies are visualized by a green line and the activity to which an activity is memory dependent is highlighted in green.

- **File Dependency:**

  an activity is file dependent to another activity when it needs the result as a file on disk from the activity it is file dependent to perform its processing. To create a file dependency, click and drag from the File Dependency Bullet (orange) of the first activity to the second activity, this will make the second activity file dependent to the first activity. File dependencies are visualized by an orange line and the activity to which an activity is file dependent is highlighted in red.

- **Order Dependency:**

  allows to define the order in which activities need to be processed when different from the normal sequential order as defined in the workflow. To create an order dependency, click and drag from the Order Dependency Bullet (purple) of the first activity to the second. This will make the second activity order dependent to the first activity, e.g. the second activity will only be executed AFTER the completion of the first activity. Order dependencies are visualized by a purple line and the activity to which an activity is order dependent is highlighted in purple.

Dependencies are visualized by their respective colored lines from one activity to another, combined with a highlight color if an activity is selected. (the activity to where a dependency exists is highlighted). The colors used to show dependencies can be set in preferences (see 2.1. Preferences on page 34)

Creating dependencies can sometimes produce unexpected results. When e.g. an activity is file dependent to another, it does not make sense to put in an Order Dependency, a file dependency already implies an order dependency. When the activity needs the saved file from another activity it is obvious that the activity can only start when the first one has completed. When the operator puts in an order dependency anyway the system will interpret this as a file dependency and hence REMOVE the dependency (since dependencies act as a toggle)

- **Removing Dependencies**

  Dependencies work as a toggle. This means that you can remove a dependency by dragging the same dependency again.

  E.g. to remove the File Dependency between activity 1 and 2, click the File Dependency Button on activity 1 and drag to activity 2.

- **Dependency examples:**

  This example consists of a workflow piece containing 2 activities: Make Link and Copy File. The Copy File activity in this example is selected and the Copy File and Make Link activities are connected by a black and an orange line. Equally the Make Link activity is highlighted in red, illustrating the Copy File activity is file dependent to the Make Link activity.
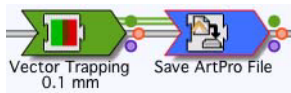
  This example consists of a simple workflow piece containing 2 activities: Vector trapping activity and Save ArtPro file activity. The Save ArtPro File activity in this example is selected and the Trap activities is connected by a black and green line. Equally the Trapping activity is highlighted in green, illustrating the Save ArtPro File activity is memory dependent to the Trapping activity.
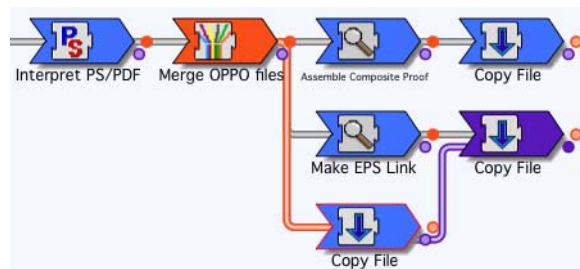
This example consists of a basic RIP workflow containing the following activities:

Interpret, Merge, Composite PS Proof, Copy File, Make Link, Copy File, Copy File.

• Interpret:

interpret PostScript data to separated OPPO data

• Merge:

merge separated OPPO data to composite OPPO data.

• Composite PS Proof:

calculate a composite PS Proof file from the composite OPPO data.

• Copy File:

copy the composite PS proof file to a specified location.

• Make Link:

calculate an EPS link file from the composite OPPO data (connected e.g. file dependent to the Merge activity).

• Copy File:

Copy the EPS link file to a specified location.

• Copy File:

copy the composite OPPO data (connected e.g. file dependent to the Merge activity) to a specified location.

In this example, there is an additional purple line between the Copy File activity, which copies the composite OPPO data, and the Copy File activity that copies the data from the Make Link activity. This is an Order Dependency. The goal of this Order Dependency is to make sure the RIPped OPPO data is always available BEFORE the link file becomes available. The copy file activity that copies the link files will only be executed after the copy file activity that copies the OPPO data is complete. Additionally this copy file activity is highlighted in blue.

3.5. Workflow Templates

Underneath the predefined categories of activities, you can see the Workflow Templates. When opening this category (which has the same name as the Workflow Template folder), the list underneath will contain all subfolders and saved workflows that are found in the *Workflow Templates* Folder, which can be defined in *Preferences* (see 2.1. Preferences on page 34). The Template option can be used to add predefined Workflows into the edited workflow.

All Template Workflows are workflows saved to disk, so a workflow will not be available as template, as long as it isn't saved to disk, into the *Templates* folder or one of its subfolders.

If the *Workflow Template* category is selected, the Workflow edit area (in which the edited workflow is shown) is split in half: the upper part shows the edited workflow, the bottom part gives a preview of the selected template workflow.

- **Subfolders**

  Every subfolder (or alias) will be shown, as long as it contains saved workflows. If no saved workflows are found, the subfolder will not be shown in the list. A subfolder can be in the *Workflow Templates* Folder, or it can be an alias placed inside the *Workflow Templates* Folder. The more subfolders inside the templates folder, the longer it takes Nexus to scan all subfolders. Subfolders in the Templates list can be opened or closed using the triangle in front of the name of the folder. Subfolders show no more than 4 levels deep.

- **Template Workflows**

  When selecting a workflow in the list, the workflow will be shown at the bottom of the editing window. No changes can be made, and no activities can be selected nor parameters be changed. The only change that can be made (by double-clicking any of the activities) is the preview color. When double-clicking any activity of the template workflow, the *color picker* will popup. The selected color will be used for the background of the arrow, and this
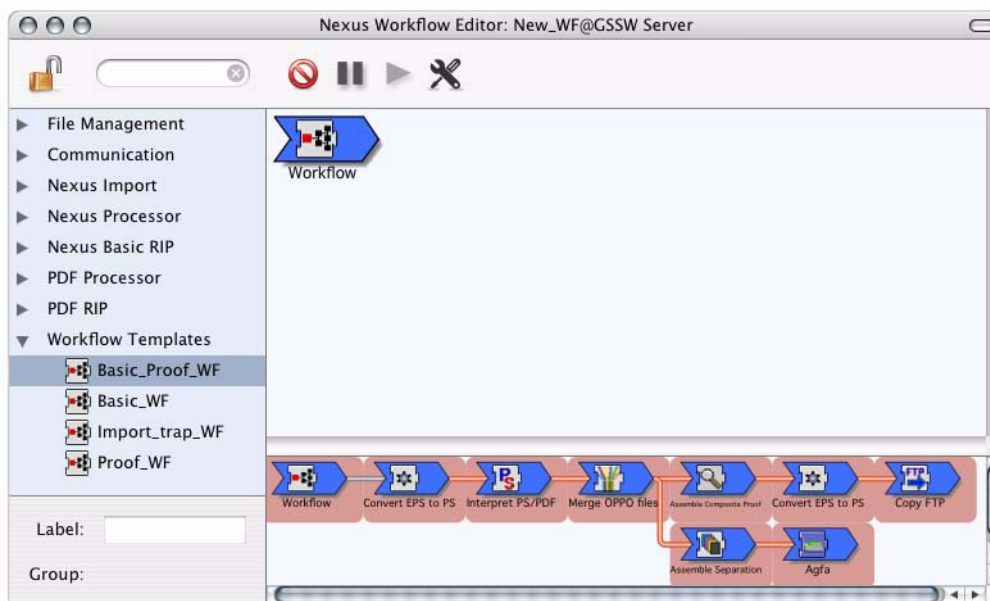
color will remain even after inserting the template workflow into the edited workflow. This makes it easy to see what activities belong to an inserted workflow.

- **Inserting a Template Workflow**

  A *Template workflow* can be inserted in the edited workflow by selecting its name in the list, and drag it in the editing window, to the place where it should be inserted. When double-clicking a template workflow, it will be inserted after the last selected *Workflow* activity.

  If a color has been assigned to the template workflow activities, all activities will be represented with the selected color in the background of the arrow.

- **Group name**

  If, in the *Workflow Editor*, an activity is selected that originates from a Template workflow that was entered in the edited workflow, the name of the Template workflow will be shown as group name. This Group can be changed using the "Set Group" function in the contextual menu of the Workflow Window. The Group can be removed by control-clicking an activity, hold the shift key and click "Clear Group".

3.6. File Naming Template

Throughout Nexus, when a file name or a text string needs to be defined, the File Naming Template can be used.

The File Naming Template allows to compose the file name (for saving or selecting) or text string, based on building blocks or "Keys"
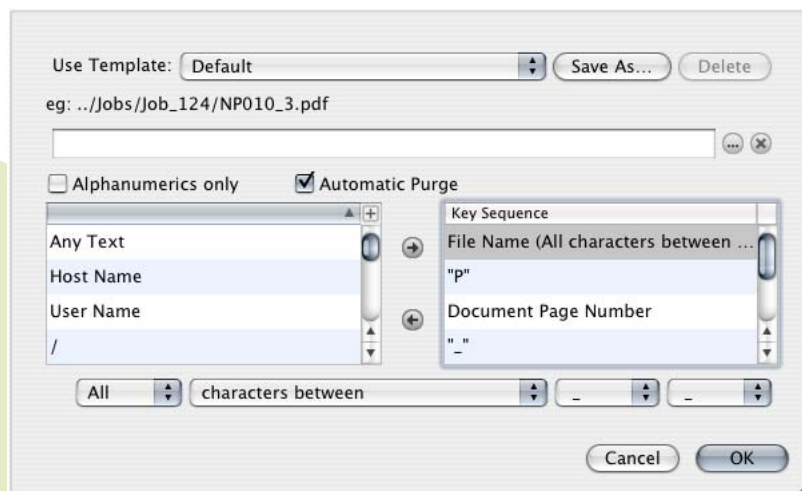
- **User Template**

  To save a predefined template for later use, one can define a template and click the Save button at the top of the window. This will open a window where a template name can be specified and saved.
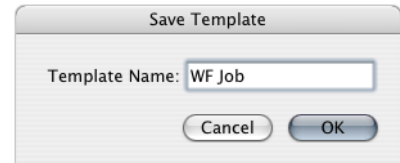
  When the template name is saved, it will become available for later use in the Use Template pop-up menu at the top of the window. Please note that this template is only available for the NexusManager client where it has been defined.

  If a User Template is selected, the Delete button can be used to remove it.

- **Path Name / Browse button**

  If the full path name of the folder where the output file from the previous activity needs to be copied to is known, it may be entered directly into the text field, e.g. E:/Nexus_Mac/AP_files/.

  If the full path name of the folder is not known, it may be located by first pressing the Browse button, which will open the Nexus Select Remote Folder window. The same facility is used elsewhere in NexusManager whenever a file or folder on a local or mounted drive needs to be located. The x button allows to remove the selected path.

- **Automatic Purge**

  The File Naming Template can be used to define where and how output files are saved. The Automatic Purge option allows to define if these files should be deleted when the job is purged.
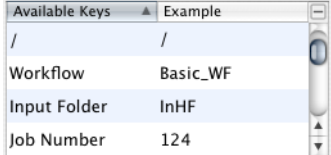
  Automatic Purge enabled (default): Nexus automatically removes the files that have been created by a workflow activity when the job has successfully finished and the purge time has been reached. In that case, a temporary file that has been made by an activity, can only be made permanent using an FTP, Filecopy or Archive activity.

  Automatic Purge disabled: Nexus does not remove the files that have been created by a workflow activity when the job has successfully finished and the purge time has been reached. That means that the job folder stays with these file in it or you should configure the workflow so that the files are not generated in the job folder.

- **Available Keys**

  Two scrollable windows are available, where the left window contains all the template keys which can be added to the File Name. Besides all predefined Keys, this list also contains the User Keywords (see 2.6.7 XPath Expressions on page 47)

  By clicking the + button in the top right corner of the Available Keys list, an additional column will open, showing an example of the selected key. By clicking the - button, this column is closed again. By clicking the shown example, you can change the default which will be used in the example of the selected key sequence.

Available Keys ▲	Example
/	/
Workflow	Basic_WF
Input Folder	InHF
Job Number	124

  Following describes the template items which are available:

  - *Any Text*

  allows to add a specified text string by double-clicking the text in the right part of the dialog.

  - *Host Name*

  adds the host name to the path name, e.g. the host name of the machine Nexus is running on.

  - *User Name*

  adds the User name to the path name

  - */*

  adds a "/" to the path name, so a subfolder will be made.

  - *Workflow*

  adds the workflow name to the path name.

  - Input Monitor Folder

  allows to add the name of the Input Folder. This key will NOT work for files run manually, using the Run File option.

  - *Job Number*

  adds the job identification number to the path name.

  - *Job Name* adds the job name to the path name.

  - *Job Name (no extension)*

  adds the job name without its extension to the path name.

  - *File Name*:

  adds the physical file name to the path.

  - *File Name (no extension)*:

  adds the physical file name without its extension to the path.

  - *File Extension*

  adds the extension of the physical file name to the path.

  - *SelectFile Name*

when the Copy File activity is in a branch where the file being executed is determined by a Select File mechanism, the selected file name will be added to the path name. As a comparison, the File name key item would actually refer to the folder name that has been dropped in the workflow for the Select File mechanism to select a file from.

• *SelectFile Name (no extension)*:

same as above but without the extension

• *SelectFile Extension*:

same as above but only the appropriate extension is retain in composing the resulting name.

• *Page Sequence Number*:

adds the page number to the path name relative to the document, if a document contains three pages, the numbers 1, 2 and 3 will be added respectively, even if the document was printed as pages 3 to 5.

• *Document Page number*:

adds the document page number to the path name, based on the actual page number. If a document was printed from Quark containing pages 3 to 5, the numbers 3, 4 and 5 will be added to the path name. Note that this functionality is only supported for PS files from Quark or PageMaker on both documents being imported by NexusImport and NexusRIP. From other PS documents or PDF documents it may still be possible in some cases that the document page numbers are correctly retrieved but this is not a supported option. When Document Page numbers can not be retrieved from the document, they will be replaced by Page numbers.

• *Separation Name*:

adds the separation name to the path name, e.g. Cyan.

• *Short Separation Name*:

adds the first letter of the separation name the path name, e.g. C. PANTONE colors are abbreviated to P+number.

• *Separation Number*:

adds the separation number to the path name, e.g. "1" when it is the first separation in the file.

• *Original Folder / JDF JobID / JDF PartID*:

adds the Original Folder, JobID or PartID as retrieved from the JDF file.

The Original Folder can also be used if an alias is placed in a hot folder (instead of the actual file).

Note: You can use the ".." key to go one level up in the folder structure. E.g. to save the output file in the "OUT" folder next to the input folder, the File Naming Template should be / <Original Folder> / ".." / "OUT" / [output file name]

- **Key Sequence**

  The Key Sequence list shows what keys will be combined (and in what order), defining the resulting file name.

  To add a template key, select an item from the list at the left hand side and click the right arrow, or drag and drop it on the Key Sequence list. This action will add the selected template key to the list at the right hand side. At the same time, the contents of the Directory field will be used as a base for the template keys to add to. Above the Directory field an example will be displayed which will show the name of the folder the files will be copied to. Obviously, if this folder is not available, it will be created the first time the workflow is executed. Equally, to remove an item from the list at the right, select the template key from the list and click the left arrow button or by using ⌘ - Backspace. The order of the keys can be changed by dragging and dropping.
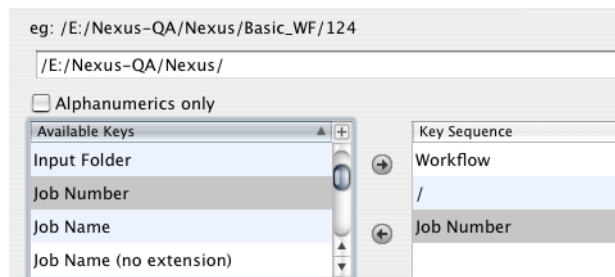
  In the example shown, the base path name is
  /E:/Nexus-QA/Nexus/,

  The Keys added are Workflow / Job number
  Hence the final path name where folder will be copied to is:
  /E:/Nexus-QA/Nexus/Workflow name/Job number
  or as an example: /E:/Nexus-QA/Nexus/Basic_WF/123

- **Characters from a Key**

  If a Key is selected in the Key Sequence, some extra options at the bottom allow to select specific characters out of a string (e.g. the Job Name)
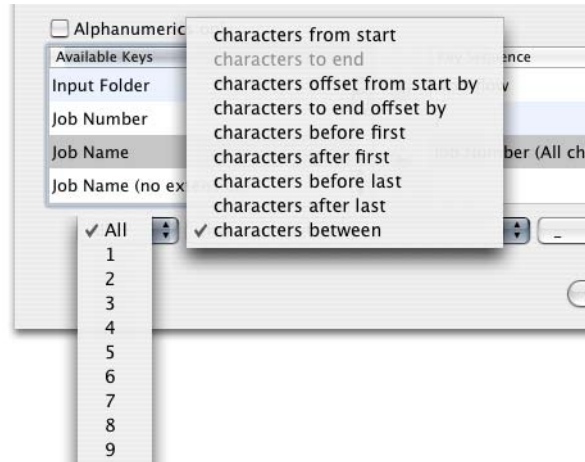
  The first dropdown defines a number of characters or "All"

  The second defines what characters should be selected. The different objects are illustrated by an example. The original (full) Job Name for this, is File0123_ClientABC. In the example, X (the number in the first dropdown) is 6.

  Characters from start: the first X characters. E.g.: File012

  Characters to end: the last X characters. E.g.: entABC

  Characters offset from start by: The offset (e.g. 2) defines how many characters should be skipped. E.g. (offset = 4): 0123_C

  Characters to end offset by: the same as the previous, but to the end. E.g. (offset = 4): _Clien

  Characters before/after first/last: When one of these options is selected, a dropdown appears to select a special character. This allows e.g. to select "all" characters before the first (or last) underscore. In the Example, this would be File0123. Selecting all characters after the first underscore, would give ClientABC

  Characters between (only works with "all"): allows to select all characters in between 2 special characters.

  You can use the Example column to see the result of these operations. See • Available Keys on page 134.

Chapter 4. Running Jobs

4.1. Appletalk Printer

The first way to run a job through Nexus, is using the Appletalk Printer to print a file from a desktop application to Nexus. This can be done when a Printer Monitor (see 2.12. Monitors on page 70) is attached to a Workflow, either by creating an Appletalk Printer workflow, or by manually creating a Printer Monitor for the specific workflow.

4.1.1 Make PPD

When working with Appletalk Printer workflows, a PPD can be generated which contains user definable parameters from the workflow. When used with the selected printer it will be possible to select the workflow parameters from the local workstation when printing through the Printcenter.

In order to determine which workflow parameters will be available to the operator that prints from the local workstation, padlocks are used for each parameter when setting up the activities in a workflow (please refer to the appropriate section in creating workflows). When padlocks for specific parameters are in the unlocked state and a PPD is made, the PPD then contains all the possible settings for that specific parameter of the activity in the workflow.

In the example above, four settings for the Band to PSTI activity will be available to the operator: resolution, polarity, black overprint setting, and LW to CT ratio.

If all jobs that are to run on a workflow should be processed using identical activity parameters, these parameters should be fixed in the workflow by setting the adjacent padlock to a locked state.
If it is desirable to be able to print jobs to a workflow using variable parameters (e.g. output resolution, trap width) these parameters must first be unlocked in the workflow, by clicking on the appropriate padlocks. They will then change to an unlocked state. Clicking them again will relock them. Unlocked parameters are available in the PPD and thus the settings of that activity can be overridden by the operator who prints from the local workstation.

To make a PPD simply select the workflow in the Workflows window and press the Make PPD button. The Save file window then enables the PPD file to be given a suitable name and to be stored in an appropriate folder. By default, the name of the PPD corresponds to the name of the workflow, but if several variations of a PPD are required they can be given different names.

4.1.2 Printing From Mac OS X

• **Saving the PPD**

When running in OS X, there is no particular place to put the PPD's. Save the PPD in a place where you can easily find it when adding the printer. Once the printer is added, the PPD is no longer needed, as OS X copies all info into the PrintCenter settings.

• **Setting up the Printer**

In OS X, adding a printer can be done in the Print dialog of any application. You can also open the System Preferences - Print & Fax, and add a printer there, by clicking the + button.

If a printer has been set up for the workflow (see appropriate section in Monitors) and it is necessary to print from the Apple Macintosh, the workflow will show as a PostScript Printer in the list of available printers.
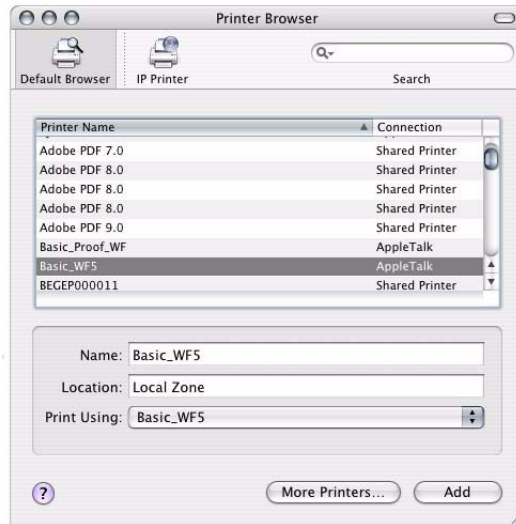
By selecting the Printer, OS X will search for the PPD. By clicking Select Manually, you can open the earlier created PPD file for the given WorkFlow.

Once selected, the information contained in the PPD is copied by OS X into the Print Center Printer List, so the original PPD is no longer needed. However, it can be useful to keep the PPD's for archiving purposes.

• **Printing from an Application**

When printing from a Macintosh application, the OS X Print dialog opens. Below the Printer selection and Presets popup, a popup menu is shown, where the Printer Features can be found. When selecting Printer Features, all PPD options, separated into

groups, can be set. All unlocked items in a workflow are stored together in a separate group, which appear as one or more groups in this popup.
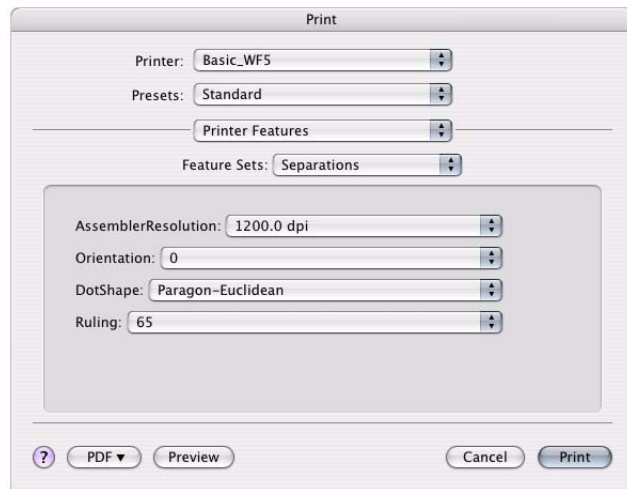
In the example, the unlocked parameters of the Make Separation activity are grouped together in the popup as a Separations group containing 4 selections with the appropriate pop-ups.

All Nexus PPDs equally contain a Color Mode Group to select whether composite or separated PostScript is being printed. The PPD will also contain a maximum page size definition, which is based on the values defined in the Device Contexts file for the device selected in the Assembler Separations activity. This is designed to prevent attempts to output large pages on small format output devices. However it will not be sufficient to cope with the situation where narrower than maximum width media is being used.

4.1.3 Printing From PC

More and more Prepress environments use the PC as workstation for DTP applications. To be able to print direct from within the DTP application to a Nexus Workflow, it is recommended to install and configure the Adobe® PS Driver. This driver is downloadable from the Adobe® Website at http://www.adobe.com. and enables you to print from any application in a Windows environment to a PostScript printer. The setup is very similar to the Windows built-in Add Printer Wizard and is as follows:

1.The PPD of the workflows, generated by NexusManager can be copied to the PC to be assigned to the newly setup printer. To overcome the connectivity problem between the Windows workstation and the Mac, this can be done by copying the PPDs onto a PC-formatted CD. Alternatively, the PPDs can first be copied to the Mac shared folder of the Nexus RIP server, and from there copied to the PC.

2. Double click the Adobe® PS driver Setup.exe file and after accepting the License agreements, the following dialog will appear:

- *How is your Printer connected to your computer?*
- Select the second option: connected to your network.
- *Type the network path or queue name of your printer or browse to view the available network printers?*
  Use the browse button to select the workflow in the zone where the Nexus RIP is installed.
- *Select the model of your printer?*
- Browse to select the PPD copied in step 1
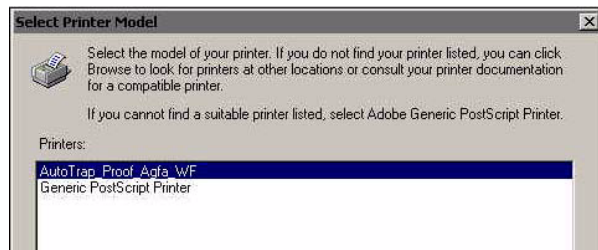
3. In the following dialog boxes you can assign a new name to your printer. Also answer on the appropriate questions that the printer should not be shared, you don't want to use it as a default printer and you don't need a test page.

4. Once this has done, click Install and the Adobe® driver files will be installed. Next you will be asked to optionally configure the printer and to read the readme file on PS printers.

5. Last step is to hit the Finish button which will exit the script. Although the option to restart is given, this is not necessary.

To view the newly created Adobe® PS printer, browse to Start -> Settings -> Printers. You will see that the Printer queue for the workflow has been added to the Printer list, and will now be accessible from within the print menu of any (DTP) application.
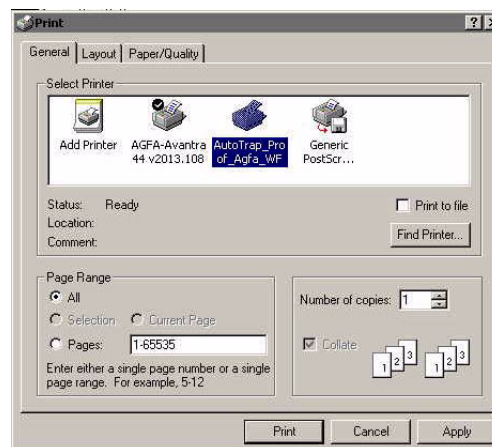
In the Layout Tab, under Advanced Options, the printer features may be found which contain all the options in the PPD file as they have been included by unlocking the padlocks in NexusManager.

The necessary settings can be done here before printing to the Nexus server. The PPD options will be available in pop-ups as show.
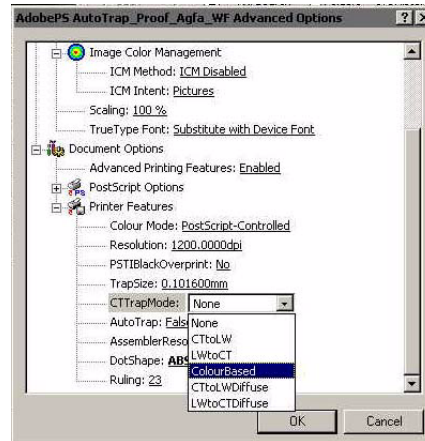
4.1.4 Define Screening using PPDs

As with many parameters in NexusRIP, padlocks may be unlocked in the Screening window, so that they will be included as a PPD option. Available options today are dot shape, ruling and scale. It is very common to unlock the resolution popup in the assembler parameters as well. Unlocking all these options results in a PPD which contains assembler options as shown here. It is of course possible to include only some options in the PPD, and lock others in the workflow.
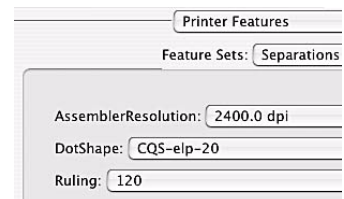
- **resolution**

  The available resolutions in the popup match the output device resolutions, but a possibility to do a custom entry is not supported through PPDs.

- **dot shape**

  In the PPD options, the Dot Shape can be chosen, based on the screen family that was defined in the Assembler.

- **ruling**

  The list of available rulings contains strictly nominal rulings. The difference between nominal and actual values has been described earlier. Keep in mind that these values will not change

when selecting a different resolution or angle family, as opposed to the values in the screening window in NexusManager. The pop-ups in these PPDs are not linked.

The nominal values in the ruling popup will be mapped to the nearest matching value. If we print e.g. a grayscale job and we select through the PPD CQS-round @ 85 lpi and 1200dpi, the resulting output will be a CQS round dot @ 82,97 lpi, the angle will be 103,76º.

The exact values may be verified by pressing the Nexus Print button after opening the Job window. The description is somewhat cryptic.

When we print the same job, selecting a rsr dot shape @ 85 lpi and 2400dpi, the result will be a PCC nominal Euclidean dot @ 89lpi.

If there is no possibility to match the screen ruling specified in the PPD, e.g. by selecting a very high ruling at a low resolution, the frequency will jump to the default value. Therefore it may be advised to manually edit the PPD in a text editor and remove the frequency values which you do not intent to use. Editing the PPD is preferably done by a qualified engineer to avoid future inconsistencies.

4.2. Hot folder

A hot folder is a periodically monitored folder on the Nexus Server. Files and jobs can be processed trough a certain workflow, simply by dropping the file or folder into the hot folder connected to the Workflow. A hot folder is set by creating a Hot folder workflow or by creating a Hot folder Monitor for the specific workflow (see 2.12.8 Hot Folder on page 72).

4.2.1 Submitting Files or Folders

In a hot folder, you can either submit single files or folders. If the Workflow is set up starting with a Select File activity, folders containing multiple files can be submitted. If not, submitting a folder would cause all files to be processed individually through the attached workflow.

When copying a file or a folder in the Hot Folder, Nexus will wait until the file is completely copied. Once this is done, the file will be moved into the spooler folder inside the Hot Folder. This is to avoid that the job gets redetected. It is from the same Spooler folder that a job can be retried.

4.2.2 PDF Workflow Option

PDF Workflow Option is a service available in OS X, and affects the print dialog of every application. It can be found in the contextual menu for a hot folder (in Monitor window) if the hot folder is accessible from the client machine.

When the PDF Workflow Services are used, the "Save as PDF" button, usually at the bottom of the Print dialog, is replaced by a PDF button.When clicking this button, a menu is shown, containing the original "Save as PDF" option, as well as every hot folder that has the PDF Workflow Option. This allows to save the PDF directly in the hot folder, without having to search for it in the Browse dialog.

The Create PDF Workflow Option adds this option to the selected hot folder, making it available in the PDF menu in the Print dialog

4.3. Run File

The Run File command will allow the user to manually select a file to be processed through a workflow.

Running a file can be done in different ways: from the File menu, using the shortcut ⌘ - R, from the contextual menu in the Job Window or the Workflow window, or by dragging and dropping a file on the workflow in the workflow list, in the job list, on the workflow item in the Workflow Editor or on the Hot Folder in the Monitor list.

4.3.1 Workflow

If the Run File command is used while a Workflow is selected, the file will be run through this selected Workflow. In the other case, the Workflow to be used can be selected from the Workflow list.

4.3.2 Times

The Times popup allows to submit a selected file more than once to the selected workflow.

4.3.3 File selection

If a file is dropped on a workflow, the path of the file is entered automatically.

If the full path name of the file that needs to be processed is known, it may be entered directly into the field, e.g. E:/Nexus_Mac/Catalog page 18

The History button allows to select earlier selected files or folders.

If the full path name of the file to be run is not known, the file may be located by first pressing the Browse for File button, which opens the Select Remote File window.

To run a folder through the Workflow, use the Browse for Folder button. The same Select Remote File window will open.

- **Select Remote File**
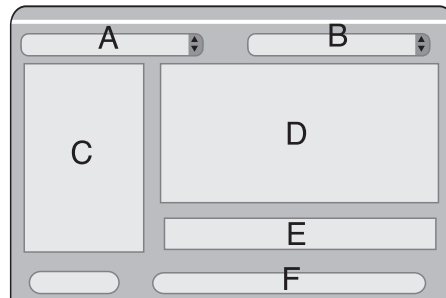
- *A: Current folder*

  The popup at the top left corner shows the currently selected folder. It allows a higher level directory to be selected. Ultimately it will show "Computer" allowing an alternative "drive" to be selected. Note that Computer refers to the Nexus system where Nexus is running as opposed to the Macintosh where Nexus-Manager is running, e.g. only files can be selected which are accessible from the Nexus server. If a file is resident on a local Macintosh it needs to be copied to the Nexus server first.

- *B: Recent Places*

  The "Recent Places" dropdown contains a number of recently accessed folders.

- *C: Favorites*

  The list on the left allows to easily access your "Favorites" folders. Folders can be added you your favorites by simply dragging and dropping from the browse window on the right. Favorites can be removed by selecting and using "Delete" from the Edit menu, or the shortcut ⌘ - Backspace

- *D: Current Folder Contents*

  The browse window shows the contents of a currently selected folder in a tree view. You can use ⌘ - arrow up and down to go up and down in the folder hierarchy. You can use the left and right arrow keys to open and close a folder.

- *E: Filter*

  The Filter allows to show or hide files, based on their file name.

- *F: Select / Open*

  Use the Select / Open button to open the selected subfolder, or to select the current file (or folder).

4.3.4 File Info

The Info button in the Run File dialog allows to retrieve all info from the selected file. The Server needs to be mounted to retrieve this info. What info is available, depends on the selected file type.

- **General Info**

  contains the File Info, extracted from the file header. The info available depends of the type of file: a PDF or ArtPro file will contain more info than e.g. a TIFF file.

- **Boxes**

  If available, the different boxes in the file are shown.

- **Bar Codes**

  If available (i.e. if the selected file is an ArtPro file), the list of all Bar codes used in the file will be shown. Both the bar code number and the bar code type is shown.

- **Fonts**

  If available, the list of all fonts used in the file will be shown.

- **Separations**

  If available, the separations used in the file can be shown. Next to the name of the separation, a small color square is shown, indicating the color of the separation. If available, the screening angle and Coverage percentage is shown next to every color square.

- **Certified PDF State**

  For PDF documents, the info will show the Certified PDF state and the PDF Profile used.

- **Properties**

  For PDF files, the XMP properties can be shown in the Info.

4.3.5 Run File List

It is possible to select more than one file or folder to be run through the workflow (e.g. CF2 + ArtPro file)

Using the + and - buttons you can add and remove files from the Run File List, using the normal Browse buttons. Drag and drop is also supported. If in the Browse window multiple files are selected, they will be represented by different lines in the Run File List.

4.3.6 Group Files

If the Group Files option is on, the selected jobs will be sent to the same workflow, as one entry (e.g. an ArtPro file and its CF2 file). If the Group Files option is off, all files will be send individually, one after the other (e.g. different ArtPro files to be run through the same workflow).

4.3.7 NeXML Ticket

If a NeXML Template folder is defined in the preferences, a NeXML file can be included when running a file. See 2.1. Preferences, NeXML Template Folder on page 37.

The NeXML file needs to be selected in the dropdown list, which will contain all NeXML files in the NeXML Template folder. Using the Browse option, you can select a NeXML file outside of the NeXML Template folder.

If in the Workflow properties a restrictive list of NeXML files is defined, only the NeXML files from that list will be available from the dropdown menu. See 2.11.2 Workflow Properties on page 64.

The option "Edit before submitting (on the fly)" allows to change the values of the selected NeXML file before running the file through the workflow. If the option is on, clicking ok will open the NeXML editor.

Note:

Changes made to the NeXML "on the fly" will only affect the file being processed. Changes are not saved in the NeXML file.

For more info on how to use XML, see the TechNote on NeXML which can be found on the Download Center.

4.3.8 User Template Keywords

If any User Template Keywords are defined, you can change the User Template Keywords for the file being processed. For more information on User Template Keywords, see Appendix 1 : User Keywords on page 444.

4.3.9 MIS Job Identification

You can apply an MIS Job Identification on the file you run, if MIS Integration is enabled in the Preferences. For more information on MIS Integration, see Appendix 2 : MIS Integration on page 446.

4.4. Sending files from ArtPro

4.4.1 The Print window

In the ArtPro Print menu, a separate setting is available for Nexus. When printing from ArtPro to a Nexus workflow, Nexus has to be selected from the Device Type popup in ArtPro. This is a separat-

ed PS output with some predefined settings for Nexus. ArtPro offers control on the separations to be outputted, registration marks, distortion if required,... For full details on how to print from ArtPro, we refer to the ArtPro manual.
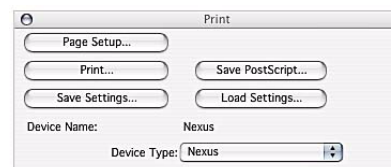
Selecting Nexus as device type, activates the Nexus include option which will make sure that special comments from ArtPro will be transferred to NexusRIP. Printing with these options to another, third party RIP may result in a failure because the included comments are not recognized.

PostScript files printed through ArtPro will by default carry the extension .separated. To avoid extremely long job names in Nexus-Manager, a shorter file extension may be entered in the File Extension text field.

4.4.2 Workflow based screening

If no object based screening will be used, there is not always the need to define the parameters in ArtPro itself. If limited control from the operators standpoint is sufficient, it is advised to define the screening in the workflow through NexusManager.

Basically, the setup is not different then for any other application that may be used. In the screening window of the workflow, you set screening to "PPD workflow options", which will enable all Nexus screening options. Make the selections that will be used in this workflow. If more control and flexibility is needed, this may be done through unlocking some padlocks, and including the available choices in the PPD to be created.

Once this is done, the correct printer must be selected through the chooser or printcenter, and a PPD assigned. When the job is printed and no settings have been included in the PPD for the Assembler, the separations will be screened according to the settings in the screening dialog box.

If padlocks have been opened, and these parameters been included in the PPD, they may be selected in the Assemblers EPS option. The settings done here will overrule the ones in the workflow only when the correct padlocks are open.

PPDs are only supported through the Printer Setup, and not from within ArtPro itself. Therefore, it is not common to use PPDs, modified by screening PPD. Instead, for this level of control real Nexus Screening could be applied, which is discussed in the next paragraph.

In ArtPro, no object based screening parameters should be set, since they are defined in the workflow or PPD. Even if some screening sets have been included accidentally, they will be overruled in NexusRIP. The screening popup remains blank in ArtPro, which means that the default screening parameters from the Target device will be applied.

- **calibration**

  In ArtPro, output can be calibrated using a Dot Gain Compensation curve, or the calibration can be done in NexusRIP by selecting a cal file in the workflow setup. The latter is recommended, because it offers better control and maintains the gray levels. A Dot Gain Curve and a Nexus Calibration file can be combined, but the result could be somewhat unpredictable.

4.4.3 Apply Screening from within ArtPro

There are three possible ways to control the screening from within ArtPro: PostScript Screening, Nexus Screening and Nexus Extended. All types allow you to include screening settings on a per object base in the printed PS file, in such a way that NexusRIP will be able to apply the requested values. When exporting PDF from ArtPro, PostScript Screening and Nexus Extended Screening is included in the PDF file.

In order to force NexusRIP to look in the PS / PDF file for screening parameters and execute them, the Screening should be set to Full Control in PostScript. Using the other Screening options (see Assembler) it is possible to define only the ruling in ArtPro, and use the Workflow default values (defined in Nexus) for all other settings.

By default, the Screening window in ArtPro shows a blank value in the Screen popup. If we select the Default value from this popup, the Screening window on the right shows up, with the PostScript tab selected. ArtPro allows you to create different Screen sets, which may then be applied on a per object base. Different tools such as Modify screen and select by screen which allow you to assign a screen set to some or all objects in an ArtPro job are explained in the ArtPro Manual. Once the different Screen sets are defined, they may be selected in the Paint Style in ArtPro and applied to the selected objects.

- **PostScript**
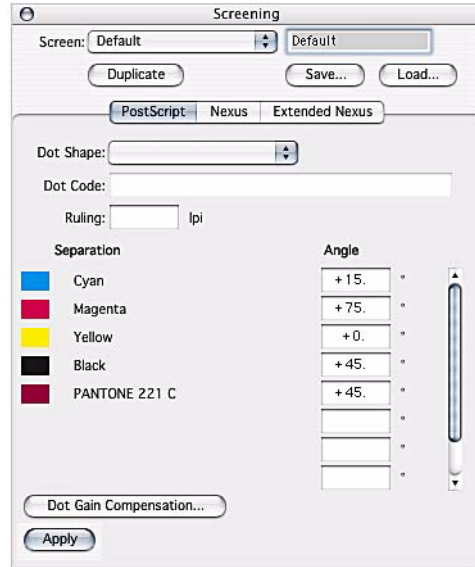
The PostScript screening allows you to specify any frequency and angle per separation in combination with the available dot shapes. A scrollable list of the used separations is available as well.

Depending on the dot shape selected, NexusRIP will react differently

- *PostScript dot shapes*

  The top half of the dot shape popup shows us the standard PostScript dots available in ArtPro such as circular, elliptical, diamond,... Every single of these dots also has a Powerlock version. For more details on Powerlock, we refer to the ArtPro Manual.

  These PostScript dot shapes are based on generic PS code, and allow you to generate screened output on any standard PostScript RIP, using the specified line screen and angle values. NexusRIP will apply these dots as well, if they are specified. Almost every possible combination of angles and frequencies is allowed, but it is commonly known that these PostScript dots are not offering a very high, moiré free result for difficult jobs.

- *Nexus dot shapes*

  The second half of the dot shape popup, shows us Nexus only dot shapes. All available dot shapes on NexusRIP are present in this popup. You can select a certain dot shape here, and then fill in a frequency and angle for the separations.

  As explained earlier in this chapter, NexusRIP makes, depending on the family, use of screen tiles or a screens database to generate the screened TIFF files. Therefore not all possible combina-

tions are possible. NexusRIP will read in the nominal values that have been entered in this dialog box for frequency and angles, and will try to match these as close as possible to existing values. To achieve this mapping, a Type 95 halftone dictionary is used.

If for example we select a CQS rsr dot shape at a line screen of 110 lpi and an angle for black at 35°, the resulting screening will be the CQS euclidean dot at 108,268 lpi, and an angle of 37,7°. These are the closest possible values.

- *Esko dot shapes*

  Esko dot shapes can be found at the bottom of the dropdown. In case these dot shapes are set up on the Nexus, these dot shapes will be used. For more information on setting up Esko dot shapes, see Chapter 11. Screening & Calibration on page 403.

- *Dot Code*

  The Dot Code field allows to define custom PostScript functions. The Dot Code field can also be used to enter the name of the dot shape. If it corresponds to the name of a dot configured in Nexus, this dot shape will be applied in the RIP.

- **calibration**

  Both for real PostScript dot shapes as for Nexus dots, selected through Type 95, calibration can be done through the Dotgain Compensation curves in ArtPro. Alternatively, a calibration file can be selected in the workflow itself. Please take note, that no object based calibration is possible. If this is requested, real Nexus screening must be used as explained in the next paragraph.

- **Nexus**

  The Nexus screening should be used when using FastCalibrator calibration files (Nexus 7.0 and 7.5), or when driving a Nexus 7.0 or 7.5. In all other situation, Nexus Extended Screening should be used.

- **Nexus Extended**
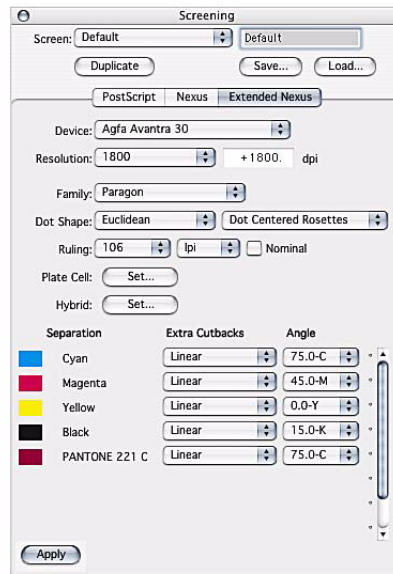
The Nexus Extended tab provides the user with the same options as the screening in Nexus RIP (see 9.4. Assemble Separation on page 306.

Not all the options provided in Nexus are present in ArtPro. In general, calibration can't be set up in ArtPro.

Most options are the same as in the Nexus Make Separation activity: Device, Resolution, Dot Shape, Ruling.

A brief overview of the options:

- a popup to control the generation of Rosettes (dot centred or hole centred)

- a Nominal option which enables the user to display the screen rulings as nominal values

- Noise and Size are hidden/shown based on the selected screening.

- the platecell settings can be accessed through the Set Plate-Cell… button. The name of this button changes to Change Plate-Cell… if there is a platecell setting already present.

- the hybrid settings can be accessed through the Set Hybrid… button. The name of this button similarly changes to Change Hybrid… if there's already a hybrid setting defined. It's disabled if either the FM screening or a CQS screening with a noise parameter other than zero is selected

- The Extra Cutback dropdown contains "Linear", and all Flexo-Sync and LithoSync curves. The dropdown will also contain all names defined in the Extra Cutback Curves section in the Preferences (see below). When sending this info to Nexus, only the text

string with the names of the curves will be taken. In the Assembler, Nexus will search in the Extra Cutbacks folder for a file with the exact name as that text string. see also • Extra Cutbacks on page 426

- A major difference between the Nexus and the ArtPro interface is the setup for spot colors. Nexus provides only one control for all spot colors, ArtPro provides separate controls for each spot color. This is of course due to the fact that in an ArtPro file, the spot colors are known, whereas a Nexus workflow is setup for files containing different spot colors.

• Extra Cutback Curves

As explained above, you can set Extra Cutback Curves in the Preferences in ArtPro, in the General Tab, using the Extra Cutback Curves button.

In the Extra Cutback Curves, you see a list of the already defined Extra Cutback Curves. You can add a curve by clicking the Add button, and browse to the Curve you want to add. By clicking the Add Folder button, you can select a folder, and all the curves in that folder will be added. All curves in subfolders will be added as well, so do not select a folder (or HD) containing hundreds of curves!

By selecting a curve in the list, and clicking the "Delete" button you can remove a curve from the list. By clicking the Delete All button, all curves will be removed from the list.

When changing the Extra Cutback Curves list while the Screen dialog is open will not change the dropdown menu immediately. Just close the Screen Dialog and open it again to see the Curves in the Dropdown.

The text file containing the names of the Extra Cutback Curves is saved in the System Preferences folder of ArtPro.

4.4.4 Nexus Parameters

The Nexus Parameters are settings that can be included in the file when sending it to a Nexus Workflow system. The first tab, "activities", can be used to overwrite settings made in the Nexus Processor activities.

The XML Template tab allows to select an XML file and embed it in the ArtPro file.

- **Activities**
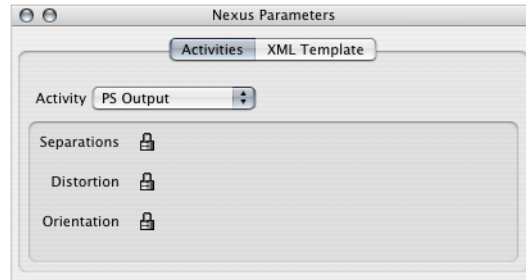
For PS Output, PDF Export and Gravure Tiff, separations can be locked or unlocked. When unlocked, the Separation setup, defined in the Print dialog, will be overwriting the Separation setup in the workflow. For PS Output and PDF Export, the Distortion and Orientation parameters can also be unlocked.
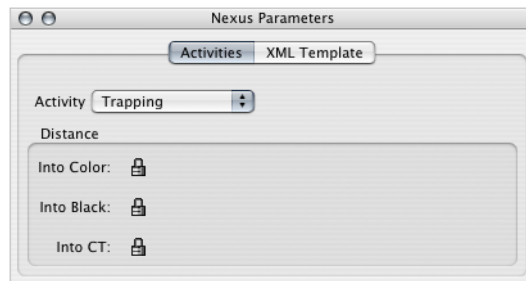
For the Trapping activity, the Trapping distance for into color, into black and into CT as provided in the workflow, can be overwritten by unlocking the padlock and entering the values in the Automatic Trapping dialog.

- **XML Template**
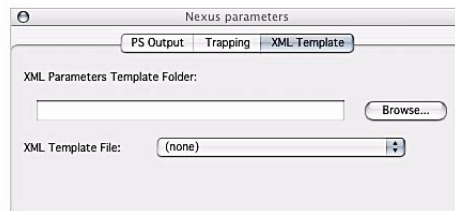
This option allows to include an XML ticket into the ArtPro file, which then can be used when opening the ArtPro file in Nexus. The XML file contains options and settings on how the file should be processed in Nexus. For more info: see the Nexus XML documentation.

The browse button allows to select the XML folder. The location of this folder is saved in the Preferences, and is independent of the flavour.

The drop down will show all XML files in the selected folder, and allows to choose a specific XML file.

4.4.5 ArtPro XML Jobtickets

When printing from ArtPro to Nexus-RIP, jobticket information can be embedded in the PS file. In the more print settings, the write Job Ticket option must be enabled. When doing this, the jobticket information will be stored as XML tags.

When running this PS file through a Page workflow, the jobticket will be read and copied into the EPS linkfile. When further using this link file with one of the Step and Repeat solutions in ArtPro, the jobticket information can be viewed through the paint style dialog.

As shown above, typical jobtickets contain information on size, distortion, separations and screening. This information is extremely useful for the Powerstepper or Powerlayout operator who does not always has the one-up details.
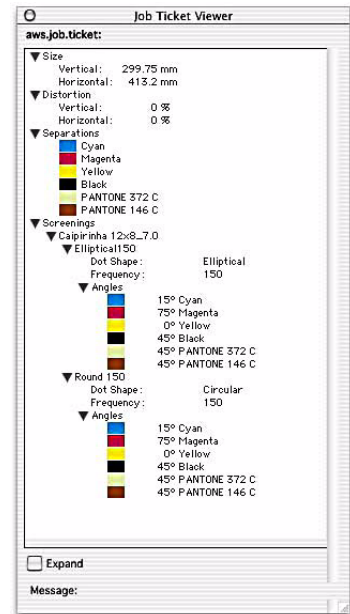
4.4.6 Support for page boxes

The page boxes defined in ArtPro will be recognized by NexusRip, and the definitions will be stored in the Link files created through Page workflows.

These boxes will highly improve the automated positioning of link files, especially in the case of non-symmetrical bleed. When placing link files or stepping them in ArtPro, the Page box to be used can then be selected.

4.4.7 Opaque colors

ArtPro has the facility to work with opaque and/or transparent inks which is highly important in a packaging environment. When printing from ArtPro to NexusRip, these opaque inks will be recognized and simulated on proof.

No special settings need to be done in Nexus.

Chapter 5. File Management Activities

The activities which are found under file management are valid for any of the Nexus main modules: NexusImport, NexusProcessor, NexusRIP and Nexus PDF Processor. They contain specific functions for handling files in a workflow, on input, as well as on output.

5.1. Select File

Nexus is capable not only of working with hot folders that can accept files, but equally with hot folders which can accept folders. When a folder is submitted to a hot folder, this activity will determine which file(s) from the folder will be selected for processing. It can also be used to filter on a list of files which files should be used as input to the following activity. The Select File contains several items for selecting a file for further processing.

5.1.1 Select Options

The Select options show the criteria used. A line can be added using the + button, or removed using the - button. When a criteria is selected, its settings are shown in the Select Item Options. The available settings depend on the Select mode (By Name, By File Type,... see below).

- **All files**

  This option will automatically select all the files in the folder, regardless of name, type, or index. This can be especially useful when the system needs to perform the same type of action on all the files in a folder. This function can equally be used in combination with other criteria defined. To achieve this, click on an item already displayed in the item list, and with the item active, click on the All Files option. This combination will select all files with that specific item criteria from the folder for processing, either looped (re-executing the workflow depending on this Select File mechanism for every file selected) or together (see Group Files).

5.1.2 Select By Name

- **whose name:**

  Based on naming of the file, the system will select a file. The parameters are: "is anything", "starts with", "ends with", "contains", "does not contain", "does not start with" and "does not end with".

The Edit Template button allows to use the File Naming Template (see 3.6. File Naming Template on page 132). It's also possible to use Regular Expressions.

- **Position from 0 to 500**

  The *Position from... to...* fields work in combination with the *Whose name contains...* option. Using the position fields, you can point out what character positions of the file name will be checked. When setting *Whose name contains* "APR" *from position 2 to 4*, Nexus searches for files who has APR on character position 2 to 4. As the first character is position 0, Nexus will check the 3rd, 4th and 5th character.

5.1.3 Select By File type

- **whose type**

  Based on the file type the system will select a file, selection parameters are: "is" or "is not" (only for Nexus on OS X). This file type is a four character code.

5.1.4 Select By Document type

- **File type**

  You can use this to select an ArtPro, PDF or PS file which matches the other criteria.

- **Number of Separations**

  The number of separations can be set to Equals, More than or Less than.

- **Separation name**

  This allows to select files based on the separation names in the file. You can select files if All, Any or None of the separations match the entered string.

- **Number of Pages**

  The number of pages can be set to Equals, More than or Less than.

- **Page Box**

  The selection can be set for the selected page box to be within the entered values.

- **Orientation**

  The orientation criteria can be set to All, Portrait or Landscape.

5.1.5 Select By File size

This option allows to select a file based on its file size: equal, less or more than the entered value, either in Kb, Mb or Gb.

5.1.6 Select By Range

- **With Range**

  Depending on the index number the system will select the nth file, e.g. when the number in the field is set from 1 to 5, the system will select the first 5 files in the folder.

  However, if the "Group Files" option is on, setting the Range from 1 to 5 will send the first 5 files grouped, then the next 5 files, etc.

5.1.7 Select Fixed File

- **Fixed File**

  If the *Fixed File* option is checked, the file to be selected will be independent of the job or folder submitted. Next to the   option, a browse button is available, to select the file to be selected. If a file is selected, it will be shown by name and path next to this Browse button. It is also possible to enter the files name and path manually in the input field.

  The Fixed File can equally be used to select a fixed folder.

  The File Naming Template can be used (see 3.6. File Naming Template on page 132).

- **Condition "If"**

  The condition specifications can be used to select a fixed file based on a template expanded with file or workflow properties, e.g. to select external settings files based on the input file (e.g. trapping setting file, CFF2 file,...). By adding multiple lines, each with their own condition, it is e.g. possible to use "Regmark1" for input files with a file name ending by 1, use "Regmark2" for files with a name ending by 2, etc. Wildcards can be used, e.g. in this case to select all others.

5.1.8 General Settings

- **Group Files**

  This option determines when the selected files need to be used as a group or treated independently. The Item window can contain multiple items, e.g. multiple selections. When Group Files is not checked, the system will select the respective files sequentially and loop through the necessary processing for each selection. As in the previous workflow example, the system will import and trap each file sequentially which is selected from the folder. When Group Files is checked, the system will combine the respective files for the next activity, e.g. the Nested Step and Repeat which actually needs 2 files for input, a CF2 file and a graphics file.

  To add a selection item to the window, click an appropriate option, (whose name, whose type, with index) and click the Add button.

  To modify a selection item in the window, click on the selection item, modify the appropriate parameters and click "Enter"

To remove a selection item from the window, click on the selection item, and click the Remove button.

- **Fail if nothing selected**

  If this option is switched on, the workflow will generate an error and stop, if no file can be found in the submitted folder matching the criteria. Otherwise, the activity and all activities after it, will be abandoned.

- **Search Recursive**

  If Search Recursive is checked, Nexus will not only search the folder, but also the subfolders.

- **Select Folders**

  If the "Select Folders" option is off, folders will be excluded for the Select File activity. If the option is on, the result of the Select File activity can contain a folder.

  This can be used e.g. with a first Select File to select a folder, and a second Select File to select a file from this folder.

- **Analyze File**

  If the "Analyze File" option is on, the separations list for every individual page will be retrieved from the ArtPro, PS, PDF or JDF file. This information can then be seen in the Job Edit window, in the "Separations" panel.

  This information can also be used to setup separations in the PDF Workflow and Importing activity. See also 2.10.5 Analyze File on page 62.

- **Match All**

  If Match All is switched on, only files matching all criteria will be selected.

Note: The Select File activity is not only used for NexusImport and Nexus-Processor workflows. but in some cases can also be used for NexusRIP workflows.

As an example, one could think of a workflow where TIFF/IT files are available in a folder, and the Select File mechanism is used to automatically select all the .FP files and feed them to a TIFF/IT_to_PSTI activity.

5.2. Copy File

This activity will copy the output file of the activity it is connected to a predefined location.

This activity typically has a file dependency to the activity it is connected to.

Double clicking the Copy file activity opens the Copy File dialog. This dialog contains a button to set the File Copy template, and a server system popup.

5.2.1 Server system

In order to maintain the preview and other additional file information, in Mac platform saved in the resource fork, on other file systems such as Samba or Helios servers, this additional information should be saved in specific data folders. Using *Samba* or *Helios* will create this additional information according to the standards for these servers.

When *Default* is selected, the file system used of the platform on which the Nexus software is running, will be used. With No Resource Copy, no resource fork info is copied.

5.2.2 Edit Copy Template

The Edit Copy Template opens the File Naming Template (3.6. File Naming Template on page 132) to define the copied file name.

5.3. Select Page

Only useful in front of the Importing Activity of NexusImport, or in a PDF Workflow, this activity will determine which pages from the document will be selected for processing.

- **Select Page(s)**

  The user can define to select All Pages from the document, or a predefined page range, each time combined with the choice of selecting Even Pages, Odd Pages, or both.

  Multiple Page Ranges can be defined by clicking the + button. A page range can be removed using the - button.

- **Reverse Order**

  Reverse Order allows to select the pages starting from the last.

- **Analyze File**

  If the "Analyze File" option is on, the separations list will be re-trieved from the ArtPro, PS or PDF file. This information can then be seen in the Job Edit window, in the Separations panel. The information can also be used to set up separations in a PDF Work-flow or in the Importing activity. See also 2.10.5 Analyze File on page 62.

- **Skip Pages**

  The Skip Pages option allows to start at a certain page, skipping the first pages, based on the Number of Pages field. If e.g. every file contains a front page which doesn't need to be imported, you can skip 1 page. The Skip Pages option requires two Select Page activities, e.g. one to select the odd pages, and the second to se-lect the next page (skip 1 page).

Please note that the workflow will be executed for every selected page in the workflow.

The illustrated workflow will select all pages from the document, im-port each of the pages, trap them, save them and close them. Hence there will be a saved file for every page in the document. If the document contains 16 pages there will be 16 individual saved files on the system, each containing one of the pages. The job win-dow would show the workflow being repeated for every page in the document. The Save File activity will actually save all pages as sep-arate documents, based on the File Naming Template.

Note: When a page range is defined in the parameters for the Select Page activity, the page range based on the Document Page Numbers will be selected (see also Template description for saving files and copying files). When document page numbers are not available or cannot be retrieved (e.g. PDF documents and certain PS docu-ments) the page range will be determined based on the logical page order in the file.

5.4. Output PS via Appletalk

This activity is used to send a PostScript file to an AppleTalk device.

Note that the output of the Print to File activity is not a PostScript file but an EPS file, and hence needs to be followed by a Convert EPS to PS activity.

When proofing to an Appletalk device, the device must be located on the network. Editing the PAP output activity will show the identity of the currently selected printer including its zone. If undefined (i.e. blank) or an alternative printer is required, press the Choose button to show the Chooser window. Zones will be shown on the left and printers on the right. Select the required printer and press OK to confirm the selection. Timeout is the time after which the activity errors when not processed.

5.5. Convert EPS to PS

In order to convert a composite EPS file (or a set of separated EPS files) into a PS file that is suitable for downloading to a PostScript printer (e.g. by using the Output PostScript activity), at the very least some page size and alignment information needs to be specified. This is accomplished by the Convert EPS to PS activity.

5.5.1 Media Settings

- **Use EPS BBox**

  If the EPS Bounding Box is checked, the page size in the PostScript is derived from the Bounding Box comment at the start of the EPS file(s). Otherwise it will need to be selected from a set of fixed page sizes defined in the PPD for the proofing device.

- **To fit Media allow**

  In order to fit the file onto the selected media, some scaling or rotation can be appropriate.

  Downscaling: with this option on, the file will be scaled down to fit the selected media.

  Rotation for optimal fit: If the rotation of the job doesn't match the direction of the output media, this option will determine if the job should be rotated or not.

- **Align Horizontally / Vertically**

  If the selected page size is larger than the EPS file, the EPS image may be aligned vertically and or horizontally within the available area using the two pop-ups. If it is smaller than the EPS file, a Downscaling option exists to reduce the size of the EPS image in order to fit the defined paper size. If the box is not checked, the image may be clipped.

5.5.2 Separation Settings

- **Seps in Color**

  The purpose of this option is to make a separated proof (on an inkjet or color laser printer for example) where each separation is colored in its own color. The cyan separation will be colored cyan, magenta with magenta,.... When the option is not ticked, each separation prints in black.

- **Color Input**

  This allows to deal with certain kinds of EPS files as input, e.g. Photoshop RGB EPS files. Normally, Convert EPS to PS scans comments in the EPS to decide whether the .EPS is monochrome or color, and what colors it contains. However the RGB EPS files do not contain these comments, so Nexus processes them as monochrome. Setting the flag forces Nexus to consider all files as containing CMYK.

- **Remove brackets from Plate Color names**

  This allows to remove the brackets from the Plate Color name in the PostScript.

5.5.3 PostScript Settings

- **Embed EPS in PS**

  If the option is switched on, the EPS will be copied completely into the created PS file. However, when converting an EPS to PS in order to process it through NexusRIP, it is possible to disable the option, placing a link to the EPS file in the PS instead of the complete EPS file. This can be used when processing the file through Nexus Rip, as all files are on the same computer, and this can speed up the processing. However, when creating a PS to be exported from the Nexus server, it is better to leave the option on.

- **Create title**

  If *Create Title* is on, the title is put into the generated PS file, in the *%%Title comment*. When the PS is exported to another system, some systems will display the title to the user, or even parse it to extract information.

  In that case, the *Template* will allow to define on how to create the Title, and what info it contains.

- **Number of Copies**

  This allows to define how many Copies need to be printed.

- **PPD Options**

  If a PPD has been selected, the PPD Options list box will show one or more groups of options that may be opened and closed independently using the toggle arrows. As each option is selected, a popup showing the available values is shown and the re-

quired value selected. Once again the Template button will determine the name of the file that will be used to be downloaded to the Printer, see the appropriate section as described in the Copy File activity.

5.6. Copy FTP

This activity will FTP the output file of the previous activity to a designated destination.

This destination is defined by an IP address, with a valid username and password. Optionally a destination path can be entered. For specific FTP activities fine-tuned for various devices, including token files, see NexusRIP – Rip Drivers.

5.6.1 Enable Passive Mode

When using active mode, the connection between data ports (opening the data connection) is done from the server side. For some firewalls, this is prohibited, thus generates an error. In that case, passive mode can be chosen, meaning both command and data connection are established from the client side.

5.7. Copy to Automation Engine

New functionality is added in order to cope with the Send to Nexus ticket that will be introduced in Esko Software Suite 7 R5 (Back-Stage) and later (Automation Engine). The Copy to Automation Engine activity is required to send output files back to the Automation Engine job folder.

If the job is not send from Automation Engine, the activity will be successfull without doing anything. This allows you to use the workflows with this activity with or without Automation Engine.

The activity itself doesn't have any parameter.

In order to go to the Automation Engine job folder where the 'Copy to Automation Engine' activity has copied the file to by double clicking on the 'Copy to Automation Engine' activity in the job editor of NexusManager, the location of the Automation Engine Pilot must be set in the preferences of NexusManager. see 2.1.2 Applications on page 35

5.8. Compress / Decompress

This activity can handle compression or decompression of groups of files, using the Stuffit engine. Some of the options are only available if Nexus is running on Mac OS X

5.8.1 Direction

Makes the distinction between compressing and decompressing. When compressing, all file dependant files will be included in the archive. The Template allows to define the name of the archive.

5.8.2 Compression Mode

Allows to define to use Best (and thus slower) or Fast compression.

5.8.3 Output Format

Defines the Output Format for the compressed file. Options are: Zip, SIT, SEA and EXE. The last two are self-extracting archives, and are only available if Nexus is running on Mac OS X.

5.8.4 If File already exists

The If File Already Exists option (Mac OS X Only) defines what should be done if a file is to be created and a file with the same name already exists. Option are to replace the existing file by the new file, Rename the newly created file, or Keep: leave the original file as is.

5.8.5 Delete Original(s)

(Mac OS X Only) Defines to delete the Original files after compress (i.e. the uncompressed files) or after decompress (i.e. the archive itself).

5.8.6 Create Sub Folder

(Mac OS X Only) When extracting an archive, you can decide if a subfolder should be created every time (always), only if multiple files are extracted, or never.

5.9. Archive / export files

The *Archive / Export* function allows to archive all files used in the flow of the job, i.e. files used for importing, or files created during the processing of a job.
The position of the archiving activity will define of what part of the workflow the archiving should be done: only the files concerning activities before the archiving activity will be used. Also, based on the file type, the user can determine what files should be exported.

5.9.1 File types to be archived

The list shows all file types that can be encountered during the processing of a job. All file types that are marked will be archived. A file type can be switched off or on using the option.

5.9.2 Select All / Deselect All

Using these buttons will select or deselect all file types in the list

5.9.3 Output

Using the File Naming Template (see 3.6. File Naming Template on page 132), the place and naming of the files to be saved can be set.

5.9.4 Server system

In order to maintain the preview and other additional file information, in Mac platform saved in the resource fork, on other file systems such as Samba or Helios servers, this additional information should be saved in specific data folders. For more, see 5.2.1 Server system on page 160

5.10. Control event

Control event allows to define a conditional action: if the condition of the *Trigger* is fulfilled, the defined *Action* will be started.

This can be used e.g. to have an e-mail send when a job is finished, or to send a different e-mail when a job fails, or to delete a job if it fails a specific activity, etc.

5.10.1 Trigger

- **Time out**

  If the "*Time Out after... seconds*" is passed, the *action* will be started

- **All Pages Complete**

  After all pages are completed, the action as set will be started

- **Activity Status**

  Dragging an activity into the *Target* square will define what activity will be monitored. Underneath can be defined what should trigger the action: if the selected activity is *aborted*, *failed*, *held*, *stopped* or *completed*.

- **Job Failed**

  If the job failed, the action as set will be started

- **Job Purged**

  After purging the job, the action will be started

- **Time of Day**

  This allows to start a workflow (or a part of it) at a certain time of day. This can be used e.g. to expose all films during the night.

5.10.2 Action

The action can be *continuing* (with the next step as defined in the workflow), *purging* the job or *deleting* the job. *Abandon* will abandon all activities after the Control event.

5.11. JDF Export

The Export JDF function is typically used at the end of a workflow, behind a control event "All pages Complete". It creates a log file of all activities that were processed, including timings and the page sizes, in a JDF format.

The only setting is the File Naming Template (see 3.6. File Naming Template on page 132)

5.11.1 Adding Workflow Parameters to the JDF Report

You can add Workflow Parameters to the JDF Report, by putting a NeXML file in the folder "NeXML" in the Nexus Server folder. All settings found in the NeXML that are used in the workflow, will be added to the JDF Report.

This NeXML file can be created by saving a NeXML file from an activity or a complete workflow, and removing unwanted parameters using the NeXML editor.

If you want to create a NeXML file for every activity, you can select "Save as NeXML" from the contextual menu in the activity list of the WorkFlow Editor. When saving all those in the "NeXML" folder, every single WorkFlow Parameter will be saved in the JDF Report.

5.12. Certified PDF Check

The Certified PDF Check activity allows to check a PDF file to see if it is certified.

It will only work on PDF files, and will NOT certify any files!

The Activity settings allow to generate an error or a warning for each of the conditions: Not Certified, Certified with Errors, Certified with no Errors, and Profile Different and Not Stricter. This last option

compares the profile used to Certify the PDF file with the profile entered in the Profile path. Note that not the name is compared, but the contents of the Profile.

The Create Certify Reimport option allows to create a separate PDF document of the Certify Report. The File Naming Template is used to define the name and location.

5.13. JDF Imposition

The JDF Imposition activity is used in a JDF Imposition Workflow (see • JDF Imposition Workflow on page 114).

It converts the JDF file into a PSL file (PostScript Layout). How it should be implemented in a JDF Imposition workflow is explained in • JDF Imposition Workflow on page 114.

The only setting is the File Naming Template (see 3.6. File Naming Template on page 132)

Note: This should only be used in legacy workflows. It is advised to use the JDF to PDF activity if possible.

5.14. Delete File

The Delete File activity allows to delete a file or a folder from disk. No settings can be made: the file or folder to be deleted is determined by the file dependency to the Delete File activity.

5.15. Rename File

The Rename File activity allows to rename a list of files using the File Naming Template. See 3.6. File Naming Template on page 132 for more info.

It is however not possible to use this activity to move files from one folder to another.

5.16. Move Folder

The Move Folder activity allows to take a folder as input, and move it to another location. The only option is the Output, using the File Naming Template. See 3.6. File Naming Template on page 132 for more info.

5.17. Sort Files

The Sort File activity allows to sort a number of files and send them grouped to the next activity.

This activity was developed to sort and group automatically generated files (for digital printing, with variable contents) and send them to an Automatic S&R activity.
We will explain the settings for a collection of 300 files, to be placed on 2 by 3 repetitions.

5.17.1 Sort For Serial Printing

The order of the files is not changed. They are send to the following activity (Automatic S&R) in groups of 6 files.

S&R 1	S&R 2	S&R 3	S&R 4
001 002	007 008	013 014	019 020
003 004	009 010	015 016	021 022
005 006	011 012	017 018	023 024

5.17.2 Sort For Roll Printing

The order of the files is changed so that, after printing on roll media, the roll can be cut, resulting in sequencing files. They are send to the following activity (Automatic S&R) in groups of 6 files.
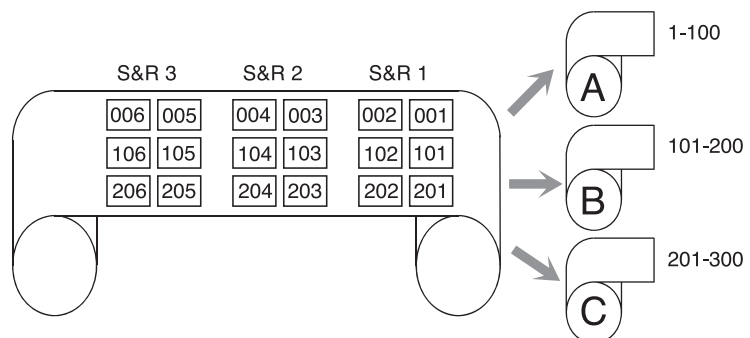
5.17.3 Sort For Sheet Printing

The order of the files is changed so that, after printing on sheet media, the sheets can be cut, resulting in stacks of sequencing files. They are send to the following activity (Automatic S&R) in groups of 6 files.
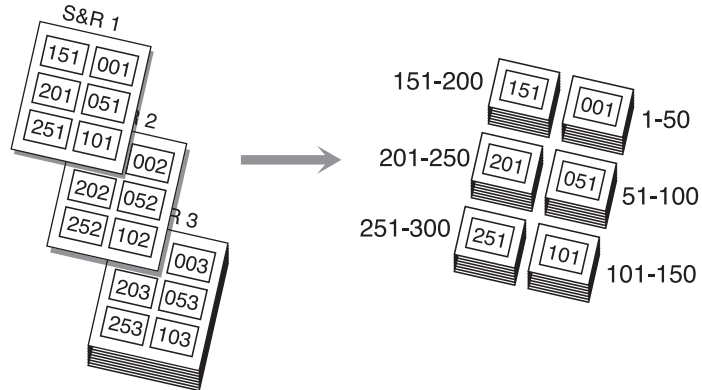
5.18. Submit

The Submit activity allows to link multiple workflows together. This can also be done (as in earlier versions) using a file copy into the hot folder of another workflow, but then you loose some job information: the user who submitted the file, the User keywords,...

When using the Submit activity, this information will be sent to the (remote) workflow. If the "Propagate Parameters" option is on, also public parameters added by shuttle or NeXML will be sent along. The workflows on the same server, or on a server that is or can be connected to, can be chosen from the dropdown list. When submitting to a workflow on a different server, a folder mapping can be defined if necessary. In this way also the JDF / JMF job ID can be kept across the different workflows.

- **Important Remark:**
  If you connect from one Mac to another with the submit activity, the hard disk names of both Macs should be different, to avoid a name conflict between the mounted drives and the hard disk name will occur. To avoid this, you can either rename the hard drives, use share points, or mount the user folder instead of the complete hard disk.

- **Editing**
  In the Job Editor, you can edit the newly created job on the server when you are connected to that server.

5.19. Update Template Keywords

Update Template Keywords is an activity, developed for Shuttle users. It has no input nor output. It is preferably placed in front of the workflow. For ease of workflow building, all inputs are copied to the output list, so you do not need to adept any dependencies.

The Update Template Keywords activity allows to overwrite the values for one or more keywords.

Clicking the plus button will allow to add another keyword (which is not already defined in this dialog), the minus button allows to remove a keyword.

The values of the keyword can be set by using a template.

The rest of the workflow will use the values for the keywords as entered here, e.g. in text, for file naming, in Artlink, etc.

The main purpose of this activity, is to allow the definition of keyword values upon submitting a job from Shuttle.

Chapter 6. Communication Activities

The activities which are found under communication are valid for any of the Nexus main modules: NexusImport, NexusProcessor, NexusRIP and Nexus PDF Processor. They contain specific functions for communication in a workflow.

6.1. Wait for OK

This activity will allow to build in a user defined hold position in the workflow.

Upon reaching this step when executing a job, the job will be put on hold until released by operator intervention.

This is typically the case when the Hold Always option is on, which is if Hold On Warning and Hold On Error options are not set. In this case, the system will always go on hold.

All workflow activities after the Wait for OK will NOT be executed until an operator deems it ok to release this step, by opening the Job Editor, selecting the Wait for OK activity and clicking the Release button

The Wait for OK activity can equally be made dependent on other activities. This is typically the case when the Hold On Error or Hold On Warning options are set. In that case, the Wait for OK dialog will show the activity it is set to, "On activity..."

A typical example is preflight during the Importing activity where pages having preflight errors and/or warnings need to go on hold for operator intervention, and pages which do not have errors or warnings can simply continue processing.

To determine that the Wait for OK activity needs to hold when a preflight error during the importing process has been detected a file dependency needs to be created between the Importing activity and the Wait for OK activity.

This is accomplished by clicking the orange File Dependency button from the Importing activity and dragging to the Wait for OK activity. The file dependency is visualized by an orange line between the Importing activity and the Wait for OK activity while the Importing activity is highlighted in orange.

When a document is processed to the workflow and a preflight error is encountered in one of the pages, the corresponding page will go on hold while the other pages will continue processing.
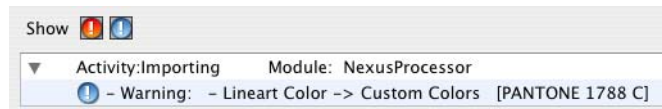
To determine the encountered preflight error, click the Error icon in the activity window. This will open the Job Errors window where e.g. a Cruise Red Alert (preflight error) is displayed.

6.2. Decision

This activity will allow to build in a hold position where the user needs to take a decision what the following steps should be, i.e. what branch of the workflow should be followed. The other branches will all be abandoned.

Upon reaching this step when executing a job, the job will be put on hold until released by operator intervention.

6.2.1 Setting up the Decision activity

The Decision activity is defined by dragging a following activity onto the Decision parameters. Therefor, this activity should have a label.

This activity will then be one of the options in the Decision activity. If it is set to "Default", it will be the default selection. The Option Name allows to define how this option will be represented, either in NexusManager or in Shuttle (see below).

If the Timeout time is reached without a decision being made, the job will pass on along the "Default" branch.
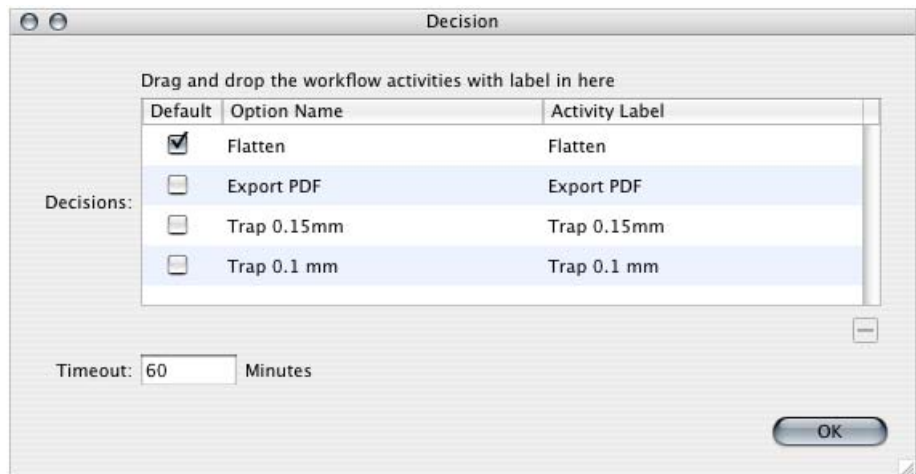
6.2.2 Taking decision in NexusManager

When a job reaches a Decision activity, it will be on hold. In the Job Editor, you can open the parameters for the Decision activity, select the appropriate action in the dropdown, and release the job. It will then follow the branch of the workflow you have selected. Other branches will be abandoned.
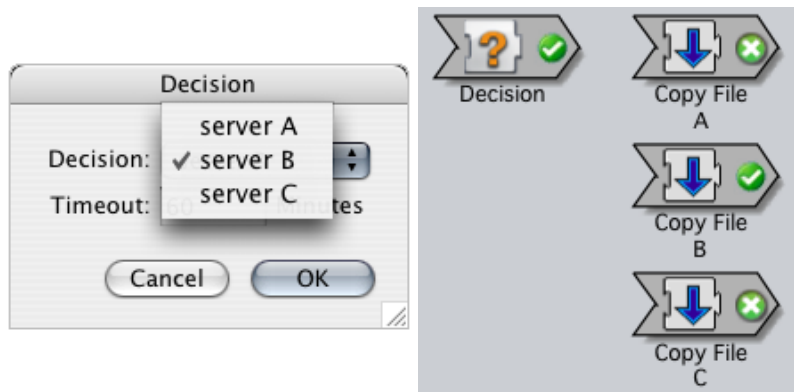
6.2.3 Taking decision in Shuttle

In Shuttle, if a job waiting for a decision is selected, the available choices will be shown in "Attention". Selecting the appropriate action will send the job along this workflow branch.
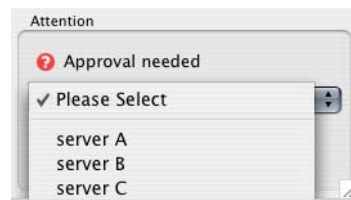
For more info on Shuttle, we refer to the Shuttle documentation.

6.3. Send E-Mail

this activity will send an e-mail to a predefined destination.

Please note that the Mailer activity is not an e-mail server but acts as an e-mail client! An e-mail server needs to be setup to actually send the e-mail out.

6.3.1 Message

- **Kind:**

  type of e-mail, either a generic (normal) e-mail, or an e-mail with files attached.

  When sending an e-mail with files attached, the attachment is defined by the file dependency of the *e-mail* activity, e.g. to mail a cruise report, or a PDF output of a certain job.

- **My real name:**

  actual name of the account sending the e-mail.

- **From:**

  account name of the account sending the e-mail.

  When an e-mail is received, the real name and from field determine the full account name as it will be displayed in the e-mail program, e.g. "Operator<Operator@production.com>".

- **To, CC and BCC**

  account of the person that needs to receive the e-mail, either as recipient (to), as carbon copy (cc) or as blind carbon copy (bcc). Using the Add and Delete buttons, it is possible to add multiple e-mail accounts to the list of people that need to receive the mail, or remove e-mail accounts from the list.

  The To, CC and BCC fields can be defined using a File Naming Template.

- **Subject:**

  subject of the e-mail, defined using a File Naming Template.

- **Message:**

  message body of the e-mail, defined using a File Naming Template.

6.3.2 Configuration

- **My IP Address:**

  IP address of the machine where Nexus is running on.

- **SMTP server IP:**

  IP address of the mail server

- **authentication for SMTP server**

  When sending an e-mail through an SMTP server requiring authentication, the login and password can now be entered.

6.3.3 Job Parameters

In the subject and the message of the e-mail, Job Parameters can be used. When e.g. ^pnam is entered in the subject of the mail, this will be replaced by the actual Job Name when sending the mail. All parameters are listed below:

^Host:	Host name	^pnam:	Job name
^Page:	Page Sequence Number	^Job:	Job number
^JNNE:	Job name without ext.	^FlNm:	File name
^NoEx:	File name without ext.	^SFFN:	Select file name
^SFFi:	Selectfile without ext.	^WrkF:	Workflow
^SFEx:	Selectfile extension	^DPNS:	Doc. Page Nr

This can also be set up using the File Naming Template. See 3.6. File Naming Template on page 132.

As an example, an e-mail could be sent to the shift manager of a production environment each time a large format proof (e.g. imposition proof) has been successfully completed.
The Subject of the mail will be "Job status", and the Message will be "Proof is Ready for Job nr. "with the actual job nr filled in, e.g. Proof is Ready for Job nr. 123.

6.4. Java Activity

The *Java Activity* allows to run a Java application.

This Java application can take over the control of a workflow, based on any input, e.g. a dbase. For more detailed information, please contact EskoArtwork. In the *Java Activity*, the only parameter is the path to the Java application.

6.5. NeXML Activity

The NeXML activity loads the parameters from an XML file, and applies them on the following activities in the workflow. In most cases, the NeXML activity will be preceded by a Select File activity to select the NeXML file.

If the Error if key not found option is on, Nexus will generate an error if the NeXML contains a reference to a key that was not found.

More on NeXML can be found in the TechNote NeXML (in the Download Center).

6.6. AppleScript Runner

When Neuxs is running on Mac OS X, this activity can be used to run an Applescript, including additional parameters.

An example of a script:

```
on DoNexusAction(inFiles, outFile, param1, param2)
   display dialog DoNexusAction(inFiles, outFile, param1, param2)"&"
   "&("inFiles("&(class of inFiles)as string)&")="&(inFiles as string)&"
   "&("outFiles("&(class of outFiles)as string)&")="&(outFiles as string)&"
   "&("param1("&(class of param1)as string)&")="&(param1 as string)&"
   "&("param2("&(class of param2)as string)&")="&(param2 as string)
end DoNexusAction
```

6.7. JMF Signal Activity

The JMF Signal Activity can be used when integrating an MIS system. For more information, see Appendix 2 : MIS Integration on page 446 and 2.4. JMF Signal Activity on page 448.

6.8. WebCenter Output

With the WebCenter Output Gateway, you can upload files processed by your Nexus workflow to a WebCenter project folder.

WebCenter is the EskoArtwork web-based collaboration, approval and project management tool for workflows. For more information on WebCenter, please see the WebCenter documentation.

6.8.1 WebCenter Connection

- **WebCenter Address**

   Enter or paste the URL (browser address) of your WebCenter server.

- **WebCenter Username**

   Enter the user name you use to connect to WebCenter.

Note: The WebCenter User will be the project manager for new projects created in WebCenter.

- **WebCenter Password**

   Enter the password you use to connect to WebCenter.

Note: The WebCenter Password is case-sensitive.

- **Use HTTP based file upload**

   - Enable this option if you want to upload your files to WebCenter using the HTTP protocol.

   - Disable it to send your files to an output folder, in a shared location accessible by both your Nexus server and the Web-Center server.

Note: Using the HTTP protocol requires less setup than sending your files to an output folder in a shared location, but it may be slower.

- **Upload Folder**

   This parameter is only available when you disable Use HTTP based file upload. Use the browse button to select a folder in which to copy the files you want to upload to WebCenter.

   This folder must be in a shared folder accessible by both the Nexus server and the WebCenter server.

   Use the remove button to remove the path to the output folder.

- **Windows Network Location**

   This parameter is only available when you disable Use HTTP based file upload.

   Enter the address of the shared folder where the files need to be output to, in the Windows notation (e.g.: \\servername\shared).

This shared folder must be accessible by both the Nexus server and the WebCenter server.

6.8.2 Project Information

- **Extract from WebCenter Ticket**

  This option can be used for jobs coming from WebCenter. In that case, a WebCenter Ticket will be sent along, and Nexus can extract Project Name, Description and Template from this WebCenter Ticket.

- **Project Name**

  The Project Name, Project Template and Project Description parameters are available when "Extract from WebCenter Ticket" is disabled

  The Project Name parameter allows you to define the project to send the file to in WebCenter. If the project doesn't exist in WebCenter, this will create it. If the project name already exists, the files will be added to the existing project.

  This parameter uses the Naming Template dialog. For more information on the Naming Template, see 3.6. File Naming Template on page 132.

- **Project Description**

  This parameter is optional. You can use it to add a description to your project (when creating it with the Project Name parameter).

  This parameter uses the Naming Template dialog. For more information on the Naming Template, see 3.6. File Naming Template on page 132.

- **Project Template**

  This parameter is optional. You can use it to assign a project template to your project (when creating it with the Project Name parameter). For a Nexus connection, this template is important, because the list of approvers is defined in the template.

  If the template is defined, make sure that the project manager defined in the template, matches the user name and password entered in the activity.

Note: The Project Template you assign must exist in WebCenter.

This parameter uses the Naming Template dialog. For more information on the Naming Template, see 3.6. File Naming Template on page 132.

- **Project Subfolder**

  Use this parameter if you want to send your files to a subfolder of the WebCenter project. If the project subfolder doesn't exist in WebCenter, this will create it.

  This parameter uses the Naming Template dialog. For more information on the Naming Template, see 3.6. File Naming Template on page 132.

6.8.3 Document Information

- **Document Description**

  You can use this parameter to provide an optional description for your file. To do this, use the browse button to open the Naming Template dialog.

  For more information on the Naming Template, see 3.6. File Naming Template on page 132.

- **Version Comment**

  You can use this parameter to provide an optional comment on your file. To do this, use the browse button to open the Naming Template dialog. For more information on the Naming Template, see 3.6. File Naming Template on page 132.

  WebCenter has a powerful version management of files. Each version can have different comments. The version number goes up if the file got uploaded multiple times.

Note: due to the version management the same file can not be in a different subfolder of the project.
This is triggered by the file name.

6.8.4 Approval Options

- **Start Approval Cycle**

  Enable this parameter if you want to start a WebCenter approval cycle once the file is uploaded to WebCenter.

Note: You must have defined a list of approvers in WebCenter before you can start an approval cycle from Nexus.

Note: You must enable the Start Approval Cycle parameter in the WebCenter Output activity in order to use the WebCenter Approval activity. See 6.9. WebCenter Approval on page 181.

- **Due Date**

  This option can be used if you want to define a deadline for the approval (all approvers will have to either approve or reject the file by this date).

  - Choose "No Due Date" to set no deadline

  - Choose "Due by" to enter the due date independently from the current date.

  - Choose "Due in ... days" to enter the due date relatively to the current date

  The Absolute date format will respect the international settings of the client machine.

6.9. WebCenter Approval

The WebCenter Approval activity allow you to monitor the approval cycle of those files in WebCenter and output them as approved or rejected in Nexus.

WebCenter is the EskoArtwork web-based collaboration, approval and project management tool for packaging workflows. For more information on WebCenter, please see the WebCenter documentation.

Note: You must enable the Start Approval Cycle parameter in the WebCenter Output activity in order to use the WebCenter Approval activity. See • Start Approval Cycle on page 180.

Note: In order to use WebCenter Approval when running Nexus on Windows, the Java Runtime Environment needs to be installed and configured on the server. See • Java Runtime Environment on page 26. If the Java Runtime Environment is not installed and configured on the server, Control will not launch the WebCenter Approval module.

6.9.1 WebCenter Connection

- **WebCenter Address**

  Enter or paste the URL (browser address) of your WebCenter server.

- **WebCenter Username**

  Enter the user name you use to connect to WebCenter.

- **WebCenter Password**

  Enter the password you use to connect to WebCenter.

Note: The WebCenter Password is case-sensitive.

6.9.2 Advanced

- **WebCenter and Nexus are on the same LAN**
  - Enable this parameter if your Nexus server and your Web-Center server are part of the same Local Area Network.
  - Disable it if your nexus and your WebCenter server are not part of the same Local Area Network. In this case, you need additional log-on parameters (Approval Client Username and Approval Client Password).

- **Approval Client Username**

  This parameter is only available when you disable WebCenter and Nexus are on the same LAN.

  Enter the "Approval Client" user name, set up by your administrator in WebCenter.

Note: You cannot set up WebCenter approvers in Nexus, you must do it in WebCenter (e.g. using a project template that contains a list of approvers). For more information, please see the WebCenter Documentation.

- **Approval Client Password**

  This parameter is only available when you disable WebCenter and Nexus are on the same LAN.

  Enter the "Approval Client" password, set up by your administrator in WebCenter.

Note: The Approval Client Password is case-sensitive.

6.9.3 Options

- **Maximum Time Out**

  The Maximum Time Out is the maximum time the activity will wait for the file to be approved or rejected before sending it to output.

  If the file is not approved or rejected by all WebCenter approvers within that time, the activity will fail the job.

  Enter the Maximum Time Out in number of days.

Chapter 7. Nexus Import Activities

All NexusImport activities are related to the ArtPro native file format, e.g. the internal format of NexusImport is the ArtPro format which implies that NexusImport is equally capable of opening and further processing ArtPro native files.

Please note that a considerable number of NexusImport activities are identical or very similar to functionality that can be found in Art-Pro. As an example, the Importing activity in Nexus is almost identical to the PS/PDF Import function in ArtPro. In these cases, a basis explanation is given in this Nexus manual. For a detailed description we refer to the ArtPro manual.

The NexusImport module equally contains a number of vector outputs which will convert the ArtPro native file format to a range of vector output formats.

7.1. Certified PDF

"Certified PDF" allows to integrate the Certified PDF Workflow functionality into Nexus. The aim is to provide functionality to import Certified PDF, edit and then export as Certified PDF with information about edits and changes to the document. Certified can be divided in 3 parts: Input, Output and Certified ArtPro sessions.

7.1.1 Certified ArtPro sessions.

Nexus can work in Certified Mode, by switching it on in the Certified PDF activity.

User name, Short user name, etc. - provides the information about the user who is editing the PDF document. That information will be stored in Certified PDF each time when a new session is started (see earlier).

If you enable Certified Mode, the filed "User name" is mandatory. So before switching on Certified Mode, a User Name should be specified. Otherwise, switching to Certified Mode will not be allowed and a message box will be shown, stating that User Name must be defined before turning Certified PDF on.

Working Certified Mode in Nexus, affects the way it works for all following open/save activities. Whatever the Certified options states are, Nexus is now recording the history of changes made to the file and saves them with the ArtPro files. From version 8.0, all ArtPro

files have the possibility to be exported to Certified PDF and all the history of changes will be recorded. Those changes are recorded as sessions.

A session is a track of changes from beginning of the session to the end of the session.

A session starts when:

- A file is created or opened that doesn't contain a session yet. This can be: opening an ArtPro file from version lower than 8.0, importing a PDF (Certified or not) or importing any other file format.
- An ArtPro 8.0 or higher is opened, changed and saved. The active session is closed, and a new session is opened
- Certified PDF file is exported and Certified mode is on (explained later). In that case, the old sessions are recorded to PDF file and a new session is opened.

The session is not begun when:

- Certified PDF file is exported and Certified mode is off. The active session will be continued.

7.1.2 Import PS / PDF

The Import PS/PDF dialog contains a tab "Certified" where all settings can be made to import Certified PDF. For more info, see 7.5. Importing on page 190.

7.1.3 Export

The "Export PDF" operation (with Certified enabled) will close the session, add "edit log" information and optionally preflight the document. The standard "Export PDF" dialog window has now an additional tab "Certified PDF":

If the "Output profile" file is selected then PDF file is preflighted after being exported. The Output profile can be cleared by shift-clicking the Browse button. If "Certified PDF Enabled" is unchecked, then regular non-certified PDF file is saved and no new session is started.

The "Incremental save" option will work only if the last Certified PDF (i.e. the imported Certified PDF or the last Exported PDF) is still available. The option means that the previous Certified PDF file's contents will be merged with the exported PDF, so that "rollback" the PDF document to the previous session will be possible. Using this option can result in a large PDF file.

To keep both the PDF as the ArtPro file in a certified ("green") state, it is necessary to save the ArtPro file after the Certified PDF Export.

7.2. Create ArtPro File

This activity will generate a blank ArtPro file, which can be used later in the workflow for adding pictures, inserting other files, etc....

7.3. Open ArtPro File

This activity will open an existing ArtPro file, either input through a hot folder, generated earlier in the workflow (e.g. with a file dependency), or defined earlier in the workflow (e.g. through the Select File activity)

Please note that when an ArtPro file is dropped in the hot folder, the line art file AS WELL as the CT file (when available) need to be dropped. The system will automatically select the line art file for opening while recognizing the appropriate CT file. In order for this to work correctly, the corresponding workflow has to be created with the option Preserve Filenames active. This will make sure that the appropriate line art and CT file names are not modified by the system which would result in the system not finding the CT portion of the file.

The Open ArtPro File activity contains functionality related to used images, used fonts and color management. Although an ArtPro file can contain a line art portion and a CT portion (for internal images), an ArtPro file can equally contain LINKED images, these are images which are used in the ArtPro file but which are not embedded in the CT portion of the file.

An ArtPro file can be generated on the Nexus system, but can equally be generated on a front-end Macintosh with the ArtPro application. In this case there are 2 possibilities:

- the images which were used were residing on the Macintosh
- the images which were used are residing on a server which can be mounted on the Nexus system.

The Open ArtPro File activity contains 4 main portions: Root Folders, Folder Mapping, Fonts Folders and Color Management.

7.3.1 Root Folders

When images were used residing on the front-end Macintosh or on a server which can not be mounted on the Nexus system, the Root Folders functionality can be used to define where Nexus has to locate linked images which are used in the ArtPro file for opening.

In this example one Root Folder has been defined: E:/Nexus/ AP_files. When an ArtPro file needs to be opened that contains linked images which were previously stored on a local Mac, they need to be copied to this folder or a subfolder of this folder first. A Root Folder can be added by typing in the appropriate path and clicking the Add button, or by selecting it through the Browse mechanism. Equally, a Root Folder can be removed by clicking the Remove button.

Note that multiple Root Folders can be set, when opening an ArtPro file, Nexus will go through the respective root folders (and subfolders) until the image has been located.

Note:	You can use a File Naming Template to locate the root of the images.

7.3.2 Folder Mapping

When images were used residing on a server which can be mounted on the Nexus system the Folder Mapping mechanism can be used.

As an example, in the ArtPro file, the path of an externally linked image can be defined as: Intel_Mac:images:image1.

Obviously, on the Nexus system, the file server would be mounted at a different mount point with a different name. Typically the image server would be mounted to a drive letter, e.g. G:

To allow Nexus to automatically locate images on the Image Server when opening an ArtPro File, the Folder Mapping mechanism allows to substitute a portion of the path name used in the ArtPro file with another name. In above example, Intel_Mac would be substituted with G:/, which would tell the Nexus system to find above image as G:/images/image1.

To define a Folder Mapping substitution, enter the respective fields "On Client" (how the local Macintosh sees the file server) and "On Server" (how the Nexus system sees the file server) and click Add. Similarly, Folder Mapping substitutions can be removed by clicking the Remove button.

7.3.3 Folder Replacement

When images are on a different location than defined in the file, the Folder Replacement mechanism can be used. Folder Replacement works in the same way as Folder Mapping.

If the "First apply folder replacement" is disabled, Nexus will search the external files in the original location first, and when not found, search in the Folder Replacement location. If the option is enabled, Nexus will start searching in the Folder Replacement location.

7.3.4 Fonts Folders

When live text has been used in the ArtPro document, fonts folder can be used to allow Nexus to extract the outline information from the Mac fonts for trapping, printing, exporting, ArtLink functionality, etc.… Please note this is only valid for Type 1 fonts and Truetype fonts.

To define a fonts folder click the Add button and browse to the appropriate folder. Similarly, fonts folders can be removed by selecting them and clicking the Delete button.

Although the ArtPro file format (version 6 and onwards) contains all the outline information for live text in the document, the font is still important for special functionality in Nexus like ArtLink, Regmarks, etc.…

By clicking the folder icon next to a font folder, you can select "Edit", which will open a File Naming Template dialog allowing to define the name for the font folder based on the job name, user name,...

7.3.5 Color Management

This setting will determine if color management has to be applied during the workflow. When enabling color management, it will be possible to select a color management settings file, previously saved by ArtPro. This file contains all ICC profiles and settings to determine how color has to be treated throughout the rest of the NexusImport or NexusProcessor workflow, including ICC profiles for proofing, printing, etc....

If the ArtPro file itself contains a working space different from the one defined in the Color settings file, the workflow will stop if the option "Stop when working space profiles are different" is on.

7.3.6 Map Pictures

If the Map Pictures option is on, Nexus will convert images to Mapped Pictures if possible. For more information on Mapped Pictures, we refer to the ArtPro documentation.

7.3.7 Ignore Screening Errors

Since Nexus Extended Screenings are stored differently in files older than Nexus 8.1, opening a file from 7.5 or 8.0 will result in a conversion of the screening. If this conversion fails, the job will fail, unless the "Ignore Screening Errors" option is on. As a conversion error means the screening settings will be changed, it is advised to use the Ignore Screening Errors option only for workflows that don't have any screened output, or if screening settings are defined in the workflow itself.

7.3.8 Load Nexus Parameters

Using the Load Nexus parameters option, you define whether or not the "Nexus Parameters", set in the ArtPro file for trapping, separations, etc., should be loaded. You can use this toggle to overrule the Nexus Parameters (defined in ArtPro) by the parameters which are defined on submission (Shuttle).

7.4. Insert File

This activity will insert an existing ArtPro file or picture into the file which is currently being processed.

The file that is inserted can either be a fixed file (name is selected in the Insert File window) or a file which has been determined by a previous Select File activity (in this case the file to be placed would be selected from a folder which is dropped in the hot folder) or a file which has been generated elsewhere in the workflow. An example of the last case is for instance the result of a Difference activity that needs to be inserted (place as picture) in a new ArtPro file.

Please note that in both cases where the file is determined from a Select File activity or another activity in the workflow a file dependency needs to be created.

The insertion is done on the bottom right quadrant of the current position of the ruler, determined by the position of the ruler in the Importing activity, the position of the ruler in an opened ArtPro file, or the position of the ruler after the Move Ruler activity.

7.4.1 Browse

Allows to physically select a fixed file from the Nexus system. Clicking Browse will open the Browse menu. After selection the name of the file with its full path is displayed underneath the Browse button.

When no file is selected, the file to be inserted will need to be determined by a file dependency set in the workflow (previous Select file activity or file dependency to another activity in the workflow)

7.4.2 Overwrite separation angles and frequency

When inserting an existing ArtPro file, the system will load colors correctly. If separations were different, Nexus will add the appropriate separations in the separation table. When there are identical separations, this option will overwrite the angles and frequency of the current separations with the values of the file that is being inserted.

7.4.3 Merge layers with same name

The ArtPro file format supports layering, when this option is set content of layers in the inserted ArtPro file will be merged with content of layers in the current file if they have the same name.

7.4.4 Ignore Screening Errors

Since Nexus Extended Screenings are stored differently in files older than Nexus 8.1, opening a file from 7.5 or 8.0 will result in a conversion of the screening. If this conversion fails, the job will fail, unless the "Ignore Screening Errors" option is on. As a conversion error means the screening settings will be changed, it is advised to

use the Ignore Screening Errors option only for workflows that don't have any screened output, or if screening settings are defined in the workflow itself.

7.4.5 Place as picture

This option is used for placing image files, or treating an ArtPro file as a picture (which would mean the content of the ArtPro file is not available e.g. for trapping or internal modifications)

Supported picture types include EPS, DCS, TIFF, PSD, ArtPro, PS, PDF, TIFF/IT.

When inserting a file with the *Place as picture* option on, to place the selected file as a picture inside the open file, the popup next to *Using* becomes available.
At the time of inserting, a rectangle will be created of the same size as the border defined in this popup menu, in which the file will be placed as a picture.
The *Align Picture on* option can be used to define on what border the placed file should be positioned. The top left corner of the selected border will be placed in the center of the ruler. The combination of both options allow you e.g. to place the inserted file positioned on its trim box (top left corner of the trim box in the center of the ruler), but place it inside it's bleed box.

7.4.6 Place Single-Separation ArtPro File in Single Sep.

This option defines how to handle inserting ArtPro files with only one separation. If the option is switched off, objects in this AP file with 100% of the single separation, are considered to be registration color, and thus will get 100% of every ink in the ArtPro file after insertion. If this option is switched on, the file is inserted in one single separation instead.

7.4.7 Recognize TIFF Channels

The Recognize TIFF Channel Option allows to recognize TIFF Channels when inserting a TIFF File
A TIFF file can contain channels indicating masked areas (type1), channels indicating selected areas (type2) and channels indicating spot colors (type3)
Channels of type 1 and 2 are treated as alpha channels, thus put into the opacity channel. If the TIFF contains more than one alpha channel, only the first is used, and all others are ignored, though the separation are generated based on the channel names present in the TIFF. These separations have CMYK value 0, 0, 0, 100, and only reflect the number of channels in the TIFF.
If spot color channels are found, a separation will be created with the same name as the TIFF file channel.
The color definition (CMYK representation) for this spot color will first be searched in the ink book. If not found there, the color information from the TIFF file is used.

If Nexus encounters an unknown color space, a new separation will be created with the channel name, and with CMYK representation 0, 0, 0, 100.

7.5. Importing
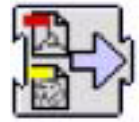
This activity is probably the most important activity of NexusImport and allows to Import PostScript 3 and PDF files in to the native ArtPro file format (with full preflight and correction capabilities).

When a file is imported, typically all elements are made editable and all paths in the PostScript or PDF document are converted to internal ArtPro paths.
This will allow for imported documents to be edited with the ArtPro application. However, text in the PS or PDF documents will in some cases be converted to outlines (depending on the settings in the Font Settings dialogs and depending on Creator of the PS or PDF file), this means that although text can be added in ArtPro, text from the original document can not always be modified using the text editing functionality.

7.5.1 Importing Screening

- **Detecting Esko screening**
  When importing a PS/ PDF file containing Esko screenings, these screenings will be recognized and automatically converted to a PostScript screening with the correct Esko dot shape.

- **Different rulings / dot shape per separation**
  In ArtPro files, it is not possible to have screenings with different rulings or dot shapes per separation. However, in Esko software these screenings can be defined. When importing such a file, these screenings are split up into different ArtPro screenings. The objects using this screening are split up accordingly, and put on top of each other in overprint.

7.5.2 Importing Normalized PDF

Normalized PDF files can be imported into Nexus just like any other PDF. Keep in mind that in Normalized PDF, image links are included as EskoLinks. See 7.5.7 Links on page 198

7.5.3 Page Settings

When opening the *Import PostScript/PDF* Dialog, the *Page* button is selected.

- **Import Page**

  This setting defines, if a multiple page PS or PDF document has to be imported, what pages should be imported. If *Import Page* is inactive, all pages of the PS or PDF file will be imported. This function would typically be inactive, while the page range to be imported would be determined by the Select Page activity. This would actually invoke the importing activity multiple times (creating a document for every page).

  If the Select Page activity would not be used for multipage documents, all pages would be imported in one document.The positioning of the individual pages depend on the setting of the *Multiple Page offset* option (see below).

  If *Import Page* is active, only one page out of the multipage document will be imported. The page that has to be imported can be entered in the Import Page field. The *Import Page* field can take a string input (a page label) as well as a numeric input (a page number).

  As NexusProcessor can only handle one page at a time, the PS import has to jump to the right page inside the PS file before starting import. (Selected Only). However, some application define crucial information at the beginning of the PS file, on page 1 (e.g. Quark defines all fonts on page 1). Therefor, we have to interpret page 1 as well (without generating output) before importing the selected page (First and Selected). In some poorly constructed PS files, it is possible that the information needed for the selected page, is scattered over the pages in front of it. In that case, the option "until selected" should be used.

- **Ruler at top left**

  By default a PostScript or PDF file will be imported placing the PostScript origin (= 0,0) on the center of the ruler. If you switch the option *Ruler at top left* on, the top left of the page will be placed in the center of the ruler, placing the file in the lower right section. The origin in the PS file is in most cases the bottom-left corner of the page, although this is not a general rule. E.g. in EPS files from Adobe Illustrator, the PS origin is the same as the origin of the ruler in the Illustrator file.

- **Multiple Page Offset**

  When importing a multipage PostScript or PDF file without a Select Page activity in front, ArtPro puts all pages with the 0,0 point in the center of the ruler. This results in multipage documents being placed on top of each other. If you use the *Multiple Page Offset*, all pages are put next to each other.

- **Import Separated File as Multipage**

  This option should be switched off in a workflow. It relates to importing a separated file, e.g. files using the %PLATECOLOR command to identify the separation name or older separated PostScript files.

  With the *Import Separation File as Multipage* on, all the elements of a separated file will come in as grayscale, and the different separations will be treated as individual pages, so they will be placed on top of each other, unless the *Multiple Page Offset* is on.

  When importing a separated file with the *Import Separated File as Multipage option* off, the Separated PostScript file converted to one (composite) ArtPro file with all the separations.

  The individual paths coming from the different separations, will be merged together into a path with the combined color information, based on the *Merge Equal Paths* option (see later). Images will be recombined into one mapped picture.

7.5.4 Font Settings

- **Use Replacement Font instead of included Fonts**

  If this option is disabled the system will use the fonts in the file (if embedded). If they are not embedded the system will use the fonts in the Fonts Folder. If this option is enabled the system will use the fonts in the Fonts Folder first, and use the embedded fonts when the fonts are not available in the Fonts folder.

- **Fail if missing font**

  When this option is enabled, and fonts are not available in the Fonts Folders or embedded in the PS or PDF file, there will be a hard error on the Importing activity when executing the workflow, regardless of the Preflight Settings (Cruise Controls). Use this option when no Cruise Controls are in use

- **Fail if Courier**

  Similar to Fail if Missing Font, there will be a hard error if there is a Courier font being used in the document, regardless if it is a missing font or no missing font

- **Convert to real text**

  When this option is enabled, the system will attempt to convert the text in the document to real editable text, which can be modified in ArtPro. To do so, the font must be present on the ArtPro system.

  Note that this option will only work for files coming from certain applications. Also note that only roman characters can be converted to real text. All other characters (special, accented, ...) can not be kept, and will be vectorized.

- **Font folders...**

  It is possible to select multiple *Font folders*, in which Nexus will look for fonts that are not installed on the system nor embedded in the PS file.

  This allows importing a file with the fonts in a separate folder, without activating the fonts. Keep in mind that these fonts will be treated the same way as fonts embedded in the PS file, so all text will be converted to outlines. The font folder can be used for Type 1 fonts and Truetype.

  To add font folders, go to the *Font folder...*, click the + button. A dialog appears to select a folder. Click on the correct folder and hit *Choose*. The font folder is added immediately and Nexus searches the folder and all subfolders for printer fonts.

  A font folder is shown with its complete path. To stop using a font folder, simply select it from the list and click the - button. The *Reset* button, will delete all the font folders from the list.

  The *PS default fonts* toggle will make Nexus use a set of default fonts, like Helvetica, Courier, Times, Symbol,... They are stored in a folder called *PS Fonts*. On Windows, this folder should be on your hard disk alongside the Nexus application file. On Mac OS, this folder should be inside the bundle of NexusProcessor.

  This set can not be modified. Nexus tries to use the embedded fonts first and then the font folders.

  You can open a File Naming Template dialog allowing to define the name for the font folder based on the job name, user name,...

7.5.5 Color Settings

The Color Settings contain all separation related settings and will determine how the custom colors or CMYK separations are handled in the file. All functionality is available to either keep separations as they are defined in the PostScript or PDF file, to convert them to CMYK, or to merge them with another separation. This can be either done in an automated way (e.g. Convert All Custom Colors to CMYK), or for specific separations only which are known to be in the files that will be processed. This will be discussed in the Display Custom Colors section

The list of the custom colors can be seen by clicking the *Display Custom Colors...* button.

- **Single Separation**

  This option allows to import a single separation from a PS file or a PDF file. The name of the separation is to be filled in the text field, e.g. "Black" or the name of any of the other separations in the file to be processed. A typical example of the use of this functionality is double burn or versioning, e.g. language changes, packaging versions, etc.…

Summarized a workflow like this would accept folders containing 2 or more files, preferable with a naming convention which identifies each version, e.g. the English version of a document could have the extension "_eng", the Spanish version of a document could have the extension "_esp".

To simulate a plate change of black only on the press and allow for the merging of the black plate of the Spanish version with the color plates of the English version following activities would be defined.

1. Select file: English version.
2. Importing: CMYK of English version.
3. Save ArtPro file: English version.
4. Export PDF: English version.
5. Select file: Spanish version.
6. Importing: Black Plate only of Spanish version, the Remove Separation option will ensure all Black from the English version is made transparent.
7. Save ArtPro File: English CMY with Spanish K.
8. Export PDF: English CMY with Spanish K. (e.g. for proofing)
9. Close File: remove the file from memory.

This will allow to actually proof the merged files exactly the way they would be put on press. Since this merging takes place at the single file level, it is possible to identify potential problems (e.g. moved graphics or images, text running through images, etc....) early in the process, and physically correct them in ArtPro, even if the original documents are not available.

Double burn workflows are supported for single page as well as multipage documents, while more than 2 versions are equally supported.

- **Remove Separation**

  When Single Separation is active, Remove Separation will make the original separation transparent while the new separation from the file is being imported.

- **Force Black Overprint**

  If *Force Black Overprint* is checked, 100% black in the PS or PDF file is converted to all transparent + 100% black in the ArtPro file. If *Force Black Overprint* is not checked (default), all 100% Black in the PostScript or PDF file is treated as any other color, meaning that the result depends on the *Ignore all Overprints* flag.

- **Ignore All Overprints**

  If *Ignore All Overprints* is not checked (default), overprint in the PostScript or PDF file is converted to transparent in the ArtPro file. If *Ignore All Overprints* is checked, overprint in the PostScript or PDF file is translated to 0% in the ArtPro file. This option can be used to take out the trapping.

  Note that this option is not removing the transparent strokes, but only taking off overprints. If both *Force black overprints* and *Ignore all overprints* are switched off, the file will be unchanged and can then still be modified afterwards.

- **Keep screening**

  This option will keep the screening definitions, if they were available in the PostScript file or PDF file.

- **Fail on Nonseparable Blend modes**

  If the file to be imported contains Nonseparable Blend modes (Hue, Saturation, Color, Luminosity), the file can be set to fail. These Nonseparable Blend modes operate on a 3 component color space. This means that to calculate the resulting color, CMYK needs to be converted to 3 components, the Blend needs to be calculated, and the result needs to be converted to CMYK again. However, no instructions are given on how these conversion from one color space to another should happen. This results in different behaviors and different color results in different applications / RIPs

- **Fail if Transparencies in Incompatible Colorspace**

  If the file to be imported contains Transparencies (Blend modes) on objects in incompatible Colorspaces (e.g. RGB), the file will fail if this option is switched on.

- **Fail if Transparencies imported on Existing Job**

  If PDF 1.4 transparencies are imported on top of a job containing any objects, this option will cause the job to fail.

- **Convert C/CV/CVC/CVU/CVP to...**

  All the separations in the custom color list, that only have a different extension, will automatically be converted to the one extension defined in this menu. So if there is a PANTONE 300 CVU, PANTONE 300 CVC and PANTONE 300 CV, they can all be converted to e.g. PANTONE 300 CVC, automatically.

- **Remove unused separations**

  This option will automatically remove all separations that are defined in the file but which are not used.

- **Convert CMYK to Hexachrome CMYK**

  This option allows to replace CMYK by Hexachrome CMYK, and thus allowing a smoother integration with Hexachrome compatibility.

- **Convert all custom colors / Others**

  With this option checked, all separations in the file will be converted to process colors, e.g. CMYK, based on the CMYK values for the separations as they are defined in the PS or PDF file. The Others option is used for separations that are available in the file but not described in the header. This should typically not be the case in a well constructed PS or PDF file, but does sometimes happen. This option will equally make sure that these colors, if they appear, are converted to process colors as well.

- **Display Custom Colors**

  The Display Custom Colors button will enlarge the Color Settings menu with additional fields and a color list which allows to merge PANTONE™ colors or selectively convert PANTONE™ colors to CMYK without having to convert them all.

  The additional fields that become available show a color list, a From and To field, and an Add, Delete and Reset Button.

  In the example, some entries has been made in the color list: Blue will be merged into Reflex Blue. This is used if there are for instance 2 special blue colors in a file which need to merge together in one color. It is obvious that the names of the separations have to be known before this workflow is executed. If the "Convert To" color does not exist in the file, it will be automatically created.

  To make an entry, type the name of the "From" separation in the left field (e.g. Warm Red), and the name of the "To" separation in right field (e.g. PANTONE™ Red), and click Add. Note that this first will leave the color (indicated by the color swatch in front of the entry in the list) by default black. To change this, click on the swatch and set the desired colors as CMYK values, these values will be used for display (e.g. when using ArtPro), and for proofing to a CMYK device.

  If a separation needs to be converted to CMYK, simply check the "Convert" button. By setting "Exclude", the specified separation will be kept, even if Convert All Custom Colors is used.

  To delete an entry from the list, select the entry and click the Delete button.

  A Color list can be saved to an external file, and loaded.

- **Color Management**

  You can now define different profiles for importing CMYK, RGB or grayscale files through Import PS. Clicking the *Color Management* button will open the *Import PS tab* in the Color Management dialog. For more information, see Chapter 12. Color Management on page 428

- **Color Book**

  The color book for import is the same (and uses the same UI) as the ArtPro color book. Custom colors can be defined in import to be converted into the color book inks. This means e.g. convert them into hexachrome values, if a hexachrome color book was selected. The selected Color book will be shown next to the Color book button, and an option is provided to turn it on or off.

7.5.6 Blends, Shadings & Gradations

Go to this dialog to define how gradients, blends and shadings should be handled on PS or PDF import. It is advised to switch "Recognize Gradations" and "Convert Shadings into gradations" on, to recognize gradations from most popular applications.

- **Recognize gradations (PS Only)**

  In a PostScript file, gradations can be described by a large number of paths, or by a TIFF. In most cases, these can be recognized and replaced by ArtPro gradations, if the option is checked (default).

  With this option, gradations from Freehand and Illustrator are automatically converted into ArtPro gradations or multistep gradations. Freehand and Illustrator vignettes which are not linear, are converted into multistep vignettes with midpoints. Gradations from QuarkXPress are converted into ArtPro linear or multistep gradations.

  If the option is not checked, depending on how the gradation was defined in the PostScript file, it will be imported as a series of paths, or will be converted to a TIFF image

- **Convert Shadings into Gradations**

  PostScript Level 3 and PDF 1.3 and above often use the shading command to define gradations. With this option, Nexus will try to convert most shadings into AP gradations or Multistep gradations. If this option is switched off, Nexus will generate an image.

- **Convert blends into CT at**

  When blends are used in a document, they normally come in as a series of paths, with changing paint styles. These blends are very difficult to select, modify,... Especially trapping becomes very difficult. Therefore, usually blends are flattened into images, with one single path and one single paint style

With this option on, blends will even be converted to internal ArtPro CT's automatically. This means the pictures will be embedded in the ArtPro document in a '.ct' file. The resolution for these images can be set and the unit can be changed from pixels per inch to pixels per cm.

- **Resolution for shadings**

  This option is for shadings that cannot be converted to ArtPro gradations (e.g. mesh gradations). All these gradations are automatically converted and extracted as a TIFF image on disk. The resolution for those TIFFs can be set here. Shading conversion to images is a very time consuming calculation. Therefor, the default resolution is set to 50ppi, but a higher resolution is recommended in some cases, depending on the shape of the object. Check the objects carefully.

  Images generated during PS/PDF import will always generate a mapped image.

- **Interpolate Shadings to 300ppi minimum**

  When working certified, or use Cruise Controls, it is very likely that lowres images will generate a warning or error. This would also happen for images generated when converting a shading.

  To avoid this, the Resolution for Shadings can be set to a higher resolution (300ppi), but the sampling of shadings at a high resolution is very slow and time consuming.

  The option Interpolate Shadings to 300ppi Minimum will sample at a low resolution, and create a higher resolution image from it. The lowres images will be interpolated to a resolution higher than 300ppi. The resolution is a multiple of the sample resolution, e.g. if the sample resolution is 70ppi, the image after interpolation will be 70 x 5 = 350 ppi. This results in a high resolution image, generated at higher speed.

7.5.7 Links

This dialog determines how links are handled upon import. With links we refer to either OPI links (%%ALDImage commands) in PS or PDF files, or references to EPS images in PS documents, or EskoLinks.

- **Placing or importing**

  The different pictures that could be used in the original document are TIFF (with or without clipping path), DCS, JPEG, PDF, EPS lineart, regular EPS image (with or without clipping path), EPS duotone, tritones,..., LoRes or HiRes images from OPI systems,...

  Most of these images can be brought into the ArtPro file in different ways:

Most of them can either be placed or imported. Depending on the kind of image and the desired result, we will do one or the other. E.g. When EPS images are imported, Nexus converts the EPS into a TIFF on disk and the TIFF is placed in the ArtPro file. The big advantage is that the TIFF image can be mapped, which gives us benefit for trapping, previewing, ink swapping, ink coverage,.... Therefore in ArtPro it is recommended to work with mapped images (TIFF, JPG, Photoshop PSD and DCS) all the time:

Because of functionality, it is always recommended to map images upon import except for specific cases like copydot images, PDF images, etc.... When images are placed and not mapped, they remain as they are (e.g. compression, content, etc....) and will appear identically in the output as they have been placed. This method is typically recommended for copydot images. Note that only TIFF images, JPG images, PhotoShop PSD and PhotoShop DCS (without vector data) files can be mapped, hence EPS images (any type, also DCS) can ONLY be mapped if they have been imported and thus converted to a TIFF image on disk. Copydot images can equally be imported, (e.g. DCS copydot – 1 bit data) but this is not recommended since the image would be decompressed while writing to a TIFF file hence produce extremely large files.

Please note that TIFF images are not imported but only placed (and possibly mapped). Importing is only relevant for PostScript type images (e.g. EPS images) which are then processed through the Import module separately if "importing" has been set.

Summarized:

TIFF: A TIFF image can only be placed, not imported. A placed TIFF file can be mapped and thus trapped automatically.

EPS image: An EPS image can be placed or imported. A placed EPS can not be mapped. When it is imported, the pixels are converted to TIFF data. If the image has a clipping path, it can be converted to an internal path with the image inside.

EPS graphics: If an EPS graphics file, e.g. a logo or chart, is placed it can be transformed (rotated, scaled,...) but not edited. (it is treated as one object) By importing that same logo, all the vectors are converted into internal paths which can be edited and trapped.

EPS duotones (+ monotones, tritones and quadtones): Can be placed or imported. An imported duotone will be correctly converted to a mapped picture. The condition here is that they were

created with Adobe Photoshop 5 or later. Duotones from older versions of Photoshop are extracted as CMYK images when imported, so these should be placed instead.

DCS: A DCS image is in fact a preseparated EPS. So the same rules apply. Importing will make it a TIFF, which allows us to map, preview, trap,...But a DCS cannot be imported directly (e.g. dropped in a hot folder to be imported), it has to be used in a PS or PDF file. In other words, if the DCS image is placed in a (Illustrator, XPress,...) document that is saved out as a PS or PDF it can be imported and mapped correctly.

OPI images (Open Prepress Interface): When OPI low resolution EPS sample images are used in a document that needs to be imported in Nexus, the images always have to be placed, if they are not automatically replaced by their high resolution version upon import (see the OPI section). If they would be imported, Nexus would create complete new (low resolution) TIFF images that will not be recognized and replaced by the OPI server, resulting in a low resolution output. If low resolution TIFF images are used, they can typically (for most OPI servers) mapped and further worked with (e.g. for trapping).

- **Omit/Embed**

There are three ways to put an image in a PS or PDF file.

- 'OPI': The image is omitted (TIFF, EPS, DCS,...). This means the original picture is not included in the PS file, only the link is available. The link is a path, indicating the place where the image can be found on the hard disk, or anywhere else in the network (e.g. on the file server). These PS/PDF files are obviously very small. They are quick to write and copy.
In the links dialog of PS/PDF Import, they will respond to the settings under Omit. In the picture list, under display links, these images will have 'OPI:' in front of the name.

- 'EPS': The image is embedded. The complete original picture as well as the link is included in the PS file. This means in ArtPro we can choose which we will use. These are usually EPS'. They will respond to the settings under Embed. These images can be recognized in the picture list, by the 'EPS:' in front of the name. Obviously these PS/PDF files will be larger than in the first case.

- The image can be completely embedded without the link. This is usually with TIFF images. (Freehand is an exception. All TIFFs are always embedded in the PS files, with the link)
Because no link or name is available, ArtPro can not display these images in the picture list. No link settings can be defined. These images are extracted to TIFFs on disk during import.

- EskoLink: These are linked images in a Normalized PDF. These act in the same way as OPI links, but use a different syntax. EskoLinks allow to define different density per separation, and allows the definition of separation remapping.

- **How to handle links on Import**

- *1. Use Link and place all*

  The original file referred to by the link will be searched, and this file will be placed. The embedded information (if present) will be ignored. The file will be searched at its original location, unless the link is re-routed in the *Display links...* part of the dialog, or if re-routing is defined in the *OPI settings*. If the image is not found, the embedded info is used. If it is not available, the result is an empty path.

  This setting is mostly used for TIFFs and JPEGs, omitted from the file, lores OPI images, single file DCS or duotones from Photoshop < version 5.

- *2. Use link and import EPS*

  The file referred to by the link will be searched, and this file will be used. The embedded information (if present) will be ignored. If the file referred to is an EPS/DCS, it will be imported, converting lineart to ArtPro native lineart, and extracting images to disk according to the settings in the Images settings. If the file referred to is not an EPS or DCS (e.g. TIFF), it will be placed.

  The file will be searched at its original location, unless if re-routing is defined in the OPI settings. If the image is not found, the embedded info is used. If it is not available, the result is an empty path.

  This setting has to be used for DCS and duotones (if you want them converted to mapped TIFFs). It is also used if there is an OPI swap. In general most OPI images have the same format (e.g. EPS). ArtPro is rerouted to the hires. If that hires is an EPS.duotone/DCS it is imported and converted to a TIFF. In all other cases it is placed. Last this option is used for EPS, either if they are omitted from the PS file, or if they were embedded and the original has been modified since.

- *3. Ignore all links*

  The link is ignored, and only the embedded information (if present) is used. This embedded information will be imported, converting lineart to ArtPro native lineart, and extracting images to disk according to the settings in the Images settings.

This setting is used for embedded (hires) EPS and TIFFs. There is no difference in result whether you apply *use link and import* or *Ignore all links*. However, if the links are ignored, we don't need to worry about ArtPro finding the original on disk (is the link correct?, does it need re-routing?,...).

When importing a PS/PDF file, 1, 2 or 3 needs to be chosen for all 'omitted' images (the ones in the list with *OPI* in front of the name) and also for all the embedded images (the ones with *EPS*

- **Extensions**

  It is possible to override the above option settings with the Extensions fields. Consider the example as in the snapshot where all EPS images are linked and imported. Depending on the types of EPS pictures, it may be considered to make an exception to this setting, e.g. one would not want to equally import copydot EPS pictures. To avoid this, but still allow for other EPS pictures to be imported and hence trapped, it is possible to work with an extension for the copydot images. If the copydot images would be defined as ".cpd" (as an example), then typing ".cpd" in the Extensions field next to Use Link and Place All would place ONLY the images with a .cpd extension, while importing the others.

  It is equally possible to add multiple entries in the Extensions fields separated by a space, e.g. ".cpd .main .duotone" etc.…

- **Into Opacity: B/W, gray, 5th channel, invert**

  With the *Into Opacity* options, you can define that linked TIFFs in the PostScript file should be put into the opacity channel, and thus be made transparent. For more information on Opacity channel, see the Manual ArtPro

- *B/W*

  If the *B/W* option is on, all black&white bitmaps referred to by link, will be put into opacity with a solid black image channel, so all black pixels will remain black, and all white pixels will be transparent.

- *gray*

  If the *gray* option is on, all grayscales, referred to by link, will be put into opacity, with a solid black image channel. The resulting CT will be black for the percentage of the grayscale, and transparent for the remaining percentage.

- *5th channel / invert*

  If this option is on, a 5 channel TIFF referred to by link, will result in a four channel internal CT, and the 5th channel will be used as opacity channel. The areas of the Photoshop alpha channel that were 100% masked, result in 100% image in ArtPro. The areas

that were 0% masked, become completely transparent. Any value in between (e.g. soft edges on the mask) result in a partial transparency (see pictures).If the option *Invert* is on, the opacity

channel will be inverted, using the *Invert* button in the *Mapped Picture* paint style. This way, the alpha channel can be made up in two ways, positive or negative.

With *Into opacity* it is also possible to work with extensions (see above): Example: *B/W* is off, *gray* is on, extension =.gr

This means all B/W will not be affected, and all grayscales with an extension .gr will be put into opacity. All other grayscales are not affected.

7.5.8 OPI Settings

This dialog box is used for rerouting linked images. The rerouting could happen based on the name of the image, or based on the path of the images. There are mainly two reasons why rerouting may need to take place:

- low resolution images need to be replaced by (rerouted to) high resolution images.
- missing images need to be rerouted to their correct (current) location.

Note that re-routing can only be done when OPI links are available for the images and the "Use Link and Place All" or "Use Link and Import EPS" options are set.

- **Perform OPI swap**

  This option enables the rerouting as defined in this menu. If the option has not been set, all settings will be ignored, and no rerouting will take place when OPI links are used by the system.

- **Sample Extension / Hires Extension**

  The Sample Extension and Hires Extension fields are used to swap the extension of the image that is linked. This is typically used for OPI servers which are set to add an extension to, or replace an existing extension with another when low resolution images are generated from high resolution images.

  Every extension that is entered in the Sample Ext. field will be cut off from the linked file before it is actually searched, while every extension that is entered in the Hires Ext. field will be added to the linked file before it is actually searched.

  If the Sample Extension field contains ".lay" and the Hires Extension field is empty, and the image that is linked is "image.lay", then the system will actually search for "image", the ".lay" extension will be cut off.

  If the Sample Extension field contains ".lr" and the Hires Extension field contains ".hr", and the image that is linked is "image.lr", then the system will actually search for "image.hr", the ".lr" extension will be cut off and the ".hr" extension will be added.

  It is equally possible to enter multiple extensions in the fields, separated by spaces. If the extensions of the file referred to in the link matches an extension entered in the Sample Ext. field, the extension will be cut off, and, when present, be replaced by the extension in the Hires Ext. field at the same position. Extensions that only need to be cut off and not replaced should be at the end of the list.

- *Example:*

  - Sample Ext. field: ".lr .low .lay"

  - Hires Ext. field: ".hr .high"

  the result from this operation will be :

  - ".lr" will be replaced by ".hr"

  - ".low" will be replace by ".high"

  - ".lay" will be cut off

- **Sample Folder / Hires Folder**

  Similar to the Sample Ext. en Hires Ext. fields, the Sample Folder and Hires Folder fields are used to reroute the system to search for an image in a different folder than the folder determined in the path of the OPI link. In OPI swapping environments, this is typi-

cally used for OPI systems that are set to generate low resolution images of high resolution images with the same name but in a different folder.

Suppose all low resolution images are stored in a folder "ForLayoutUse", and all high resolution images are stored in the folder "Originals", both under the same subdirectory, then "ForLayoutUse" would be filled in the Sample Folder field, while "Originals" would be filled in the Hires Folder field.

When the OPI link in the file is then:

E:/CustomerX/Images/ForLayoutUse/Image

the system will actually search for and use:

E:/CustomerX/Images/Originals/Image

It is also possible that one path is changed twice, e.g. by putting multiple entries in the Sample Folder or Hires Folder fields separated by spaces. This implies that there should be no spaces in folder names that need to be replaced.

For example, if the Sample Folder contains "LR Customer" and the Hires Folder contains "HR", then the OPI path

E:/JOBNR/ImagesCustomer/LR/Image

will be replaced by

E:/JOBNR/Images/HR/Image.

In the above examples, it is clear that all OPI paths have been generated by a system on Windows. The above would work for cases where the front-end station creating the PostScript or PDF file with OPI links is based on Windows, and has the same mount point and drive letter for the image server as the Nexus system. As in the first example, for both Nexus and the front-end Windows machine, E:/ is the network drive for the image server entered at the mount point where the CustomerX folder is the first available subfolder.

It is clear that in a day to day production environment, the above situation is mostly hypothetical. Indeed, mostly Macs are being used as the front-end, while if even Windows machines would be used, they would often have a different mount point to the image server than Nexus.

In these cases, the Folder Mapping mechanism can be used to remap the drives for the OPI paths. An example will clearly illustrate this.

Suppose the Image Server has following structure for the images that are made available to the network:

E:/Server/Images/…

Suppose that the Images folder has been made available to the Mac environment as Image Server, and this volume gives access to the content of the Images folder.

Suppose that the Server folder has been made available to the Nexus system, and this folder as mounted as a network drive under G:/, hence this G:/ will give access to the contents of the Server directory.

If now an OPI link on the Mac is defined as:

ImageServer:image

then Nexus actually needs to find:

G:/Images/image

To achieve this, we would enter "Image Server:" in the Client field, while entering "G:/Images/" in the Server field. Clicking Add will add this definition to the list, it is possible to have multiple OPI folder mappings active at the same time. The system will equally automatically convert between Macintosh notation of subfolders and Windows notation of subfolders (: and /).

- **Root Folder**

If a linked file cannot be found at its original location or at the location it is supposed to be found after re-routing, the file will be searched for in the folder or volume that is defined as Root folder. Nexus will not only search in the Root Folder but equally in all subfolders. When a Root Folder has been defined, it is displayed underneath the Root Folder button. To remove the Root Folder setting, click on the Root Folder button while holding the SHIFT key.

Note that Nexus will use the first instance of the file that it finds, which may be potentially dangerous in production environments. Suppose the image to be found is called "logo.TIFF" and the logo is not found at its location, Nexus checks the Root Folder and its subfolders.

Suppose in the production environment, 2 customer directories have been set underneath the root folder directory:

RootFolder/CustomerA/Images/logo.TIFF

and

RootFolder/CustomerB/Images/logo.TIFF.

Even if the CustomerB logo needs to be used, the system will always pick the first instance of the name that it finds, in this case the logo of CustomerA!

It is also not advisable (for speed reasons) to select a complete disk or a very big image tree as root folder.

- **Exclude Folders from Search**

  When searching through the Root Folder, folders with a name as entered in this field will not be searched. This can be used if all images can be found on the same volume, with the possibility to exclude all folders containing low resolution files, e.g. all low resolution files may always be put in folders called ForLayoutUse.

7.5.9 Image Settings

- **Vectorise Bitmaps: Always/Most/Never**

  When importing a PostScript or PDF file containing 1-bit images or a 1bit image is detected via OPI, this setting will define how to handle those.

  When set to *Never*, the 1-bit images will be placed as images. When set to *Always*, 1-bit images will always be vectorised. When set to *Most*, the 1-bit images containing more than 5mio pixels will be placed, images smaller than 5mio pixels will be vectorised. This option can be used to e.g. vectorise small logos, but leave large scans, such as copydot files, unmodified.

  When vectorizing a Bitmap, the precision can be set to *Exact* (no reduction factor and straighten margin is applied), *Fine*, *Normal* and *Coarse*. For more info, see the ArtPro Manual.

  If a bitmap is placed as an image, the bitmap will be converted into a *Mapped TIFF* with image channels and an opacity channel. The image pixels will constitute the image and the white ones will be transparent to the background.

  Both a vectorised TIFF and a bitmap mapped TIFF will be colored exactly like in the original document. When importing a PDF file, the result will always be a grayscale TIFF. In most cases a vectorised bitmap will be smaller and quicker to handle than a mapped TIFF.

- **Make Images Internal**

  On import, all TIFF and JPG pictures (placed in the PostScript or PDF file, or extracted by Nexus) can be automatically converted into *Internal Images* in ArtPro, by activating the option *Make Images Internal*. It is only used in exceptional cases. For more information on internal images, see Chapter 5: Contone of the ArtPro Manual.

- **Extract included images**

  If an image has to be extracted on disk during PS/PDF import (see also *Links*), a file will be saved to disk. During Import, identical images will be detected and deleted. This means that, if Nexus extract images from the PS or PDF file and writes them to disk, these images will be compared and if the same image is used several times, only one of them is kept. The comparison is done

after writing the TIFFs, and before making them internal (if necessary). This comparing can take some time, but results in faster editing and smaller file sizes.

The File Name template function (see 3.6. File Naming Template on page 132) in this dialog box is set to define how the extracted images of the PS or PDF file will be named and to what location they will be saved.

The path name in this case determines where they are saved, if empty they are saved to the current job folder.

It is advisable to use the document page number in the Template, as otherwise some files can be overwritten with multipage PS import and Select Page Activity.

- **Resolution / Detect Image Resolutions**

  When images are extracted during the import of a PDF or PS file, and the Detect Image Resolutions in PostScript / PDF Import option is on, Nexus will check the internal resolution of the image.

  If this resolution is an integer (e.g. 360 ppi), the image saved will use this resolution, and will be placed in the ArtPro file at 100% scaling. If the resolution is not an integer (e.g. 243,6 ppi), or if the Detect Image Resolutions in PostScript / PDF Import option is off, the resolution as defined in the Import PS/PDF dialog will be used, and the scaling will be adjusted (in this case, the 300 ppi image will be placed at a scaling of 123.56%).

- **Use original name**

  When an image is extracted from a file of which the original file name is known, switching this option on will save the extracted file with the same name as the original name. If this option is off, or the original name is not known, the name will be prompted, but default it will be the name of the PostScript file followed by .# and a number.

- **Use Photoshop clipping path**

  If a PS file is imported, in which Photoshop TIFF files are placed, containing a clipping path, this clipping path can be converted to ArtPro line art, with the TIFF file placed inside it's path. This option only affects TIFF files coming in with OPI. Clipping paths on EPS images are always used. Another difference is that during Import PS, all paths are imported as straight line vectors, while when using the *Use external clipping* path option when placing a picture, the curves are kept as curves.

- **Recognize TIFF Channels**

  When OPI linked pictures have to be placed, Nexus will try to recognize any spot colors when placing a TIFF file, and if the Recognize TIFF Channels is switched on.

A TIFF file can contain channels indicating masked areas (type1), channels indicating selected areas (type2) and channels indicating spot colors (type3)

Channels of type 1 and 2 are treated as alpha channels, thus put into the opacity channel. If the TIFF contains more than one alpha channel, only the first is used, and all others are ignored, though the separation are generated based on the channel names present in the TIFF. These separations have CMYK value 0, 0, 0, 100, and only reflect the number of channels in the TIFF.

If spot color channels are found, a separation will be created with the same name as the TIFF file channel.

The color definition (CMYK representation) for this spot color will first be searched in the ink book. If not found there, the color information from the TIFF file is used.

If ArtPro encounters an unknown color space, a new separation will be created with the channel name, and with CMYK representation 0, 0, 0, 100.

7.5.10 General Settings

- **Clip Text**

  Text that was clipped in another application will be clipped in Art-Pro as well after Import PostScript/PDF. In order to make this possible, though, clipped text is vectorised in ArtPro and thus no longer available as real text. Normal text (not clipped) is not affected by this option, which is default on.

- **Merge Equal Paths**

  If *Merge equal paths* is not checked, all paths are converted to ArtPro in the normal way. With the option on, two or more identical paths on top of each other are merged into one single path with the combined color information. This option is automatically enabled for separated files.

- **Recognize Illustrator Layers / Merge equal layers**

  With this option on, all the original layers from imported Illustrator (<9) EPS files, are recreated in Nexus and all the elements are put back on the correct layers. All PDF files containing PDF 1.5 layer information, will also generate the correct layers in Nexus. Make sure to generate PDF 1.5 output from certain applications (e.g. Illustrator CS) to include all layer information.

  If the option is off, all vectors will be put on one single layer called *PostScript Import*. This option can be used with or without *Merge Equal Layers*. If Nexus finds multiple layers with the same name, those layers will be merged into one (e.g. An EPS with a 'Dielines' layer is imported on an ArtPro template with 'Dielines' in it). It is possible in Nexus to have several layers with the same name.

- **Ignore Page commands**

  In a normal PostScript file, the document size is defined at two places: the bounding box, in the header of the file, and page commands, later in the PostScript. In most cases, the *Page Commands* are more exact than the bounding box. For files coming from certain versions of Barco systems, the *Page Commands* are rounded off, while the bounding box is exact. In those cases, you can choose to *Ignore Page commands*, and use the PS bounding box instead.

- **Keep Strokes**

  If the option *Keep Strokes* is checked, all strokes found in the PostScript or PDF file will be imported as ArtPro Strokes. If the option is unchecked, the strokes will be converted to regular ArtPro paths.

- **Memory**

  This parameter indicates how much Virtual Memory is allocated to the Import function, in order to store its variables, key words, dictionaries, etc. Generally, 20000 kB (default) is sufficient to perform the function. When the error message *VMError* appears, however, the value should be increased.

7.5.11 Certified

When importing any other file type than PDF, the Sessions log will indicate that no input profile was applied, and the session will begin AFTER the import.

- **Importing non-Certified PDF**

  When importing a non-Certified PDF file, and Certified Import is enabled, Nexus will Certify the PDF file and import the Certified PDF instead of the original. Unless "Overwrite input file on re-preflight" is on, a new, certified PDF will be saved (according to the Template settings), and this certified PDF will be imported. This will be saved as a separate session.

- **Importing Certified PDF**

- *Re-Preflight if profile does not match: ON*

  If the option is on, the job will be re-preflighted if the input profile and the embedded profile don't match. If they match, the session log will indicate both profiles are identical.

  When comparing 2 profiles, their content is checked, and not just the name.

- *Re-Preflight if profile does not match: OFF*

  If the option "Re-preflight...." is off, the Certified PDF will be imported without re-preflighting it. The Session window will indicate the profile it was originally certified by.

- **Re-preflight**

  When Re-preflighting, Nexus will create a new session, preflight the file and close the session. The file will be saved according to the File Naming Template settings.

- *Overwrite Input File*

  If the "Overwrite Input file on Re-preflight" option is on, there will be no new PDF file created by Nexus. Instead, Nexus will replace the original PDF file.

- *Get all bounding boxes for preflight report*

  This option forces Nexus to obtain bounding boxes for the last preflight report. If activated, Nexus will get full information for every report item along with bounding box of the area where the error/warning occurred. This will cause an additional preflight of the input document and consume additional time.

7.5.12 Cruise Controls (Preflight Settings):

This dialog box is used to set a preflight profile for the workflow. Several controls are available which are split up in four categories: Lineart Color Controls, Image Controls, Object Controls and Text Controls, these are found in the left window. Clicking the triangle in front of each of the controls will show the available controls for that category. In the right window the actually selected controls, e.g. preflight settings which will be used in the workflows, are showed, each with either green, orange or red circle in front. The color determines the severity of the control: Red refers to error level, Orange to warning level and Green to note level.

To change the severity level for a preflight item, click on the preflight item and select the appropriate severity level from the dropdown menu.

To add a preflight item to the list, double-click on the control in the left window.

To remove a preflight item from the list, select "Delete Control" from the contextual menu, or select it and press Cmd - Backspace.

The Save Controls, Clear Controls and Load Controls buttons will allow to respectively save all the selected controls with their severity level to a file, clear the list, or load controls and their severity level from a previously saved file.

Note that a job is not held based on preflight, in the case of a warning level or error level there will be only an exclamation mark in front of the job in the Job list indicating the error button should be clicked to verify the error log information for that specific job. However, even if there was a preflight error, the job will still continue to run until completed! In order to have the job stopped in case of a preflight

error or warning, the preflight mechanism should be used in combination with the Wait for OK activity, please refer to this section for a detailed description of such a workflow.

When preflight has been performed for a file and the file has been saved it will contain a complete Cruise Report (preflight report). Using ArtPro it is possible to view this report and actually use it to navigate to the appropriate object in the file that triggered that specific entry in the Cruise Report. Please refer to the appropriate section in ArtPro for a description of this functionality.

By switching on the "Save Report" option, a preflight report can be saved, in PDF format, to the location specified in the Template. Using a file dependency to an E-mail activity, this report can be e-mailed as an attachment, using a Select File activity to select the PDF file only.

Following are the different Cruise Controls or preflight settings which are available:

- **Info Controls:**

  With this settings, information about the imported file can be found:

  Filename: The original name of the imported file

  Format: What file format the imported file has (as found in the header of the file)

  Title: Title of the document of which the imported file was created

  Creator: Application in which the imported file was created

  Date: Date on which the imported file was created

  Type: What type of file was imported (Comp. / Separated)

- **Lineart Color Controls**

  * *Overprint*: Overprint defined in the imported file is detected. Overprints in a document could indicate that the file may already contain some trapping.

  * *Custom Colors*: Using this control, you can be notified when and where a custom color is used in the imported file.

  * *Ink Coverage*: Ink coverage can be checked not to exceed a given percentage, e.g. 300%. This is used to find a common error, like the use of registration color, where simple black was needed.

- **Image Controls**

  This category contains all controls to avoid most common errors in images.

  * *Resolution*: if the resolution of all images used in the imported file is bigger or smaller than 72, 300, 1000 ppi or a freely entered value, a warning will be generated. This can point out low res im-

ages, or images with an excessive resolution. Very important to know here is that ArtPro takes the scale factor of an image into account. The real resolution is the scan resolution divided by the scale factor in % and multiplied by 100.

The real resolution of a 300 ppi image scaled to 200% is 150ppi. The real resolution of a 72 ppi image scaled to 20% is 360ppi.

* *Color*: Images in the specified color space (RGB, CMYK, LAB, Separated or grayscales) can be found. This could also be very useful, because ArtPro does not support any RGB images.

* *Links*: With the Link settings, OPI or EPS comments can be checked:

OPI Comments: indicates if OPI comments were encountered in the imported file

OPI Recognized: indicates if the found OPI comments were used

EPS Linked: indicates if linked EPS files were encountered in the imported file

EPS Imported: indicates if these found EPS files were imported (instead of being placed)

- **Object Kind Controls**

Object controls offer the possibility to point out objects smaller or bigger than a given value, e.g. to avoid hair lines or small text printed in flexography.

* *Text*: text smaller or bigger than 12pt, 6pt or any entered value can be looked up and reported.

* *Strokes*: strokes can be checked for size to be bigger or smaller than 2 mm, 1 mm, 0.5 mm or a user defined value.

- **Text Controls**

Text controls contains 3 criteria for font control:

* *Font Missing*: A criteria can be set to search for missing fonts during import. ArtPro will report if no font information was found at all, meaning the printer as well as screen fonts were missing.

* *Font Name*: If a font, used in the imported PS or PDF file matches the name entered here, there will be a warning. This way, the system can notify the operator when for instance, a courier is used in a file, for this is often a replacement font.

In the definition of the font name, a wild card can be used. If you enter Cour*, all font names starting with cour will be found, including courier bold, courier italic, etc. The name is not case sensitive.

To add controls to the list, double click on the control, or select it and click on the button with the arrow to the right. To remove controls from the list, select it and click on the button with the arrow to the left.

* *TrueType*: checks if TrueType fonts were used in the imported file.

- **Transparency Controls**

    Transparency controls contains 3 criteria:

    * *Blend Modes*: A criteria can be set to search for used blend modes.

    * *Opacity*: If an opacity higher, lower or equal to the entered value is encountered. If set to "Lower than 100%" is set, all objects with an opacity other than 100% will trigger the control.

    * *Opacity Masks*: checks if Opacity Masks were used in the imported file.

- **Preflight Report**

    The Preflight Reports allow to get info from the PDF Preflight Reports. This of course only applies on importing PDF files that were preflighted.The Cruise Controls that can be used, are the 3 levels of Preflight report: fixes, warnings and errors.

    Keep in mind that Bounding Boxes for preflight entries will only be available if the file was preflighted or re-preflighted during import, with the "Get All Bounding Boxes" option on (see above)

7.6. Import Picture List

With *Import Picture List* it is possible to import an ASCII text file containing information on name, position and size of the bounding box of placed pictures.

These Picture List files can be created in ArtPro, using the *Export Picture List* function (see the ArtPro Manual) or from any other application, if the ASCII text file has a construction as shown in the example below.

If not defined in the file, the placing is done on the box defined next to Use Box, centering the image on the bounding box.

The other options are the same as for opening an ArtPro file (see 7.3. Open ArtPro File on page 185)

```
ArtPro Picture File V1.0
units      mm
size       1005.72826.63
Bambolina1 -1.99 -1.99 142.4 126.990 16    32    TrimBox
Bambolina1 -1.99 125   142.4 125   0 16    32    TrimBox
Bambolina1 -1.99 250   142.4 125   0 16    32    TrimBox
Bambolina1 -1.99 375   142.4 125   0 100   60    TrimBox
Bambolina1 -1.99 500   142.4 125   0 16    32    TrimBox
Bambolina1 -1.99 625   142.4 126.990 16    32    TrimBox
Bambolina1 140.41-1.99 140.41126.990 16    32    TrimBox
```

```
Bambolina1 140.41 125      140.41 125     0   16    32    TrimBox
Bambolina1 140.41 250      140.41 125     0   100   60    TrimBox
Bambolina1 140.41 375      140.41 125     0   16    32    TrimBox
Bambolina1 140.41 500      140.41 125     0   16    32    TrimBox
Bambolina1 140.41 625      140.41 126.99  0   16    32    TrimBox
Bambolina1 280.83 -1.99    142.4 126.99   0   16    32    TrimBox
Bambolina1 280.83 125      142.4 125      0   100   60    TrimBox
Bambolina1 280.83 250      142.4 125      0   16    32    TrimBox
Bambolina1 280.83 375      142.4 125      0   16    32    TrimBox
Flatten    421.23 0        292.24 413.32  0   16    32    TrimBox
Flatten    421.23 413.32   292.24 413.32  0   16    32    TrimBox
Flatten    713.47 0        292.24 413.32  0   16    32    TrimBox
```

7.6.1 Construction of a Picture List File

- ArtPro Picture File V1.0

- Units

- Size; the job size, in the unit set above.

- Filename; when importing a picture list, Nexus will place the pictures described in the *Picture List* file, if the files are in the same folder as the picture list. If not, ArtPro will prompt for the specific file. If the file is found in the folder or a file has been selected by the user, the picture will be applied on the path, placing its center on the center of the bounding box.

- Position of the bounding box; the position of the top left corner of the bounding box is defined. The first value is the vertical distance from the top left corner of the job size, the second is the horizontal distance.

- Size of the bounding box; the next two values define the vertical and horizontal size of the bounding box.

- Rotation; the rotation can be 0, 90, 180 or -90 degrees.

- picture center offset, defining where to center the image, based on the topleft corner of the bounding box.

- Page box to be used.

7.7. Vectorise

This activity will vectorise a TIFF file into vector paths in an ArtPro file which can be saved to disk using the Save ArtPro File activity.

This activity only supports TIFF files, but these could be any type of TIFF file (B/W, gray, CMYK, RGB, …) with or without CCITT Group 4 compression, LZW compression or PackBits compression.
The quality of vectorization is obviously dependent on the resolution and quality of the TIFF image (e.g. lineart scan). The scan resolution in the window can be set to a value but is irrelevant for the actual

vectorization process. It is however relevant for the additional actions performed, e.g. reduction factor, straighten margin and dirt margin

The vectorization is controlled by the parameters Reduction Factor, Straighten Margin and Dirt Margin. The Precision popup menu contains preset values for above parameters, depending on how close the resulting vectors need to be to the original data.

7.7.1 Reduction Factor

smoothens the paths, the higher the value, the smoother the paths, however if the value is too high there will be not enough points level to ensure a smooth curve. A value of 0 does not apply any smoothening

7.7.2 Straighten Margin

specifies the maximum deviation allowed between the path and the pixels, this will reduce the noise on the paths by replacing them with straighter paths. A larger value will result in straighter curves but more deviation from the original paths. A Straighten Margin of 0 and a Reduction Factor of 0 will result in pixel per pixel replication in the paths. (this is identical to the Exact setting in the Importing Activity). The units of the Straighten Margin can be set in scan pixels, inch, mil, pica pt, PS pt, cm, mm or internal units.

7.7.3 Dirt Margin

depending on the setting (default 2) all paths resulting from scanning dirt will be removed. In this case, all black or white areas on the original smaller than 2 by 2 scan pixels will be filtered away during vectorization.

7.7.4 Greyscale Threshold

In order to vectorise non black-and-white TIFFs, the colors are first converted to grayscales. The threshold determines which values of the grayscale will be converted to black or white. The default value for the threshold is 50%.

gray values darker than the threshold value will be considered as image and values lighter than the threshold value will not be considered as image. So if the threshold is higher, more gray areas will become white. You will notice that in this case, the higher the threshold, the more white the image will be.

Original Image   Treshold 50%

Treshold 25%   Treshold 75%
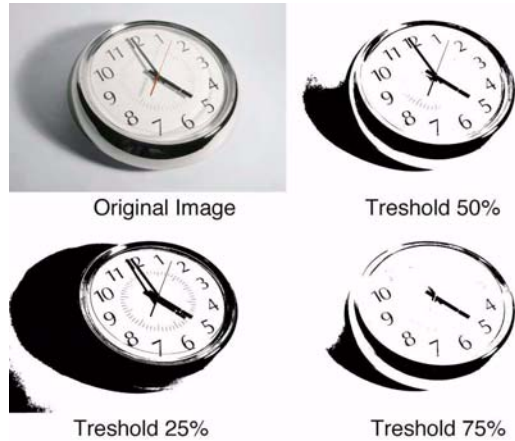
7.8. Close ArtPro File

This activity will remove the currently open ArtPro file from Nexus memory. Note that EVERY NexusImport or NexusProcessor workflow needs to be terminated by a Close ArtPro File activity.

When building a NexusImport or NexusProcessor workflow that does not contain a Close ArtPro File activity, the system will issue a warning upon closing of the workflow. Click the Cancel button and make the necessary adjustments.

Clicking the OK button will merely close the warning window, it is up to the operator to go back to the workflow and add the Close ArtPro File activity at the appropriate location. Failing to do so will result in wrong output, since data will remain in memory, Nexus will continue to process the different pages and documents on top of each other until running out of memory.

7.9. Export PDF

This activity will convert the ArtPro file which is in the memory of Nexus to a vector PDF file. Default this PDF file will be written in the job directory. If the PDF file needs to be written to another location the Copy File Activity should be used after the Export PDF activity.

The Export PDF dialog is built based on different sets of settings or Flavours: "For Press", "For inPDF", "For Viewing", "Normalised PDF" and "JDF". The settings for each of these flavours can be changed.

"inPDF" is used to create inPDF files. For more information on inPDF, we refer to the inPDF documentation.

Next to the flavour, an indication to the compliancy is given: this shows that, based on the settings, the file will be PDF 1.3, 1.4, 1.5 or JDF compliant.

7.9.1 Placed Files (S&R)

When outputting PDF of a file containing placed EPS, this EPS will be placed in the PDF file as a PDF XObject. This will work on certain RIPs. The Rip must accept PDF XObjects containing PostScript. Nexus Rip for example, can handle these objects.

Placed DCS will only work with Separated PS Output, and not when outputting PDF

7.9.2 Load settings from XML

Using a file dependency from a Select File activity selecting an XML file, the settings from that XML file can be loaded in the Export PDF activity, overwriting the settings. The XML file can be saved e.g. in ArtPro, using the Export PDF Flavor option.

7.9.3 Normalized PDF

With the Normalized PDF flavour you can output PDF files that can be opened and edited in PackEdge, Automation Engine, etc.

- **Normalized PDF Options**
  When using Normalized PDF as flavour, some specific functions will be used, and some general options will be changed.

- *Generate Normalized PDF*
  With this option in the General tab, the PDF file structure will be Normalized PDF, and XMP information will be included in the PDF file.

- *Images*
  Images will be included as Esko links, and also embedded at low resolution. This means image downsampling is set at 96 dpi, the Link option is set to "Esko" and the "Embed Images" option is on.

- **Normalized PDF Restrictions**

- *Screenings*
  If no screening is defined on all or some objects, a default screening will be applied to these objects. The defaults are:
  - ruling: 120
  - dotshape: simpledot (round)
  - angles C: 15, M:75, Y:0,B:45 any other : 45

- *PANTONE inks not in Esko color books:*
  These inks will be saved as unregistered inks.
  Inks found in Esko ink books, will get the correct ink book reference.
  Ink type is kept (technical, opaque, varnish, normal)

- *Placed or repeated Files*
  Placed or repeared files (Artpro, normalized PDF) will be expanded in PackEdge.

- *No barcode information.*

- *No font file information.*

- *Text*
  All text is saved and the font is subsetted and embedded. This will result in real text in Esko Software.
  However, 2-byte fonts are always vectorized when exported to any PDF flavour in Artpro.

- *Images:*
  Images will keep their links if possible (most TIFF, JPEG and PSD files). This is also the case for mapped images.
  Some image formats such as DCS images, PSD with multiple alpha channels, TIFFs with extra channels (often generated by Art-Pro PS/PDF import) are not supported or incompatible with the Esko Software. These images will be embedded or will be generating a .ct fle on Esko software - depending on the settings.

7.9.4 General settings

- **Generate Normalized PDF**
  see 7.9.3 Normalized PDF on page 218

- **Generate Separated PDF**
  With this option on, the ArtPro document will be exported as a separated PDF, in which each page represents a separation of the ArtPro document. It can be combined with the "Add Composite on Page 1" option.

- **Add Composite on Page 1**

  This option is available when Generate Separated PDF is on. If enabled, the first page of a separated PDF will contain a composite proof of the ArtPro document. All subsequent pages will represent a separation used in the ArtPro document.

- **Add Notes**

  With this option on, all ArtPro notes (see Nexus Edit) are included in the PDF file and will appear in Acrobat or the Reader as normal, editable PDF notes.

- **Add Non Printing Layers**

  If switched on, layers set to non printing, are exported into the PDF file. With this option off, these layers are not output, so the PDF file contains only layers with the Print option on.

- **Include 1.5 Layers**

  PDF 1.5 allows the use of layers. If the option is switched on, the ArtPro layers will be put in the PDF file as 1.5 layers. The compliancy will be set to PDF 1.5. This will allow you to switch layers on/off in Acrobat.

- **Output Fully Transparent Objects**

  Without this option, fully transparent objects are ignored. With this option on, they will be output anyhow.

- **Page Layout**

  The Page Layout section allows to set Orientation, Mirror and Distortion.

  The Orientation can be set to portrait, turn right, turn left or upside down. It defines the direction in which the file is put on film or on paper. Choosing portrait will output the file in the upright position, turn right will rotate the file 90° and turn left will rotate it -90°.

  By activating Mirror, the job will be mirrored before exporting, resulting in a wrong-reading output.

  Distortion is defined as a percentage of the jobs original dimensions. This distortion is specifically important for flexo jobs. On mounting a flexo plate on the press, it is stretched out in one direction. By making the output slightly smaller than needed, we compensate for this distortion. The original dimensions of the ArtPro file remain unchanged.

  Positive values make the job bigger and negative values make the job smaller. E.g. Vert. distortion = -2.35% will make the output 97.65%.

  In this way you can also scale the output: e.g. entering -50% for both Vertical and Horizontal Distortion will output the job at half of its original size.

- **Add Thumbnail**

  With this option on, a thumbnail will be created of the file, a small preview, that can be shown in thumbnails in Acrobat. With this option off, the thumbnail in Acrobat will be gray.

- **Add Standard Preview**

  Preview can be defined by resolution (default 72 ppi) or by max size (in kb). This can be useful when creating a PDF of a large size S&R, of which the preview at 72 ppi would be several Mb.

Note: Standard previews can not be retrieved in the Nexus manager when Nexus is running on Windows. Separate and thumbnail previews can be viewed in the preview section of the job.

- **Add Separated Preview**

  It is now possible to save a separated 72dpi preview in the PDF file. This non-standard preview can only be used by other Artwork Systems software, such as ArtPro S&R, ...

- **Use Anti-Aliasing**

  Allows to define if Anti-Aliasing needs to be applied when calculating the preview.

- **Previews & Page Boxes**

  Thumbnails are created using the Media box.

  Separated previews are also created using the Media box.

  The Standard Preview is based on the Art box, in order to be compatible with other applications. This implies that the Standard Preview will not show any bleed.

  For JDF output, these settings will be used for all PDF files created.

- **Marks**

  This option allows to add marks into the PDF file. The marks button and option work in exact the same way as in the Generate Marks Activity. See 8.27. Generate marks on page 262.

7.9.5 Optimize settings

- **Use Picture Caching**

  Picture Caching makes the output faster by keeping all images that are put in the PDF file in the RAM, until the complete file is written. This keeps Nexus from having to read an image multiple times from the hard disk, if it is used multiple times in the file. The condition is that you have enough RAM on your machine. This is very useful if images are stored on a remote file server

- **Output Gradients as Images**

  If this option is switched on, all gradients will be converted to images instead of including them in the PDF file as PDF Shadings.

- **Compress Page Description**

  When this settings is switched on, the PDF file will be compressed. This option is switched on by default.

- **Optimize White Objects**

  When this settings is switched on, all white objects that do not influence the final result, will be removed. This option is mostly usefull when outputting Separated PDF, however it can also be used for composite PDF files, especially if certain separations are disabled for output.

- **Include Screening**

  If the option Include Screening is on, Nexus Extended Screening and PostScript Screening info will be saved in the PDF file. Nexus screening is not included. This Screening info can be used e.g. by the PDF Workflow functionality in Nexus.

- **Screening Registration**

  The Screening Registration option allows to control the screen registration of the one ups to be used in a Step and Repeat file in FlexRip.

  When set to "Continuous", the screening will be calculated over the full S&R. When set to "reset for each external file", the screening origin will be reset for every placed one up. This can be used if for example you would like to have exactly the same screening rosettes in all placed one-ups.

- **Generate JDF Output**

  JDF Output is an optimization system for outputting S&R of PDF files. When outputting a Step & Repeat to JDF, multiple files will be generated.

  First of all, the one up file(s) will be exported to PDF file(s). If the One up already was PDF, the file will be just be copied, unless the option "Copy File" is off. Second, one or more PDF files will be generated containing all elements that are on the Repetition: registration marks, test strips, extra info, etc. Items that are grouped, will be in the same file. Third, a JDF file is created, containing the positioning of all these PDF files.

- **Copy PDF**

  If the Copy PDF option is on, the original PDF files in the S&R will be copied to the output folder of the JDF Output. If the option is off, these single PDF files will not be copied, and the JDF will contain a link to their original location.

- **Target Size**

  This option can be used to ensure that the size of the PDF file doesn't exceed a certain size (e.g. 5000 kb) This can be used for files that need to be sent e.g. by e-mail. In order to keep the file size below the maximum size, images may have to be downsampled and/or compressed more than set in the dialog. Do not use this for files that will be send to Press!

- **Split Long Paths**

  Just like PS output, paths with many anchor points can be split up an parts. The more parts that need to be exported, the longer it will take. The default settings is 500.000 points.

7.9.6 Text settings

- **Vectorise text**

  Before exporting, ArtPro will convert all text to paths to avoid font problems at a later stage. When this option is switched off, the text will be in the PDF file as real text. If text is not set to be vectorised, it will always be embedded.

  Japanese 2-byte characters are always vectorised.

- **Subset Embedded fonts...**

  Subset Fonts defines wether fonts should be embedded as subset if only a part of the characters are used. How much of the font characters should be used before the font is embedded completely, can be set in the *When percentage of characters used is less than* field. If this value is set to 100%, a subset will be created for every font which is not used completely.

7.9.7 Color settings

- **Force Opaque Inks to knockout**

  If the option Force Opaque Inks to Knockout is on, overprints will be flattened first, so a visually correct result is generated, but the resulting PDF is NOT OK for printing!

   In order to warn that the result will be correct visually, but not for print, a red exclamation mark is shown when switched on.

- **Fail on Nonseparable Blend modes**

  If the file to be exported contains Nonseparable Blend modes (Hue, Saturation, Color, Luminosity), the file will fail if this option is switched on.

  These Nonseparable Blend modes operate on a 3 component color space. This means that to calculate the resulting color, CMYK needs to be converted to 3 components, the Blend needs to be calculated, and the result needs to be converted to CMYK again. However, no instructions are given on how these conver-

sion from one color space to another should happen. This results in different behaviors and different color results in different applications / RIPs

- **Exclude Separations**

  This option can be used to exclude separations from the output. By clicking the Options button, the Output Separations dialog is opened. By Adding a separation (click the + button and define its name. Wildcards can be used), you can exclude this separation for output. By selecting an entry in the list and clicking the - button, you can remove it from the list.

  The Search Unused Separation setting at the top, will exclude separations that are not used. It will only turn separations off, separations excluded earlier will not be removed from the Exclude list, even if they are in use. The Search Unused Separation option does not take registration color into account.

  The Exclude separations can not be used in combination with the Include separations option.

- **Include Separations**

  This option can be used to include only the selected separations from the output. By clicking the Options button, the Include Separations dialog is opened. By Adding a separation (click the + button and define its name. Wildcards can be used), you can include this separation for output. By selecting an entry in the list and clicking the - button, you can remove it from the list.

  The Include separations can not be used in combination with the Exclude separations option.

- **Color Management**

  If a profile has been defined at the time of importing or opening a file in the workflow, it is possible to override the settings for output (e.g. color profiles for proofers or separated output) in this menu. For a full description of color management in Nexus, please refer to Chapter 12. Color Management on page 428.

- **DotGain**

  This allows to apply a dotgain file on the output. For a full explanation on Dotgain, we refer to the ArtPro manual, in the Screening section.

  The applied dot gain curve will be applied to the PDF as a transfer function in the Graphic state.

  The dot gain curve for placed files will work without problems with placed ArtPro files and PDF files coming from ArtPro or Nexus Processor. Placed PDF files from other application will work fine, as long as they don't define their own dot gain curve inside the PDF, as the embedded curve has priority.

If a placed PDF file coming from ArtPro or Nexus Processor already contains a dot gain curve, a warning will be generated on PDF Output.

- **Always Generate CMYK Separations**

  This option will include all CMYK separations to deviceN color spaces as soon as one of the CMYK separations is used. This option is only useful for customers that use a GMG color manager on their PDF files.

- **Flattener**

  The Flattener is used to translate transparencies and blends. This is necessary when outputting PDF 1.3 compliant. More on the Flattener, including the Flattener Options, can be found in 8.20. Flatten Transparencies on page 257.

7.9.8 Images settings

- **Use Image Downsampling At**

  All images with a resolution higher that this value, will be resampled. This allows you to create smaller PDF files, e.g. for a quick soft proof.

- **For Images Having at Least**

  If this option is on, only images with a resolution higher than the entered resolution, will be downsampled to the down-sample resolution. In the example above, when switching on the option, images with a resolution below 450 ppi will remain unmodified, while images with a resolution above 450 ppi will be downsampled to 300 ppi.

- **Use Averaging When Downsampling**

  This option is the same as in the more print settings. When it is activated, image quality will be better, but the output will be slower. The difference with PostScript output is that CCITT images are averaged too when outputting to PDF.

- **Apply on 1 bit images**

  If the option is enabled, downsampling will also be applied on 1 bit images.

- **Image Compression**

  No Compression, Lossless compression (Flate), Maximum Quality, High Quality, Medium Quality or High Compression. None means that all compression is taken off. Compressed images are decompressed in the PDF file. A lossless compression means that the file will still be complete after decompression. There will no loss of quality. In the three other cases, the files are compressed with a JPEG compression. A higher compression means smaller files, but worse quality and vice versa.

- **Include RGB preview of images**

  This will add a lowres 72ppi preview of the large images inside the PDF. These previews will be used by some Acrobat plug-ins, to speed up previewing files.

- **Image Clipping**

  The Image Clipping option allows to force Nexus to clip images to the smallest size inside the clipping path. Nexus will also calculate to include the full picture if clipping doesn't give any benefit, i.e. if the sum of the image parts is close to or bigger than the size of the full image. A full image will only be included once in the PDF file, even if it is placed multiple times.

- **Links**

  The Links option allows to include OPI comments into the PDF file. You can choose between None (no links), OPI links or Esko links. The option Embed Images allows to define if images with OPI comments should be embedded as well.

  OPI comments can not be used in e.g. Illustrator, unless the InPDF plug-in is used. For more information, see the InPDF documentation.

- **File & Fonts settings**

  This option allows to open the Root Folder, Folder Mapping, Fonts Folder and Color Management settings. These are the same as when opening an ArtPro file. See 7.3. Open ArtPro File on page 185.

7.9.9 Certified PDF

If the "Output profile" file is selected then PDF file is preflighted after being exported. The Output profile can be cleared by shift-clicking the Browse button. If "Certified PDF Enabled" is unchecked, then regular non-certified PDF file is saved and no new session is started.

The "Incremental save" option will work only if the last Certified PDF (i.e. the imported Certified PDF or the last Exported PDF) is still available. The option means that the previous Certified PDF file's contents will be merged with the exported PDF, so that "rollback" the PDF document to the previous session will be possible. Using this option can result in a large PDF file.

To keep both the PDF as the ArtPro file in a certified ("green") state, it is necessary to save the ArtPro file after the Certified PDF Export.

7.10. Print to File

The Print to File activity will convert the ArtPro native file format to a composite or separated EPS file, depending on the Device Type that has been chosen.

Depending on the workflow, the Print to File activity can be simply followed by a Close File activity, an FTP activity, a Copy File activity, or a Convert EPS to PS and a Send over PAP activity. This will be depending on what device the file needs to be printed to and how the device is physically connected to Nexus. This will be described at the end of this section.

7.10.1 Load settings from XML

Using a file dependency from a Select File activity selecting an XML file, the settings from that XML file can be loaded in the Print to File activity, overwriting the settings.

7.10.2 General Concepts

- **Flattening**

    When creating a PS file, the ArtPro file is flattened if needed, as PS does not support blend modes, opacity, etc. The settings of the Flattening Options are used. For more info on Flattening, see 8.20. Flatten Transparencies on page 257.

- **Composite PostScript®**

    Composite PostScript means all information is calculated into a single page, unseparated PostScript file.

    In a Composite file, placed EPS files are copied unmodified. This means that if you work with DCS for instance, the placed low resolution will be sent to the printer. Both TIFF files and ArtPro files are converted into PostScript at full resolution (or any resolution defined by other print settings).

    There are mainly 4 ways of generating PostScript for Printers/Proofers.

- *Using DeviceN (Composite L3 Printer)*

    When outputting composite PostScript using the Level 3 DeviceN comments, a composite PostScript is generated, containing all transparencies and spot colors. If this composite output is handled by a RIP, capable of handling these level 3 commands, a correct output can be achieved. This option is preferred if the Proofer/Printer can handle it.

    Please note that composite output, even when using the DeviceN command, does not include dotgain or screening information.

- *DeviceN Off, Use Setcustomcolor OFF*

  The complete job, if necessary, will be flattened to remove all overprints and transparencies, and will convert all PANTONE™ colors into CMYK.

  The result will be a flattened CMYK composite PostScript file, which can be send to any color proofer.

- *DeviceN Off, Use Setcustomcolor ON*

  This will create a flattened file, flattening all CMYK overprints and blend modes.

  The resulting PostScript file will contain CMYK objects in combination with separation color objects. This PostScript file will still contain overprinted objects. Not every color Proofer can handle this.

- *Bitmap Proofer*

  This option will force Nexus to Rip the complete job into a CMYK image at a given resolution, and generate a PS file containing only the Ripped CMYK image.

- **Separated PostScript®**

  If you make a file with All Separations, a multipage PostScript file is created. Each page contains black and white information describing the separation of one ink. So the file contains as many pages as there are inks in the ArtPro file.

  If you make a file per separation, a single page PostScript file is created containing the black and white information of the film (ink) you asked for.

  Placed art in separated output:

  - EPS files containing CMYK, grays and custom colors are separated by ArtPro, using "separation code". Some EPS files however, are not suited for this separation code. Therefor an alternative separation code is provided (by switching on the "simple separation code" option) for these situations. If you work with DCS files (or DCS-2), ArtPro will replace the low resolution file by the high resolution separations.

  - TIFF CMYK files are separated and converted into PS.

  - ArtPro files are converted as normal, this means any picture in the file will be expanded with high resolution.

  - OPI: PostScript output of TIFF files always contains OPI comments (as specified in Aldus Open Prepress Interface Specification 1.2 and 1.3). This makes it possible to work with low resolution images on the Mac and in proofs (= unseparated output), and high resolution images on film (= separated output). Even if the TIFF file type is not supported (not CMYK), OPI

comments are generated.

Examples of TIFF files which are supported by OPI are RGB and palette TIFF files. These files can be placed in ArtPro, you will see them on screen and you are able to make a color proofer output. However, you will not be able to make a separation of these TIFFs, unless you use OPI replacement.

- **Placed Files (S&R)**

Placed PDF 1.3 files are converted to PS during output. Placed PDF 1.4 files cannot be converted to PostScript Level 3, and will generate an error "Cannot convert PDF 1.4 into PostScript". Note that the distinction between PDF 1.3 and 1.4 is not done on the header, but on the presence of PDF 1.4 functionality.

7.10.3 Device Types

- **Color Proofer**

Color Proofer is the standard Composite PostScript output to send to PostScript proofing devices.

- **Color L3 Proofer**

Color L3 Proofer generates composite output, using Level 3 commands such as DeviceN and shadings. This results in composite output, containing all spot colors, overprints, etc. Screening and Dotgain Compensation is not included.

- **Separated Proofer**

Separated Proofer is a device to print separations on a color proofer or e.g. a LaserWriter. Although it is sent to a Proofer, the output is separated.

- **Bitmap Proofer**

This output, originally developed to be able to output overprints and transparencies, has become obsolete because of the L3 commands. With the Bitmap Proofer output, the ArtPro file is RIPped into image data which is sent to the proofer, preceded by a PostScript header and followed by a PostScript footer. The image data consists of CMYK information. This output can get quite substantial, depending completely on the output resolution and the file size.

In the More Print Settings, in the RIP tab at the bottom you can define the desired resolution. The ideal resolution is equal to the resolution of the proofer device you are using.

- **Custom Proofer**

Custom proofer is the output device for proofers with all "More Settings" available. Any Device type will actually have a number of preset "More Settings", of which some can be modified, and

others are grayed out. Custom Proofer will have the preset "More Settings" from Color Proofer, but all settings will be available for modification.

- **Generic ImageSetter**

    This is the default device for the output of Separated PostScript, for a general type of imagesetter or platesetter.

- **Agfa**

    To generate output for an Agfa imagesetter, choose Agfa in the Device Type list. The type of PostScript generated for Agfa is separated PostScript.

- **Barco RipScript**

    This device type generates separated PostScript, to be exposed through Barco RipScript.

- **Barco TransScript**

    This output generates EPS files which can be sent to an old Barco system, through Barco TransScript. Note that these files are not standard EPS files, and are not to be used in applications other than Barco TransScript. For more information on procedures how to output through Barco TransScript and the limitations of this method of output please refer to the ArtPro manual.

- **Creo (Layout / Single Job)**

    These two Devices make it possible to use OPI server functionality for Step & Repeat on Creo Servers. Whereby, high resolution image data is stored on the server and a preview version is stored with the original file. At output the server automatically replaces the preview version with the high resolution data, according to the OPI comments contained in the Step & Repeat Print file. Printing from Nexus will therefore be considerably faster, as network data transfer between Nexus and the Creo server system is reduced to a minimum.

- *Procedure*

    1. Print the single job in the Print menu with the option Creo (Single Job) and send it through to the Creo server.
    2. Create the S&R file of the single original ArtPro job and save it.
    3. Print the repetition file to Creo (Layout)

    Besides the OPI possibilities, the Creo output contains DIG comments, allowing Print files from Nexus to be used in the VPS, the Creo Virtual Proofing System. Therefore, even if the OPI Step&Repeat is not used, Creo Layout should still be used to enable the VPS.

- **Crosfield**

Crosfield output is based on Generic Imagesetter, but fine-tuned to make the Crosfield OPI work. The setting Include Gradations comments allows Crosfield to put gradations (converted to CTs by Nexus) in the Lineart level (at high resolution), and CTs in the CT level.

- **DCS-2 Single File / DCS-2 Multifile**

The DCS-2 output creates a DCS file, a separated file format, including all separations, and a preview. With Multifile, the result will be as many files as there are separations, and an additional preview file. For Single file, separations as well as preview are contained in one single file.

The DCS files can be used to be placed in other applications (e.g page layout or imposition applications,...), or to use with OPI servers when printing Step & Repeat files or from imposition applications. Hereby, the high resolution image data (DCS 2 file) is stored on an OPI server and a preview version, generated by the OPI system is stored with the original file. At output the OPI server automatically replaces the preview version with the high resolution data, according to the OPI comments contained in the Step & Repeat file or the imposition file.

To print Step and Repeat files through Nexus from one-up ArtPro files follow this procedure:

Save the single job in the Print menu with the option DCS-2 and send it through to the OPI server.

Create the Step & Repeat file of the single original ArtPro job, either in a step and repeat workflow or manually on an ArtPro front-end station and save it.

Print the repetition file to Generic Imagesetter in the Print menu, with the option Replace Placed ArtPro by OPI in the "More Settings".

- **Delta Technology**

This output device is only to be used for repetitions. For every group, a Delta list is created. In the case of S&R, a delta list will be created for a single label. The next time the same Delta list is used, the RIP only has to place it, resulting in a very high S&R optimization. To use this S&R optimization, the clipping box has to be a rectangle. For S&R Tabular, this is no problem, but nested CFF2 repetition can cause troubles.

- **Linotype-Hell**

LinoType-Hell output is based on Generic Imagesetter. This output supports the Automatic Page Positioning feature from Linotype-Hell.

- **Optronics**

  The Optronics is the same as Generic Imagesetter output.

- **Nexus**

  This Device Type should be used when printing from NexusProcessor to NexusRIP workflows as it will result in separated PostScript optimized for NexusRIP. This device is used to print single documents (to a low resolution link file) as well as S&R or imposition data with links. For more information, please refer to the section on Connecting NexusImport and –Processor workflows with NexusRIP workflows.

- **Purup**

  Purup is based on the Generic Imagesetter output, but fine-tuned for use with the Purup OPI system, Imagelink, which is based on low resolution DCS files.

- **Quark Separable EPS**

  To generate an EPS file that can be separated by Quark XPress® you can choose Quark Separable EPS as Device Type. As this is a composite output, this has some serious limitations concerning transparencies. Therefore, DCS-2, L3 Proofer or PDF export is more advisable.

  For more information on the Quark Separable EPS file please refer to the ArtPro manual.

- **Scitex Separated / VIP / PCF**

  The best way to send to Scitex is using separated output, as composite output has too many limitations. The only reason to use composite (VIP) output, is for APR, Scitex OPI system, on the VIP rips, or if the files are to be handled further on the Scitex systems.

  To generate composite output for the Visionary™ Interpreter for PostScript® from Scitex, choose Scitex VIP in the Device Type list.

  Scitex VIP is a computer application which converts PostScript files into the Scitex formats. The Scitex VIP output always makes PostScript output to a file, as it is not a real device but a computer application.

  In some cases the VIP can be selected in the chooser, in other cases VIP has to be opened and the PostScript file loaded into the VIP. This depends on the customers' configuration. The type of PostScript generated for Scitex VIP is composite PostScript.

  The composite output is then to be separated by the Scitex RIP. Please bare in mind that composite PostScript is much more limited when it comes down to supporting transparencies, or not standard ArtPro functionality like mapped pictures, etc.

Output to Scitex PCF is specifically meant to output step and re-peat data to Scitex's native format.

For more information on these device types, please refer to the ArtPro manual.

- **Screen**

The Screen is the same as Generic Imagesetter output.

- **Think Laboratories**

A Generic Imagesetter output, fine-tuned for Think systems.

- **Custom ImageSetter**

Custom ImageSetter is the output device for imagesetters with all "More Settings" available. Any Device type will actually have a number of preset "More Settings", of which some can be modi-fied, and others are grayed out. Custom ImageSetter will have the preset "More Settings" from Generic ImageSetter, but all settings will be available for modification.

7.10.4 Other settings

- **Paper Size**

The paper size popup includes the different sizes as indicated in the snapshot. Please note that From Page Setup is irrelevant in Nexus workflows. If a PPD needs to be assigned, it should be done through the Convert EPS to PS activity.

From Media box will always use the Media Box. From Page box will use the active (i.e. the last selected) page box. If any objects are outside the selected page box, a warning will be generated.

When choosing "From Job" (default), the active page box is used, enlarged if necessary to fit all objects.

Following sizes are included in the Paper Size popup:

- A4: 210 x 297 mm
- A3: 297 x 420 mm
- US Letter: 8.5 x 11 inch
- US Legal: 8.5 x 14 inch
- Tabloid: 11 x 17 inch
- Tabloid extra: 12 x 18 inch.

- **Layout**

For proofer output you can choose between center, fit always, fit large paper or tile output. Center will position the job centered on the paper size, taking into account the indicated Distortion for size. A distortion of 0% will result in a true size job output. If the job is bigger than the indicated paper size, it will be clipped on the edges. Fit Always will enlarge or reduce, so that the ArtPro file matches the paper size. Fit Large Paper will fit large format ArtPro

jobs to smaller paper sizes, but will not enlarge the job when the paper size is larger than the job size. Tile is used when a job is larger than the paper size. It will thus divide the job over several pages, with the indicated Tile Margin and Tile Overlap. If you do not want to use the complete paper size, you can define a Tile Margin. The Tile Overlap indicates how much of the tile edges will be printed on the next page, as to create an overlap area.

- **Orientation**

  The Orientation can be set to portrait, turn right, turn left or upside down. It defines the direction in which the file is put on film or on paper. Choosing portrait will output the file in the upright position, turn right will rotate the file 90° and turn left will rotate it -90°.

- **Mirror / Negative**

  If you put a check next to Mirror, the job will be mirrored before exposing, resulting in a wrong-reading output.

  Negative allows outputting separations as negatives.

  Note that these settings will be additional to the settings on the NexusRIP activities, e.g. a Negative setting on Print to File and a Negative setting on the Assemble a Screen Page Sub activity will result in a Positive output. The same is true for Mirror. Equally note that the imagesetter or platesetter device can also have a negative and mirror setting.

- **Output**

  This allows to define the name of the output file, using the File Naming Template (see 3.6. File Naming Template on page 132).

- **Title**

  The Title allows to define the %%Title comment in the PostScript file. This comment can be extracted, e.g. in a NexusRip workflow, to extract the job name instead of the PostScript file name. (see 3.6. File Naming Template on page 132).

- **Distortion**

  A document can be output with a vertical and/or horizontal distortion. It is defined as a percentage of the jobs original dimensions and is applied to the PostScript file. This distortion is specifically important for flexo jobs. On mounting a flexo plate on the press, it is stretched out in one direction. By making the output slightly smaller than needed, we compensate for this distortion. The original dimensions of the file remain unchanged.

  Positive values make the job bigger and negative values make the job smaller. E.g. Vert. distortion = -2.35% will make the output 97.65%.

In this way you can also scale the proofer output: e.g. entering -50% for both Vertical and Horizontal Distortion will output the job at half of its original size.

- **Clip**

  If the job is bigger than the paper or the film, you may output in parts. If Clip is not active, the complete job is printed or exposed and will thus be clipped on the output when it is bigger than the paper size. When Clip is checked, you can define the tile dimensions by clicking on the Rectangle... button. The tile indicated in the Rectangle dialog will output.

- **Rectangle…**

  Clip Rectangle allows you to define what part of the job should be printed.

- *Page box Clipping:*

  When Page box Clipping is selected, the job size chosen under Use Box will be used to clip the output. The different boxes can be defined in the Job Size dialog

- *Manual Clipping*

  If Manual clipping is selected, the size and position of the part to be printed can be set manually. In the Vertical and Horizontal field, the size of the rectangle to be printed can be entered. If the Lock to Ruler option is on, the rectangle to be printed will move along when moving the ruler (see Move Ruler activity)

- *Automatic Clipping*

  If Automatic clipping is selected, the size and position of the part to be printed will be defined by the job size and the settings of the Divide and Print Part fields.

  Divide: in the Divide field, you can enter in how many parts the job should be split up, both vertical and horizontal.

  Print Part: in the Print Part field, you can define which part of the job should be printed.

- **Marks**

  Besides the *Cut marks*, other objects like registration marks as well as job and separation identification can be added to the file through Generate mark. For the settings, see 8.27. Generate marks on page 262.

- **Separations**

  The separations menu has a dual function, to define which separations have to be output, and to define how separations need to be mapped to other separations. Default the window is blank and the Search Unused Separations option is active. This means

that the system will check which separations are in the document and output separations which are not empty. When there are non-mapped pictures in the file though, all separations will be output.

The Separations window contains two areas, the Separation Mappings area and the Exclude area.

- *Separation Mapping*

  To add an entry to the Separation Mappings list, click the + button, and enter the separation name in the "From" field. By entering the "To" separation, you can remap the separation to another plate. Note that it is equally possible to enter "CMYK", which will allow to convert a separation to CMYK on output without actually modifying the document itself

  The Print icon can be toggled on or off by clicking the Print button.

  An example on the use of the Separation dialog, is in a double burn workflow, where there are 3 different black separations in the file: English Black, Spanish Black, and Graphics Black. In this case, the Graphics Black should be mapped to the English Black as well as to the Spanish Black, hence they will be merged. Seven separations will be output into 6 plates.

- *Notes on separation mapping*

  Mapping of output separations is fully supported for all paint styles. Even placed ArtPro jobs can be merged. e.g. for a layout, containing 2 ArtPro jobs, each with a different spot color, both separations can be merged during output. This is even possible if the jobs contain TIFFs. This is because no merging is done within the placed ArtPro jobs. Note however that remapping is only available for Separated outputs!

  Separating placed EPS- and PDF-files takes into account overprints, PS3 and PDF1.3 vignettes (Illustrator 8 and 9) and Photoshop duotones.

- *Screening for mapped separations*

  When you have a step & repeat file containing multiple jobs and you want to map separation X from job A into separation Y from job B, separation X will still be output with its own screening settings as long as this job (A) does not contain separation Y. When job A contains separation X as well as separation Y, the screening which will be used to output the mapped separation X into Y will be separation Y.

- *Exclude Separations*

  This option can be used to exclude separations from the output. By clicking the Options button, the Output Separations dialog is opened. By Adding a separation (click the + button and define its name. Wildcards can be used), you can exclude this separation for this separation. By selecting an entry in the list and clicking the - button, you can remove it from the list.

- *Search Unused Separations*

  The Search Unused Separation setting will exclude separations that are not used. It will only turn separations off, separations excluded earlier will not be removed from the Exclude list, even if they are in use. The Search Unused Separation option does not take registration color into account.

- **Dot Gain Compensation**

  The Dot Gain Compensation button defines if the dot gain curve(s) selected in the Dot Gain File... menu (see below), has to be calculated on the PostScript output. With this option off, all curves are ignored for output. Dot Gain Compensation is only available on separated Output.

- **Dot Gain File…**

  The Dot Gain File ... button allows you to select a Dot Gain File. The file name of the selected Dot Gain file will be shown on the right side of the button.

  If a Dot Gain File is selected in the Print menu, this Dot Gain File will override all Dot Gain settings in the Screening dialog (e.g. an opened ArtPro file). The exception is a placed EPS that contains a dot gain compensation, in which case both curves are used. A selected file can be removed by clicking the Dot Gain File button while holding down the SHIFT key. Dotgain files are generated in and saved from the screening dialog. (please refer to ArtPro manual for more details)

- **Color Management**

  If a color management profile has been defined at the time of importing or opening a file in the workflow, it is possible to override the settings for output (e.g. color profiles for proofers or for separated output) in this menu.

  For a full description of color management in Nexus, please refer to Chapter 12. Color Management on page 428.

- **Flattening Options**

  When creating a PS file, the ArtPro file is flattened, as PS does not support blend modes, opacity, etc. The settings of the Flattening Options are used. For more info on Flattening, see 8.20. Flatten Transparencies on page 257.

- **File & Fonts Settings**

  The file & font settings will allow to define root folders, folder mapping and fonts folders, similar as in the Open ArtPro File activity (please refer to this activity for a full description). This functionality has been made available in case ArtPro files have been placed in an open job during the workflow, to allow for the retrieval of the linked images or used fonts at the time of printing.

7.10.5 More settings

In this dialog a whole list of Print Settings are available. Depending on the active Device Type the settings are defined automatically, whereby some will be checked by default. For some devices some settings are not accessible (gray) and others can be (de)activated. For Custom Proofer and Custom Imagesetter all the options are available so as to allow specific customized output. The More Print Settings are divided up in 6 categories: Page, Separations, Paints, Optimize, RIP and Preview. For more info please refer to the ArtPro reference manual. At this point we will only explain the most common settings.

- **Page Settings**

  These settings are related to the type of file of the EPS (PS) file that is generated by the Print to File activity (composite versus separated,...), and the comments in the header. Changing these settings may in some specific cases by necessary to have a receiving application or printer recognize the file, or to have the correct type of file generated.

- **Separations Settings**

  These settings determine how separations and page commands are defined in the file. Depending on the Device Type that has been selected in the main Print to File dialog box, these settings will be correctly defined by default. Only in specific cases should changes be made.

- **Paints Settings**

  These settings related to how colors and overprints are defined in the file, and how gradations and images will be handled. The system supports to apply image averaging at the time of downsampling. This will result in better image quality when downsampling has been applied, but will slow down the generation of the PS output.

- **Text Settings**

  These settings determine how text will be handled in the file. Settings can be made to vectorise text, or to embed fonts.

- **Optimize Settings**

  These settings will determine how the PostScript needs to be optimized, and how OPI comments need to be handled in the file, including the use of OPI comments for placed ArtPro files, allowing for a productive Step and Repeat solution. (e.g. with the Creo Layout device)

  The PS Optimize settings include the ability to split long paths (important for output to PS Level 1 RIPs, or for RIPS with limits to the amount of points on a path due to insufficient memory), and the use of picture caching, which will improve output speed when images need to be put into the output multiple times (e.g. when image trapping has been applied).

- **RIP Settings**

  These settings allow for specifying special comments needed to output PostScript from NexusProcessor to a RIP system, including the NexusRIP.

  Important is that NexusProcessor now has the ability to add an XML jobticket (Write Job Ticket) to the PS file, that contains specific information about the job, including the job size, separations, screening used, etc.... This jobticket is then read by NexusRIP and put into the link file when a link file is generated. This will allow ArtPro to display all the information about a specific job (the jobticket) when this link file is placed (e.g. a step and repeat file). For more information and an example please refer to the ArtPro manual.

- **Preview Settings**

  These settings determine the type of preview that will be generated (if any), and if a mask needs to be generated in the preview (e.g. to support transparent views for clipping paths). Note the some receiving systems will not support this preview mask. In these cases the mask can then be switched off, but obviously the file will still output correctly.

7.11. Save ArtPro File

This activity will save the currently processed file to an ArtPro file on disk.

7.11.1 Output

The Template allows to set the name of the file to be saved. See 3.6. File Naming Template on page 132.

7.11.2 Compatibility

The Compatibility allows to choose to save the document as ArtPro 9.x/8.x or as ArtPro 7.5 / 7.0 / 6.5 file, or as ArtPro 6.0 file. An ArtPro document saved in an earlier file format, will not contain version-specific information. E.g. an 8.0 document saved as ArtPro 7.5 document will not contain blend modes. The file will be flattened before saving. See 8.20. Flatten Transparencies on page 257 for more information on flattening.

7.11.3 Include Preview

When switching on With Preview, a (separated) preview is included in the ArtPro file. The Resolution field allows to define the resolution (in ppi) for this preview. Default is 72 ppi.

If the preview is added to the file, it will be shown in the Job Editor, if the thumbnail option is enabled in the Nexus Manager preferences.

7.11.4 Save Hidden Layers

This option defines whether layers with a "Hidden" state should be included in the saved file or not. See also the Layer related activities.

7.11.5 Profiles

Embed entire profile in ArtPro files allows to include the used Color Management profile in the ArtPro file. This can be useful when moving files to another system. The option Don't embed profiles for imported pictures disables embedding profiles already embedded in the pictures.

7.11.6 Flattener Options

When saving as ArtPro 7.5 file, the ArtPro file is flattened. The settings of the Flattening Options are used. For more info on Flattening, see 8.20. Flatten Transparencies on page 257.

7.11.7 Certified PDF Sessions information

The option Include Certified PDF information allows to define if Certified PDF information should be included in the ArtPro file. If the option is on, the information will be included in the file, even when saving as ArtPro 7.5 file. Of course if you open that file in ArtPro 7.5, that info will be ignored.

If the option Save Certified PDF Information is on, the Certified PDF information will be saved in a separate XML document. The File Naming Template is used to define its name and location (see 3.6. File Naming Template on page 132)

More info on Certified PDF can be found in 7.1. Certified PDF on page 183

7.11.8 Flattener Template

If the Flattener needs to save images, the name of these images is defined by the File Naming Template next to the Flattener options. See 3.6. File Naming Template on page 132.

Chapter 8. Nexus Processor Activities

All NexusProcessor activities are related to the ArtPro native file format, e.g. the internal format of NexusProcessor is the ArtPro format which implies that NexusProcessor is equally capable of opening and further processing ArtPro native files. Although a number of opening and saving file activities are identical for the NexusImport and NexusProcessor modules, NexusProcessor is not capable of importing PostScript or PDF files, this needs to be handled through NexusImport.

Please note that a considerable number of NexusProcessor activities are identical or very similar to functionality that can be found in ArtPro. In these cases, a basic explanation will be given in this Nexus reference manual while for a fully detailed description we refer to the ArtPro manual.

The NexusProcessor module contains an elaborate number of vector outputs which will convert the ArtPro native file format to a range of vector output formats.

8.1. Certified PDF - ArtPro

"Certified PDF" allows to integrate the Certified PDF Workflow functionality into Nexus. The aim is to provide functionality to import Certified PDF, edit and then export as Certified PDF with information about edits and changes to the document. For a complete explanation, see 7.1. Certified PDF on page 183.

8.2. Create ArtPro File

This activity will generate a blank ArtPro file, which can be used later in the workflow for adding pictures, inserting other files, etc.... See 7.2. Create ArtPro File on page 185

8.3. Open ArtPro File

This activity will open an existing ArtPro file, either input through a hot folder, generated earlier in the workflow (e.g. with a file dependency), or defined earlier in the workflow (e.g. through the Select File activity)

See 7.3. Open ArtPro File on page 185 for a full description

8.4. Insert File

This activity will insert an existing ArtPro file or picture into the file which is currently being processed. See 7.4. Insert File on page 188 for a full description.

8.5. Apply Pictures

This activity will apply an ArtPro file or picture to all objects in the file.

This function may be useful to replace the graphics in an existing step and repeat template with another graphics file. The box popup will determine which box of the picture (only for ArtPro files and PDF files) will be used to center the graphics when applying the pictures to the objects in the file.

Remove Unused Separations will remove all empty separations after the Apply Pictures.

The Place Single Separation ArtPro File in Single Separation option defines how to handle inserting ArtPro files with only one separation. If the option is switched off, objects in this AP file with 100% of the single separation, are considered to be registration color, and thus will get 100% of every ink in the ArtPro file after insertion. If this option is switched on, the file is inserted in one single separation instead.

8.6. ArtLink

This activity gives full access to ArtPro's ArtLink module from within NexusProcessor and will allow to automatically generate multiple versions of a template file based on database information. The different versions will be in different files or in different layers, depending on the setting of the radio button an the bottom.

Since the template file needs to be made in the ArtPro application, we refer to the ArtPro manual for a full description of the ArtLink module. For specific information on the use of Text parameters in ArtLink, we refer to the Technote on ArtLink Text Parameters.

The template file which is generated in ArtPro will contain all "hot linked" objects which refer to parameters in the database or automatic parameters based on job content. In what follows we describe how a workflow needs to be set up in order to automatically generate ArtLink versions with NexusProcessor.

8.6.1 The ArtLink workflow

This simple example workflow shows 2 main activities, a Select File activity, and an ArtLink activity.
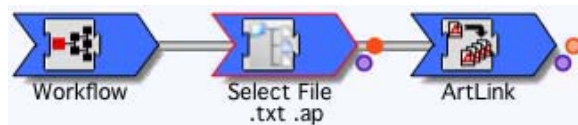
In this workflow we will drop a folder containing 2 files and a folder.

The input folder contains an ArtPro template file "ice cream template.ap", a database file "ice cream.txt" and an images folder which contains the different images which will be used for the versioning: cassis, lemon, lime, orange, peach and tomato.

The Select WorkFlow Input contains 2 entries, whose name ends with ".txt", referring to the dbase file, and whose name ends with ".ap", referring to the ArtPro template file.

The Group Files option should be on, meaning these 2 files will be grouped together for the ArtLink activity, which indeed needs the database file and the ArtPro file. Equally note that the database file always needs to be the FIRST entry in the list.

8.6.2 Setting the ArtLink Activity

The ArtLink activity has a number of parameters set.

• **ArtPro Template**
 The ArtPro file selection does not need to be selected here since it is actually determined by the Select File mechanism. This can be used if the ArtPro File with the links, is a fixed file.

- **Additional Resources**

  Additional Resources will allow to locate the Color Book and the Ink Book that needs to be used, similar as one would load these in ArtPro when colors or inks need to be defined from a library (e.g. PANTONE™ library)

- **File & Font Settings**

  The File & Font Settings button will allow to work with root folders, folder mapping and font folders for the ArtPro template file, since this is actually an ArtPro file and may contain images (on the same or a different server) and fonts. The fonts are obviously necessary if variable text needs to be applied depending on the database parameters. For a full description of the File & Font Settings we refer to the Open ArtPro File activity.

- **Save ArtPro**

  The Output File Naming Template button will determine how the files, generated by the ArtLink activity are named and where they will be saved.

  As is clear from this resulting folder when the job has been executed, 6 jobs have been generated, each with a variable extension:.Alnk_1 to .Alnk_6.

  You can also define if a Preview needs to be saved, and at what resolution.

- **Save Records**

  You can define if the results of the different records should be saved in multiple ArtPro files ("Files"), or in one single ArtPro file containing different Layers ("Layers"). In that case, the name of the different layers is defined using the File Naming Template.

8.6.3 The database file

The database needs to be a text file as shown in this example.

```
PANTONE;ice;barcode;pict
"300";"Blue Curacao Ice Cream";"54327719";":~images:cassis"
"399";"Margharita Ice Cream";"54327627";":~images:lemon"
"370";"Caipirinha Ice Cream";"54327719";":~images:lime"
"orange";"Tequila Sunrise";"543277726";":~images:orange"
"1645";"Peche Mignon Ice Cream";"54327733";":~images:peach"
1797";"Bloody Mary Ice Cream";"54327740";":~images:tomato"
```

The first line describes what variables will be used, while the values for the variables or each described on one line in the file.

- PANTONE™: the color entry in the color book to be used

- ice: a text string

- barcode: the value of a barcode to be used

- pict: an image to be used.

Note that the images are described as ~images:xxx where ~ describes the current position of the template file, and images is a subdirectory which is located relative to the current position of the template file. Images will also be searched through the Files & Folders settings, so an full exact path is not always necessary.

8.6.4 The results

After processing, 6 ArtPro files have been generated, a zoomed view of the first ArtPro file clearly shows the variables which have been used: the color, the text string, the barcode, and the image.

The File Naming Template in the ArtLink activity allows the use of parameter values from the database records. The value of the n-th field can be used as a template key for the Save ArtPro file template.

8.7. Update ArtLink

The Update ArtLink activity is comparable to the ArtLink activity. All of its settings can be found in the ArtLink dialog (see 8.6. ArtLink on page 244).

While the ArtLink activity creates as many versions as there are records in the database, the Update Artlink activity does not create any files or versions. It modifies the open ArtLink file using the information from 1 specific database record (defined in the "Record Number" field), or from information included in the XML file.

8.7.1 Additional Key Values

The Additional Key Values allow to define Keys to be used in the File Naming Template when updating the file. These keys are defined from within the workflow rather than coming from the dbase. This can be useful e.g. to set the name of the operator.

8.8. Layer Versioning

The Layer versioning activity allows to create multiple ArtPro files from a single file, based on its layers. The Base layers will be used for every ArtPro file, while every Version layer will result in a separate ArtPro file. This can be used e.g. to split up a file with layers "Base graphic", "Base Text" "English" "French" "German", into 3 files: everyone having the Base layers, and one with the French, one with the German and one with the English layer.

8.8.1 Base Layers

The Base Layers are the layers that are used for every ArtPro file. These can defined by name, or by range. When defining a Base layer by name, it can be added to the list by clicking the + button. Layers can be removed from the Base layers list by selecting it and clicking the - button. The name of a layer can be defined by double-clicking it in the list. When defining the name of the Base Layer, wildcards (*) can be used.

When defining the range, you can e.g. define that layer 1 - 3 are base layers.
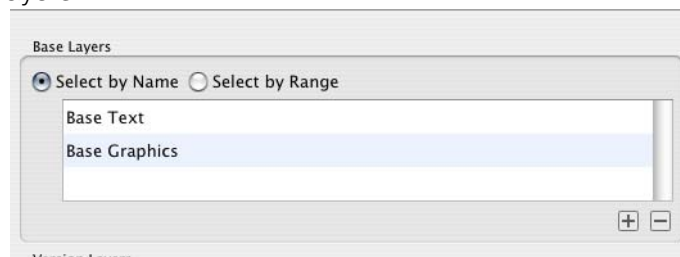
8.8.2 Version Layers

The Version Layers can be defined by the user, or it can be set to use all Non Base layers as version layers.

When defining the Version Layers, you can add and remove versions. The Template key for a version can be used in the File Naming Template in order to define the names of the resulting ArtPro File. For every version, you can define what layers need to be used. If the option is on, the workflow will fail if the entered Layer is not found in the original ArtPro File.

The option Ignore Case In Layer Names defines whether the definition of layer names should be case sensitive or not.

If Layers are found other than the ones defined in the Versions and Base layers, the workflow will fail if the option Fail if extra Layers found is on. This option doesn't make sense if the All Non Base Layer option is used for the Version Layers.

When saving the different ArtPro files, you can define if the file needs to be saved with preview (and its resolution) and if the Certified PDF information should be included.
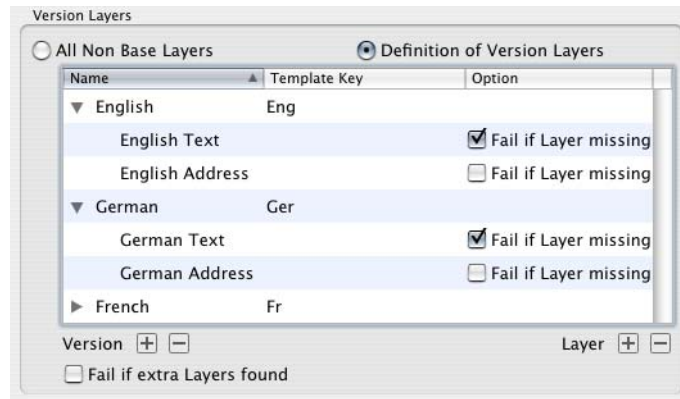
8.9. Borders

The Borders activity allows to modify the job size information of the current file.

Different job sizes can be defined in one file: media box, crop box, bleed box, trim box and art box. Note that if multiple boxes need to be modified, multiple Borders activities need to be set in the workflow, as one Borders activity changes only one of the Borders.

Each of the box sizes can be set to a fixed size depending on the size dialog, or to a fixed size depending on dimensions which are put in the Vertical field and Horizontal field.

The square buttons in the lower part of the window will determined in what direction the new box size will be applied, depending on the current content of the file.

It is equally possible to calculate a difference to the current size of any page box (selected by the "start from Box" option), using the DV field (difference vertical) and DH (difference horizontal) field. In this case the Vertical field and Horizontal field needs to be set to 0, while the DV and DH values (positive or negative) will be used to make the current box size larger or smaller, again with the direction depending on the selected square button in the lower part of the window.

Suppose a file was imported from PostScript with the bleed contained in the job size, one could now have a Trim box which is as an example 3mm smaller in all directions with setting DV and DH both to –3 mm. When a file is exported from Nexus, it will contain

the page box information as defined by these settings, hence Step and Repeat applications or imposition applications can now place the files based on e.g. the Trim box.

8.10. Fit Borders

The Fit Borders activity will adjust the job size and the selected page boxes (All or a selection from the Border popup menu) to all the elements which are on the current document. Note that when "All" is selected, this means that the media box, crop box, bleed box, trim box and artbox will all be set to the same size.

You can define if you want to fit the borders only vertically, only horizontally or both.
You can define whether it should fit on the selection, or on all. For more info on selections, see the Selector activity below.

8.11. Clip to Border

The Clip to Border activity will clip all the objects to the edge of the selected PageBox.

Objects completely out of the pagebox will be removed, objects partially inside the selected pagebox will be clipped to the pagebox.

The Clip To Border activity can be applied to all objects, or only to the Selection. For more info, see the Selector activity.

8.12. Fit to Border

The Fit to Border activity will Fit all the objects to the edge of the selected PageBox.

If the option "Scale Proportionally" is on, all objects will be scaled proportionally, until the bounding box of the selected object reaches the selected border, either in Vertical or in Horizontal direction.

If the "Scale Proportionally" option is off, the selection will be scaled to fit the borders both vertically and horizontally. This can sometimes be used when creating sleaves.

The Scale factor can be rounded off using the Scale Round To value. If set to e.g. 5, the scale will be rounded down to the closest multiple of 5. If set to 0, no rounding is applied.

The upscaling can be limited using the Limit Scale To field.

The Fit To Border activity can be applied to all objects, or only to the Selection. For more info, see the Selector activity.

Apply on Notes will transform notes along with the rest of the file, so that the positioning of the notes inside the file remains the same.

8.13. Fit To Paper

The Fit To Paper activity selects the most appropriate paper size from a list of paper sizes. This allows to select the most appropriate page size (for proofers) or plate size (for image setters) for a job, based on the available proofers and/or plate sizes.

These paper sizes can be entered in the Activity settings, using the + button.

The Media Box defines what box will be used to determine the optimal paper size.

It can be set to Center on Page, Upper Left on Page, or Fit To Page. Only this last option will actually scale the job to fit on the optimal paper size.

If the "Rotate to fit" option is on, Nexus will be allowed to rotate the job when searching for the optimal paper size.

8.14. Create Layer

The Create Layer activity will create a new layer in the ArtPro file currently open in memory. Further processing will take place in the newly created layer. Layers are equally supported in ArtPro, hence when editing needs to take place the operator will have access to the layers as they are generated in NexusProcessor. A typical example is a double burn workflow, where multiple files are imported (CMYK of first version, K of second version, K or third version, etc….) To make later editing easier, one could set a Create Layer activity before each of the imports, hence layering the final output file.The name of the layer is determined by the template. See 3.6. File Naming Template on page 132.

It is possible to move the selection to the newly created layer, by switching on the appropriate option. Using the Position dropdown, you can create a layer on top or at the bottom of the file.

8.15. Modify Layer

The Modify Layers activity allows to change the settings of layers. In the Layer fields you can enter any number of layers, by full name or using a wildcard (*).

If the "Matching" option is on, all layers matching the entered string will be affected. If the "Matching" option is off, all layers NOT matching the string will be affected. This allows e.g. to select all layers except "varnish*"

With the checkboxes you can set the layer(s) to (in)visible, (un)locked or (non)printing.

If a layer name is not found, this line will be ignored, but if the "Abandon" option at the end is on, the rest of the workflow branch will be abandoned.

Layers with hidden, locked or non-printing checks, stay like that until other Modify Layers activities remove check or until workflow closes ArtPro file.

8.16. Reorder Layers

The Reorder Layers activity allows to change the order of layers.

Layers with a name that match one of the entries are placed in the specified order. Other layers are placed underneath in their original order.

Entries in the list can be added and removed using the Add and Remove buttons. An entry can contain a wildcard (*).

If two different layers match the same entry, their relative order depends on the original order.

If a layer name matches different entries, the best matching is chosen. E.g. a layer name "Trap layer" matches more with "Trap*" than with "*".

8.17. Delete

This activity allows to delete objects, unused separations, unused layers and defined separations from the current file.

8.17.1 Objects

- **Delete Objects**

  If Delete Objects is checked, All objects or all selected objects will be deleted. Although not often used, deleting all objects could be used to delete the contents from a file but retain all pagebox settings for another document (or picture) to be imported into or placed. For more info on selections, see the Selector.

8.17.2 Separations

- **Separation mode**

  This option allows to set if you want to leave the separation "as is", if you want to define what separations to delete (Remove) or what separations you want to keep (Only Include). The Delete Unused Separation option is not influenced by this setting.

- **Die / Transparent/Varnish / Opaque**

  The checkboxes allow to set if separations should be removed or included based on the separation type.

- **Separations list**

  If Separation mode is set to Remove, all separations defined in the list, will be deleted from the file. If separation mode is set to Only Include, only the separations defined in the list will be kept, and all others will be removed.

  A separation name can be added by clicking the + button and typing in the name in the text field. By selecting a separation from the list and clicking -, a separation name can be removed from the list. The separation names in the list can contain wildcards (*).

- **Delete Unused Separations**

  If this option is on, unused separations will be removed, regardless of the Separation mode setting.

8.17.3 Layers

- **Delete Layers**

  If Delete Layers is selected, all layers defined in the list, will be deleted from the file. A layer name can be added by clicking the + button and typing in the name in the text field. By selecting a layer name from the list and clicking -, a layer name can be removed from the list. The layer names in the list can contain wildcards (*).

- **Delete Unused Layers**

  If this option is on, unused layers will be removed.

8.18. Select Objects

Select Objects allows to select / deselect objects.

8.18.1 First

The radio buttons on top define what to do prior to the selection: Do nothing means leaving the selection as is. This can be useful to combine multiple Select Objects activities. Invert Selections will invert the selection prior to applying the select activity. First Select All or First Deselect All allows to start from scratch, with either everything selected or everything deselected.

8.18.2 Paint Style

- **Flat Paint**

  Allows to Select/Deselect Flat Paint. This can be used in combination with the "Match" option (see below).

- **Registration Color (Candidate)**

  Allows to Select/Deselect objects with Registration Color, or a Registration Color candidate. A Registration Color candidate is a color with 100% paint for all separations, without the Registration Color flag enabled.

- **Gradations**

  Allows to Select/Deselect Gradations, either Linear, Circular or Multistep gradations. This can be used in combination with the "Match" option (see below).

- **Matching**

  Using the "Matching" option in the Paint Style tab, it is possible to select objects with a Flat Paint or a Gradation within the defined percentage range.

  The separation names can contain wildcards.

  The Overprint column allows to select objects that are transparent for that specific separation.

- **Pictures**

  Allows to Select/Deselect Pictures, either placed, mapped or Patterns.

- **Images Type**

  Selects all placed files of the file type defined by the menu: TIFF, ArtPro files, EPS, TIFF, TIFF/IT or PDF

- **Images Color**

  Selects all images in the file, based on the setting of the drop-down menu. Choices are: CMYK, RGB, grayscale, B/W (Black and white one bit images), or All.

8.18.3 Transparency

- **Blend Mode**

  Selects all objects with a certain Blend Mode. By setting the dropdown menu to "All", you can select all objects containing any Blend Mode.

- **Opacity**

  Allows to select all objects with an opacity higher (At Least), lower (At Most) or Equal to the value entered.

- **Opacity Masks**

  Selects all objects containing a Soft Mask.

- **Objects / Groups with transparency**

  Selects all objects or groups containing any transparency.

- **Overprint**

  Selects all objects containing overprint.

8.18.4 Objects

- **Text**

  To select all text, or text smaller or bigger than the entered point-size.

- **Vectorized Text**

  To select vectorized text. Nexus remembers text that was converted to outlines using the Text to paths activity or during import.

- **Font Name**

  Selects all text items or text blocks containing the font entered in the input field. A text item containing more than one font, will be selected completely if the entered font is used.

- **Screen Name**

  Selects all items using the screen settings entered in the input field. If left blanc, you can select all objects without screening.

- **Strokes**

  To select all strokes, or those smaller or bigger than the entered value.

- **Traps**

  Selects all traps, created by Automatic Trapping. A trap that has been edited, will no longer be recognized as a trap, and thus not be selected.

- **Barcodes**

  Selects all Bar codes, containing bar code information. With some transforms (e.g. unproportional scaling), an invalid barcode is created. A warning will be given when transforming, and the bar code will no longer be selected with this function.

- **Slices**

  Selects all slices (used for Grid Warping).

- **Open Paths**

  Selects all paths that are open.

- **Blends**

  Selects all blends.

- **Link**

  To select all objects containing a link for ArtLink.

- **Objects Inside / Outside bounding box**

  In the Objects tab you can define to select or deselect objects inside or outside a defined pagebox.

- **Layers**

  This allows to select or deselect objects that are in a Layer that matches (or doesn't match) the entered name. The layer name can contain wildcards.

8.18.5 Selections

The radio buttons at the bottom define whether the defined objects should be selected or deselected.

Select within selections in combination with "Select" will search for objects that match the defined criteria inside the current selection. Objects that don't match these criteria will be deselected.

Using Select within selections in combination with "Deselect" will deselect the objects inside the selection that match the defined criteria. Objects that don't match these criteria will remain selected

The Fail if number of selections... option allows to have the workflow fail if the number of selections is higher than, lower than or equal to the entered value. This can be used e.g. to have the workflow fail if any text is smaller than 7 point.

8.18.6 Apply on Selection

For a number of Nexus Processor activities, you can define if it needs to be applied on all objects, or only on the selection.

The options are "Apply On All" or "Apply On Selections".

When set to "On All", the activity will be applied to all objects (as in earlier versions). When set to "On Selections", the activity will be applied only to the selected objects.

The Difference activity is used to calculate the difference between 2 ArtPro files (resulting in a workflow from NexusImport or NexusProcessor activities, or 2 ArtPro files that have been opened from a folder with the purpose of being compared to each other).

This function is useful to verify that the graphics of two different language versions fit, to find out what changes a customer made to the new label, to verify that corrections on files have been executed, etc.…

The concept of difference calculation is based on a pixel comparison. Based on a set resolution as input in the Resolution field, the system will compare the pixels of the 2 files at the same location. When a difference is found between 2 pixels, a pixel will be put in the resulting difference file at the same location, when no difference is found, no pixel (or a gray pixel in separated mode) will be put in the resulting file. This means that when 2 files are compared that are identical, the resulting difference file will either be empty or completely gray.

The comparison and the type of resulting file is dependent on the setting of the radio buttons at the bottom of the dialog:

- **Separated:**

  Each separation of the 2 files will be compared on a separation basis. For each separation, a grayscale TIFF will be written to disk. In the resulting grayscale images, a 50% gray pixel means there is no difference for that specific pixel, if the first file for the pixel is darker that in the other file, a darker pixel will be put in the difference files, and vice versa.

- **CMYK:**

  the CMYK pixel data of the two files will be compared in this case. If no difference is found, the resulting difference pixel will be white, when there is a difference, the pixel (CMYK) of the second file at that location will be put in the difference file. The resulting file in this case will be a CMYK TIFF file.

  Note that with this comparison method, ONLY the CMYK information is taken into account, differences in PANTONE™ separations will be disregarded.

- **Binary**

  this will result in one singe 1-bit TIFF file, where differences are shown as black pixels.

- **Align Horizontal / Vertical:**

  when the ArtPro files to be compared have different job sizes, these popup menus allow to define how the jobs have to be aligned before comparison.

- **Delete Matching Files:**

  will remove the TIFF files of the separations in which no difference between the two jobs has been found. The Separated mode is the only setting that results in multiple files, hence this setting is the only one affected by this option.

- **Make Report Job:**

  will generate a new ArtPro document, with the name of the compared files, date and time of comparison, used resolution, and all difference files placed underneath each other, preceded by the separation name.

- **Output:**

  Allows to specify the name and the location of the difference file, please refer to the Copy File activity for full details.

- **File & Font Settings:**

  Since the Difference activity actually opens 2 ArtPro files, in some cases it may be necessary to specify Root Folders, Folder Mapping and Fonts folders. Please refer to the Open ArtPro File activity for full details.

8.20. Flatten Transparencies

The Flattener section, as found in the Export PDF and Print dialog, contains all settings to flatten Blend modes and overprints. It can also be run as a separate activity: Flatten Transparencies.

The Flattener replace all blend modes by "normal" objects, maintaining the final result, i.e. the blend is calculated to whatever is underneath at that time, and will be adepted in a lineart object (if possible) or an image.

Keep in mind that placed PDF or placed ArtPro files can not be flattened! In those cases a warning is generated: "Flattener was unable to process placed art..."

This will only happen if in the job, some objects with transparency has to be flattened with a placed image.

- **Resolution**

  The Resolution allows to set at which resolution an image should be made, when necessary

- **Noise for Gradients**

  If it is necessary to translate a gradation into a ct, the Noise For Gradients field sets the amount of noise that has to applied.

- **No noise from / to**

  This allows to define a range in which no noise should be applied to gradations. This is useful e.g. for autoblend screening.

- **Vectorise Opacity Channel**

  Vectorise Opacity Channel is an optimization tool for the flattener. It reduces the path containing an ArtColor internal image, removing all areas being completely transparent (by vectorizing the opacity channel) before flattening. This way, objects underneath a part of an image where it is 100% transparent, no longer need to be flattened.

- **Flatten Overprints**

  If the Flatten Overprints is on, not only objects containing blend modes will be flattened, but also objects containing overprint, i.e. "trans" in the Paint Style. This can be used to get a correct preview in older Acrobat versions and Mac OS X Preview.

- **Ignore Overprints on Placed Art**

  This option allows to ignore Overprints on top of placed Art. If this option is not on, Overprints on top of placed Art (e.g. a S&R) will result in a failed job.

8.21. Modify Paint

The Modify Paint activity allows to modify the paint (in percentage of a given separation) of objects or selected objects, change the overprint, or modify the start and end color of gradations.

8.22. Modify Separations

The Modify Separations allows to change settings for separations.

8.22.1 Rename C/U/CV/ CVC/CVU/CVP to

This allows to convert different CVC flavours to the same extension.

8.22.2 Delete CMYK flags

This allows to remove CMYK flags. These flags indicate what separations should be handled as CMYK (for placing pictures, importing PS files, etc.) even if they are replaced by spot colors.

8.22.3 Separation list

The separations are selected by name. Wildcards can be used, e.g. "Die*" will select all separations whose name starts with Die. Separations are added by clicking the + button.

8.22.4 Rename

A separation can be renamed by entering the original separation name and the new separation name, and check "Rename". Note that renaming is NOT the same as remapping !

8.22.5 Create

A separation can be created by entering the separation name, and check "Create". In the example, a separation PANTONE Red will be created.

8.22.6 Set to

- **Remap**

  A separation can be remapped by entering the original separation name, and the "target" separation. If the Target separation doesn't exist, the job will fail

- **Convert to CMYK**

  A separation can be converted to CMYK by entering the name of the separation, and entering "CMYK" as target.

- **Overprint**

  A separation can be set to overprint by entering the name of the separation, and entering "Overprint" as target.

- **0 / Trans**

  A separation can be set to knockout by entering "0". All objects containing "trans" for that separation, will be changed to "0". By entering "Trans", the separation will be set to overprint, changing all "0" values to "trans". The "Apply on Selection" can be used to set the desired separation to 0% or Trans only for the selected objects.

- **Opaque / Die / Trans**

  allows to set the attribute of a separation to opaque, die or transparent (varnish).

  The Opaque / Die / Trans info is used in the JDF export and in the Vector trapper activity.

8.22.7 Ink Book

Allows you to select the Ink Book to be used.

If the *Update Separations from Ink Book* option is enabled, all inks in the file (that are found in the ink book) will be updated, using the values from the ink book.

8.23. Reorder Separations

Reorder Separations allows to change the order of the separations in the Separations list.

Separations with a name that match one of the entries are placed in the specified order. Other separations are placed underneath in their original order.

Entries in the list can be added and removed using the + and - buttons. An entry can contain wildcards (*).

If a separation matches two different entries, it will be placed at the topmost position. If two different separations match the same entry, their relative order depends on the original order.

There is an option to reverse the separation order. The option can be used for some special printing procoesses like dry offset. When reverse is enabled, no separation reorder can be done.

8.24. Generate Strokes

The Generate Strokes activity creates strokes around all objects, or around all selected objects (see Select Objects for more info).

- **Width / Inside / Outside**

  The Width defines the line width for the Stroke. Filling in the Width will result in a symmetrical Stroke. Otherwise you can define Outside/Inside distances separately.

- **Corners / Caps**

  The Corners and Caps settings allow to define the shape of the strokes in the (outside) corners, and at the end points. For elaborate info, we refer to the ArtPro manual.

- **Separation Name / Ink book**

  Strokes generated by this activity will get 100% of the separation entered here and overprint for all other separations. If the separation does not exist yet, it will be created. In that case, the specifications for the ink will be searched in the defined Ink book.

- **Apply on All / Selections**

  Allows to define whether strokes should be applied on all objects, or only on the selected objects. For more info, see the Selector activity.

- **Add Stroke to Crop Box / Trim Box / Bleed Box**

  Allows to add a stroke on the selected page box.

- **Dashed**

  The Dash option allows to generate dashed strokes. The Dash distances and Gap distances define the length of the individual dashes and gaps.

8.25. Adjust Stroke Width

This activity allows to change the width of all (or all selected) strokes. This can be used e.g. to give hairlines a minimal width: first use the Selector to select all strokes smaller than the minimum width, then use the Adjust Stroke Width activity to change the width of the strokes.

8.26. Spread

This activity allows to apply a spread on all objects or on the selection. The activity is based on the Interactive Trapping function in ArtPro. For a more elaborate description, we refer to the ArtPro documentation.

When a Spread is applied on an object:

1. The paint style of the original object is changed to 0% for every separation

2. A slightly larger "Spread" object is generated

3. The Spread object gets the paint style of the original object, BUT changed to "trans" for every separation that had a 0% value.

4. If the original object had a blend mode, the original and spread object are grouped, and the blend mode is applied on the group.

8.27. Generate marks

This activity will physically add marks to the file, based on the dimensions of the box set in the activity dialog.

8.27.1 Marks

The Marks settings define what marks will be used

- **User Text**

  This allows to add user defined text. The text can be defined using the File Naming Template, so that file names, user names, user keywords etc. can be included in the marks text.

- **Job Name**

  Puts the name of the ArtPro file in the lower left corner in all separations.

- **Version Number**

  This is the number that is shown in the job size dialog box. Every time an ArtPro job is modified after saving, the version number is increased.

- **Date & Time**

  Puts the current date and time in the lower left corner in all ink separations.

- **Separation Names**

  Puts the names of the separations on the separate films.

- **Distortion**

  Puts the distortion from the Print dialog box in the file. The value will be preceded by V or H, depending on the direction of the distortion.

- **Dot Gain Filename**

  If a dotgain file is selected in the print dialog box and the dotgain compensation option is tagged, the dotgain file name can be added to the comments.

- **Color Setting Name**

  If a set of Color Management settings are loaded, the name of this set can be added too.

- **Crop marks**

  The crop marks are put on the bounding box.

- **Registration marks**

  Appear in the four corners outside the job, or centered on the job when the option *centered* is on.
  The width of the registration marks is 1/300 inch (about 0.08 mm) and the color is always registration.

- **Marks File**

  The marks File option actually allows to select a physical marks file from disk, clicking on the button with the three dots will open the browser for selecting the file. For a description on marks files please refer to the ArtPro reference manual.

8.27.2 Options

The Options define how the marks will be handled.

- **Vectorise Text**

  will convert all the text to paths, to avoid font problems on the RIP.

- **Set Inside Borders**

  to set the text on the inside of the borders instead of outside the job borders.

- **Use Text Settings**

  With the Text Settings, you can define the font to be used for the marks. This can be interesting for japanese users. If a default japanese font (e.g. Osaka) is defined, all marks text will also contain japanese characters.

- **Box**

  The Box dropdown allows to define to what borders the marks should be applied.

- **Adjust Crop Box / Adjust Media Box**

  The Adjust Crop Box setting modifies the crop box after creation of the marks, so that the job and the marks are completely inside the crop box. In that case, it can be necessary to change the media box as well, to avoid a crop box bigger than the media box. Therefore the option Adjust Media Box can be used.

- **Files & Fonts**

  The Files & Fonts settings button will allow to define root folders, folder mapping and fonts folders, similar as in the Open ArtPro File activity (please refer to this activity for a full description. This functionality has been made available in case ArtPro files have been placed in an open job during the workflow, to allow for the retrieval of the linked images or used fonts at the time of printing.

- **Unit**

  Allows to define what unit should be used in the Marks. This unit will also be used for the ArtLink parameters added by the Marks activity

- **For PS / For PDF**

  As the Dotgain curve and Distortion can be placed as Marks, and these two settings can be made in the Print menu and in the Export PDF dialog, a pop-up has been added next to the "Generate Marks" button. The pop-up allows to set what Dotgain and Distortion should be shown in the marks: the settings for PS (from the Print dialog) or those from the Export PDF dialog.

  The pop-up only has affect when the Generate Marks activity is used. If Marks are added e.g. in the Print activity, the appropriate settings (in this example, the settings as defined in the Print dialog) will be shown in the marks.

8.28. Gridwarp

The Gridwarp activity allows to calculate complex warping of documents based on a source grid and a destination grid.

This activity can handle the warping of all element types like gradations, images, etc..... and is typically used for the warping of conic cups, metal containers, etc.…

Grid Warp can be done using two files, an ArtPro and a Grid file. In that case, the operation of the Gridwarp activity is similar to the operation of the ArtLink activity where 2 files are presented to the workflow and are selected by the Select File mechanism. Using the

Select Grid button, you can use a fixed Grid File. If no Grid File is presented, Nexus will use the Grid defined in the ArtPro file itself (if provided). This allows to set up grid warp in ArtPro, and let Nexus do the actual calculation.

For a description of the generation of grid files we refer to the PowerWarp manual, as the operation of the Gridwarp activity is based on this PowerWarp module.

8.29. Modify Screen
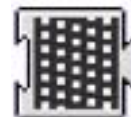
This activity will apply user defined screening parameters to all selected objects.

The screening parameters in this case are PostScript based, and for a full description we refer to 11.1.2 PostScript screening on page 403. Note that the Dot Code field will allow you to enter a PostScript string to execute your own personalized screening.

Using a Screening set allows to select a screening set as saved in ArtPro based on the name in the Screen edit field. The file can be selected using the Browse button. See the ArtPro documentation for a full description.

8.30. Move Ruler
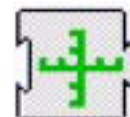
Every document in NexusImport and NexusProcessor has a Ruler position, depending on how the Ruler position was set when importing a file, or when opening a file.

The Move Ruler activity will move the Ruler within the current file to a new position based on an offset from the current Ruler position, or an offset from the position of any of the corners or centers of the pageboxes. This offset is set by the Vertical and Horizontal fields. This is very useful when pictures or other files need to be added to the current file at an offset from the Ruler position, or any of the corner or center points of one of the pageboxes.

8.31. OPI Generation

The OPI Generation activity allows to generate low resolution images from high resolution images, e.g. for use in a page layout environment.

In this activity the resolution and format (TIFF or EPS) can be selected. When a document is then printed with "Omit Images", the Importing activity can then recognize the OPI comments in the PostScript or PDF file and reroute back to the high resolution images. Note that this activity is not meant to replace a complete OPI system, it will merely generate a low resolution image from every image that is dropped in the workflows hot folder.

8.32. Make Thumbnail

Make Thumbnail is a processor activity to create a TIFF or JPEG preview of an ArtPro file.

Resolution can be set up to 120 dpi. Noise for gradation can be set. There will be no oversampling.

Compression can be set to TIFF, High Quality JPEG, Medium Quality JPEG or High Compression JPEG. The Template can be used to define name and location of the thumbnail.

8.33. Make Printcheck

Make PrintCheck is a processor activity to create a TIFF, JPEG or EPS preview of an ArtPro file.

You can set Resolution (without limitation) and Noise for gradation. There will be no oversampling.

Compression can be set to TIFF, High Quality JPEG, Medium Quality JPEG or High Compression JPEG. File Type can be set to TIFF/JPEG or EPS. The Template can be used to define name and location of the thumbnail.

8.34. Ink Coverage Check

Ink Coverage Check checks if the amount of ink does not exceed the Ink Limit.

Special separations such as opaque separations, die, or transparent separations, can be excluded. The page box to be used can be set, as well as the resolution at which the job needs to be rasterized for checking.

8.35. Optimizing

The Optimizing activity will delete (parts of) the contours that are not needed to produce correct print output. The function makes it possible to "clean" or flatten a document, removing all the superfluous and unnecessary paths. For each path the program checks all the contours on top of it and decides which objects should be cut, united or left untouched to maintain the same structure in the job.

Optimize is especially useful to eliminate unnecessary contours from an imported Post-Script file, in order to perform faster trapping, faster printing,... Keep in mind though, that the objects are typically less editable after optimization than before. We hence only recommend to use the Optimizing activity for complicated graphics documents.
The "5,000" example clearly shows the effect of Optimizing, the graphics look a lot cleaner and will be faster to print and trap. However, the editability is considerably reduced.
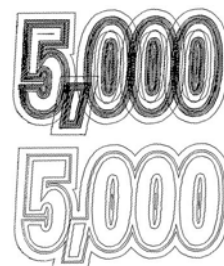
8.36. Regmarks

The Regmarks activity will allow you to use personalized marks.

The idea is to create one ArtPro file of the marks you need on a blank document with a job size which is in fact not relevant for applying the registration marks. When using this selected ArtPro file

with this activity, the marks will automatically adapt to the job size of the document active in the workflow while the inks will equally be adapted.

There are 2 ways of selecting a Regmarks file: either select a fixed file for the workflow by using the Select File button in the activity, or select a variable Regmarks file for the workflow by using the Select File activity.

For a description of how to build a registration mark file in ArtPro we refer to the Import marks activity in the ArtPro manual.

You can define on what page box the regmarks need to be applied, or to use the bounding box of the selection. With the Merge Layers function, you can define that layers with the same name in the Regmark file and in the open file, should be merged together.

8.37. Text to Paths

This activity will automatically convert all text or the selected text to outlines. Note that this when importing PS or PDF files, text could already have been converted to outlines if the Convert to Real Text option has not been set during the Importing activity. This is especially useful when ArtPro files are used and files need to be exported to environments where the fonts are not available.

8.38. Transform

This activity will apply a transformation to objects in the document. The transformation will be done either to all objects, or to the selected objects only (see Selector)

Following transformations can be executed:

- move horizontally and vertically
- scale horizontally and vertically
- rotate
- shear

The repetition field will allow to execute the transformation multiple times.

8.38.1 Copy

The Copy option will copy the contents of the file before executing the transformation. If at the same time repetition is set there will equally be multiple copies.

8.38.2 Apply on:

- **Path, Paint, Soft Mask**

  The Path, Paint and Soft Mask options will determine if the objects and their contents are transformed, or only the contents without the objects or the objects without the contents. Suppose a clipping path with an image would be transformed and Path is not checked, then only the image itself will be transformed and not the clip path.

- **Center Paint**

  The Center Paint option is only available if the "Apply on Paint" and "Soft Mask" is off. It will transform the path only, but then reposition the paint based on the center point of the path: the point in the paint that was on the center point of the original path, will be placed on the center point of the transformed path. This can be used e.g. when scaling or distorting Step and Repeat files, without scaling the contents of the paths, but still retaining their position inside the paths.

- **Notes**

  Apply on Notes will transform notes along with the rest of the file, so that the positioning of the notes inside the file remains the same.

8.38.3 Scale Strokes

If the Scale Stroke option is off, the stroke width will not change when scaling. If the option is on, the stroke will remain a stroke, and its width will be changed the same percentage as the parent path was scaled. Thus, scaling an object with a 3 mm stroke to 150%, will result in an object with a 4.5 mm stroke. When scaling unproportional, the stroke width will be scaled by the geometric mean of Vertical and Horizontal scaling. This means the stroke will be scaled proportionally. The geometric mean is the square root of the product of Vertical and Horizontal scaling.

8.38.4 Use Ruler

For scaling and rotating, the "Use Ruler" option defines to use the center of the ruler as the center for rotation and scaling. If the option is off, the center of the selected objects is used.

8.39. PowerTrapper

8.39.1 The Trap Dialog

The *Trap* dialog is where you define all your trapping settings.

1. Double-click the PowerTrapper Activity to open the Trap dialog.

2. Choose your trapping settings in the *Distance & Direction*, *Color & Shape*, and *Processing* tabs.

3. If needed, define trapping rules.

4. Save your trapping settings as a trap preset to be able to reuse them on another document.

- **Distance and Direction Settings**

- Trapping
  You can choose between two trapping modes:
  - *Normal Trapping*: This selects adjoining color pairs, which are likely to cause registration problems like ugly light gaps, and unwanted halo effects. PowerTrapper automatically chooses the most appropriate trap direction based on the relative luminance of the adjoining colors. Lighter colors are generally trapped into darker colors to minimize the visual effect of the trap.
  - *Reverse Trapping*: This prevents overprint of adjoining color areas by trapping these color pairs with a white knockout (erasing) trap. The white knockout trap is put on top of the lighter of the two colors. This is useful to prepare a job for Dry Offset printing (e.g. metal beverage cans) where overprinting of inks is not allowed as the inks would contaminate each other on the blanket.

- Trapping Distance
  Enter the width you want to give your traps.
  The default trap width is 0.2 mm.

- Minimum Ink Difference
  Trapping is applied to two adjoining colors when either:
  - The two colors each consist of at least one ink but they have no common inks.
  - The two colors have common inks but there is a difference of at least the *Minimum Ink Difference* percentage for two or more inks making up these colors.
    These differences in ink percentages must be in opposite directions.
    For example, with the default minimum ink difference percentage of 10%, the following two colors will be trapped:
    1st color: C 5% M 10% Y 50% K 15% (+10% K)
    2nd color: C 5% M 10% Y 85% K 5% (+35% Y)

Increase the minimum ink difference to trap colors that are more different, lower it to trap colors that are more similar.

- Image Trapping
  - *Automatic* (default): this determines the most suitable trap direction automatically, by comparing the average lightness of the CT image with the lightness of the adjoining area, then traps the lighter color into the darker one.
  - *Always Towards Images*: this always traps line art under adjoining CT images.
  - *Always Towards Line Art*: this always traps CT images under adjoining line art.

- Pull Back

  An ink pull back keeps away all but the darkest ink of a color area composed of multiple inks that borders to a very light background.

  It prevents individual inks from the composed color to become visible on the background due to registration errors during the printing process.

  Ink pull back is also known as "Cutbacks" or "Keepaways".

  The example below shows an object with 100% dark blue and 50% magenta on an empty background. 50% magenta is pulled back and a fine line of 100% dark blue remains. The color that remains (dark blue) is the *pull back ink*.
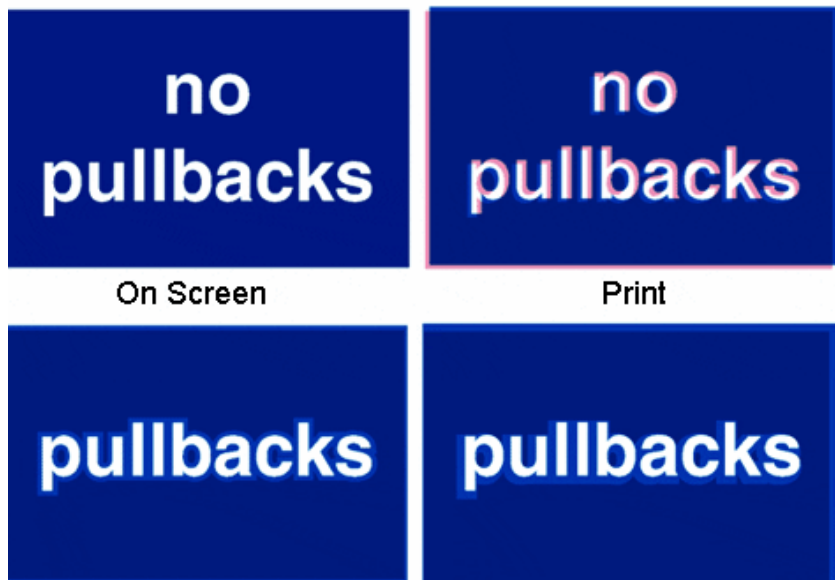
  - *Automatic* (default): this creates pull backs on rich black or rich spot colors, when the color left in the pull back area is not very different from the composed color.

In the example below, the left color is composed of 100% purple ink and 20% cyan. The darkest ink (purple) is not very different from the composed color, so using the *Automatic* pull back option will create a pull back.

The right color is composed of 100% dark red ink and 20% blue ink. The darkest ink (dark red) is very different from the composed color, so using the *Automatic* pull back option will *not* create a pull back.

- *Only Pull Back Rick Black*: this only creates pull backs on rich black.

- *Do Not Pull Back*: this never creates any pull back.

• Advanced Settings

Click the triangle beside *Advanced Settings* to show the advanced settings.

• Trapping Distance

If you want to use a different distance when trapping into black, spot colors or images or when creating pull backs, enable the corresponding option and enter the trapping distance to use.

• Image Trapping

If you don't want images to be trapped with each other, enable *Do not trap images to images*.

• Pull Back

If you chose to use *Automatic* pull back, the *Also pull back light inks* option is available. Enable it if you want to create pull backs even when the pullback ink (ink remaining in the pull back area) is visibly different from the composed color.

Enable *Do not pull back images and gradients* if you don't want to create pull backs on images and gradients.

• Trap Ink Sequence

By default, PowerTrapper uses the color luminance to define the trapping direction, except for opaque inks, for which the Inks order is used. If the "Treat all spot colors as opaque inks" option is enabled, color luminance is used only for CMYK. For opaque and spot inks, the trap direction is determined by the ink sequence.

- Overshoot Mode

  You can choose between the following three overshoot modes:

  - *Automatic* (default): The centerline behavior is according the rules determined in the color pair list.

  - *Never on Dark Areas*: The centerline is forced not to get beyond the center of dark areas.

  - *Never*: The centerline is forced not to get beyond the center of any area.

  An example:

  By default (*Automatic*), this results in the following traps:

If the parameter is set to *Never on Dark Areas*, this will result into:

If the parameter is set to *Never*, this will result into:

- **Color and Shape Settings**

- Trap Color Intensity

  By default, PowerTrapper uses the full color of the object to spread in the trap (100% trap color intensity).

  However, you can create a trap of a lighter color by reducing the trap color intensity percentage.

- Image Trap Color

  Choose how to trap your images:

  - *Use Original Image Data* (default): when spreading an image, PowerTrapper uses the underlying image data (when the image is clipped) to create the trap (see example 1 below).

Note: When there is no underlying image data (the image isn't clipped), it will create an empty trap.

- *Extend Image Data*: PowerTrapper will automatically extrapolate the image along its clipping path edge to ensure the trap looks as expected even if there is no clipped image data outside the visible image (see example 2 below).

- *Use an Approximate Flat Color*: Instead of using existing or extrapolated image data in the trap, PowerTrapper will use a solid color. A suitable color is determined by averaging the image's colors along its boundary with the object to trap (see example 3 below).

- Truncate Traps

  PowerTrapper can truncate the trap so that it doesn't stick out on another color. There are two truncation modes:

  - *On Center* ▢ (default): when a portion of a trap comes too close to the contour of another object, PowerTrapper Stand-alone limits it to half the distance between the trapped object and the other object.

  - *On Edge* ▢ : when a portion of a trap comes too close to the contour of another object, it is truncated on the other object's edge.
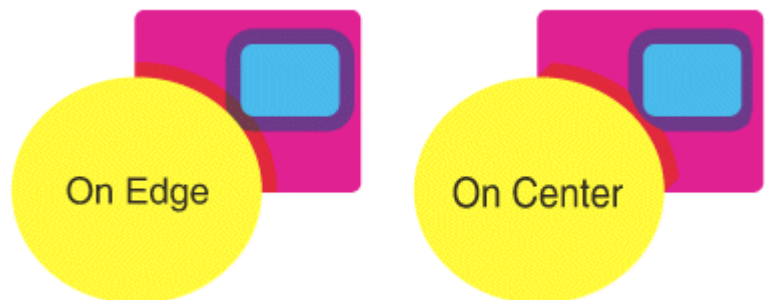
- End Caps

  This option specifies how to shape the ends of an open trap.

- *Square* ▣ (default): this option ends the trap at right angle to the adjoining object.

- *Round* ▣ : this rounds the ends of the trap. This option is typically only used in combination with white knockout (reverse trapping).

Note: We recommend you don't use *RoundEnd Caps* together with *Truncate Traps On Center*, as this can generate some artefacts (the round caps will be truncated).

- *Object Dependent* ▣ : with this option, the trap is a logical continuation of the contour of the spread object.
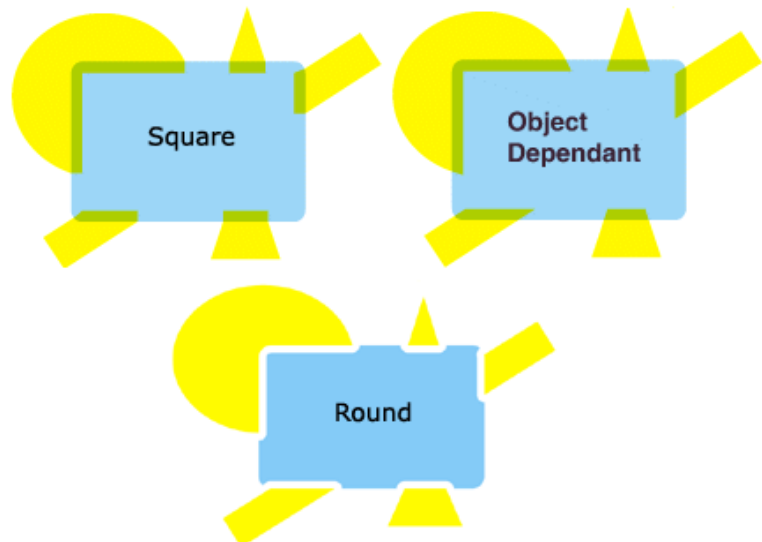
- Trap Corners
  This option allows you to change how the traps' sharp corners will be handled.
  - *Round* (default) ▣ : a round cap will be placed at all corners.

  - *Beveled* ▣ : this will cut sharp corners off.

  - *Mitered* ▣ : this option works with a miter ratio.
    The miter ratio serves to limit the length of the sharp corner (the distance from the base of the trap to the corner point).
    The default miter ratio value is 4. This means that if the length

of the sharp corner is more than 4 times the *Trapping Distance*, then the corner will be cut off (beveled). If it is less than 4 times the *Trapping Distance*, the corner will be left as it is.
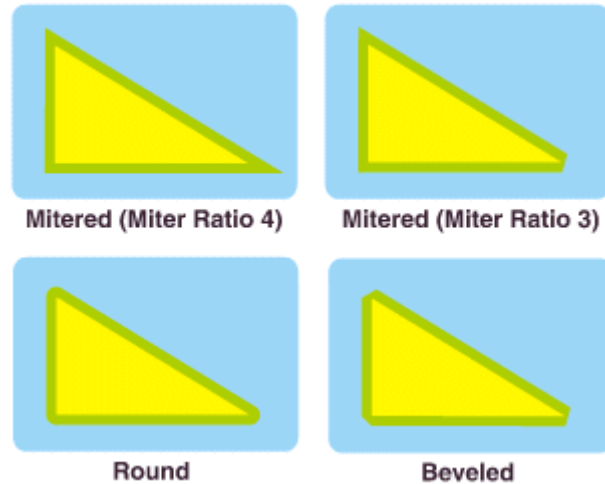
Mitered (Miter Ratio 4)   Mitered (Miter Ratio 3)

Round   Beveled

- Advanced Settings

  Click the triangle beside *Advanced Settings* to show the advanced settings.

- Truncate Traps

  If you want to truncate traps into black differently, select *Into black* and choose the truncation mode (*On Center* or *On Edge*). For more information about truncation modes, see "Truncate Traps".

- **Processing Settings**

- Color Pairs

  PowerTrapper can trap all hits (occurences) of a color pair the same way, or recalculate the trap direction for different hits.

  - *Each hit can have its own decision* (default): this recalculates the trap direction for each hit of a color pair.

  - *Use the same decision for all hits*: this traps all hits of the same color pair in the same direction.

  - *Use the same decision for objects smaller than*: this uses the same trap direction for hits of a color pair belonging to small objects, and recalculates the trap direction for hits belonging to bigger objects.
    Use the field next to the option to determine the maximum size of small objects.
    The default size is 1 mm

- Small Gaps

  Some input jobs contain very small unintentional gaps between neighboring objects, preventing the correct trapping of these objects. Although it is better to clean up such jobs before trapping, PowerTrapper can ignore these gaps automatically.

  To use this option, select *Close when smaller than* and enter the maximum size small gaps can have.

  The default size is 0.01 mm (or equivalent in your chosen unit).

Note: If you set a big gap size, trapping may become slower, and small parts of the job may be ignored during trapping.

- **Trap Presets**

  With PowerTrapper, you can save all your trapping settings as a preset to be able to reuse them on other documents.

- Defining a Trap Preset

  1. Define your trapping settings in the *Trap* dialog. Add rules if you need to.

  2. In the *Trap Preset* list, choose *Save...*

  3. Give your preset a name and click *OK*.

  You can now see your preset in the *Trap Preset* list. To reuse it in the future, just select it in the list.

  - To delete a preset, select it in the *Trap Preset* list then select *Remove*.

  - To edit a preset, select it in the *Trap Preset* list, make your changes in the trapping settings, then save it again with the same name.

8.39.2 The Trap Layer   PowerTrapper creates traps in your document's Trap Layer, and leaves the other layers intact. If your document doesn't contain a trap layer, PowerTrapper will create one.

8.39.3 Apply on   You can apply PowerTrapper on All objects in the file, or only on the selection. See the Selector activity for more information.

8.40. Vector Trapping

This activity gives access to ArtPro's PowerTrapper module from within NexusProcessor, and will perform the trapping on all elements in the file.

For a full description of all the different settings we refer to the Automatic Trapping section in the ArtPro manual.

Since this activity actually generates additional objects containing the trapping information it is possible to view and edit the traps in ArtPro, or to export them to PDF or composite PS.

8.41. Close ArtPro File

This activity will remove the currently open ArtPro file from Nexus memory. Note that every NexusImport or NexusProcessor workflow needs to be terminated by a Close ArtPro File activity. For a full description please refer to the Close ArtPro File section in NexusImport.

8.42. Tabular Step and Repeat

The Tabular Step and Repeat activity gives access to ArtPro's tabular step and repeat module from within NexusProcessor. For a full description we therefore refer to the ArtPro manual.

This activity can be used to step and repeat not only ArtPro files, but also TIFF files, EPS files, DCS files and PDF files, hence any of these file formats could be dropped in a hot folder for a workflow that starts with a Tabular Step and Repeat activity.

Equally, the Tabular Step and Repeat activity could be preceded by a Select File activity which would select a file from a folder. This would typically be the case when e.g. an ArtPro file and a Regmarks file are bundled in a folder for Tabular Step and Repeat, the Tabular activity would be preceded by a Select File activity that selects the ArtPro file (or any other of the supported formats) that needs to be stepped, while being followed by a Select File activity which would select the Regmarks (ArtPro) file that needs to be used to generate the register marks.

Note: Using NeXML or Shuttle, the Tabular Step and Repeat activity can even be set up to be used with multiple one-up files

The first popup menu: Use Box, allows to determine which pagebox (e.g. media box, bleed box, trim box, etc....) needs to be used as reference for the Step distance, e.g. if the Trim box is selected, the Step distance horizontally and vertically will be based on the appropriate sizes of the Trim box (unless Freeze Step is selected).

8.42.1 Step and Repeat settings

- **Count:**
  amount of instances of the file horizontally and vertically.

- **Begin Pos.:**
  horizontal and vertical offset to the Ruler position for the first instance of the document to be stepped.

- **Step:**
  only when in combination with the Freeze Step option, this fields will determine the offset between the steps. When left (0,0), the step distance will actually be based on the selected pagebox (in the example: the Trim box) of the file that will be stepped.

- **Angle setting**
  The Angle setting will determine the rotation of the file to be stepped.

- **Cut marks**
  The Cut marks option will add cut marks for any of the stepped instances.

- **Keep Bleeds**
  will include the bleed of the stepped file in the step and repeat document. Bleeds are always kept outside of the step and repeat job size. Note that bleeds will overlap when the step distance is set to the Trim box.

- **Place Single-Separation ArtPro File in Single Sep**
  This option defines how to handle repeating ArtPro files with only one separation. If the option is switched off, objects in this AP file with 100% of the single separation, are considered to be registration color, and thus will get 100% of every ink in the repetition. If this option is switched on, the file is inserted in one single separation instead.

- **File & Font Settings**

  will give access to the root folders, folder mapping, and fonts folders when the file to be stepped is an ArtPro file. For a description of this function, please refer to the Open ArtPro File activity.

- Color Management Settings

  This setting will determine if color management has to be applied for the step and repeat job. When enabling color management, it will be possible to select a color management settings file, previously saved by ArtPro. This file contains all ICC profiles and settings to determine how color has to be treated throughout the rest of the workflow (e.g. proofing of the step and repeat document), including ICC profiles for proofing, printing, etc....

  For a full description of color management in Nexus, please refer to Chapter 6. Color Management.

8.43. Full Step and Repeat

The Full Step and Repeat activity is based on ArtPro Interactive Step And Repeat. This functionality allows you to create a repetition of one single file at a time, based on either count or fill size.

8.43.1 General

- **Count / Fill size**

  There are two ways to make a step and repeat in Full Step and Repeat: *count*, where the horizontal and vertical number of labels is defined, or *fill size*, where the size of the paper is defined and Nexus puts as many labels as possible in this area.

  When using the *fill size*, Nexus will calculate the number of labels and equally divide the remaining space around the S&R. When *count* is used, Nexus calculates the *fill size*. When a group of labels is selected in ArtPro or Nexus Edit afterwards, all the used parameters will be displayed.

- **Step Size**

  The *Step size* is the space used for every file. Unlike the *Size* shown above, the step size takes rotation and bleed (margin) into account.

- **Margin**

  Margin is used to define the bleed between the labels. It is the difference between the *Step* and the box size. The horizontal and vertical margin can be set separately. If the bleed of the single file exceeds the bleed applied on the repeat, the jobs will be cut off in the middle.

- **Gap / After**

  The *Gap* distance is the distance left in between labels. *After* defines after how many labels the gap should be entered. A value of 2 e.g., will result in two labels without gap, then the gap, then again two labels without, etc.

- **Distort**

  The *Distort* value allows you to define a distortion for every repeat block separately.

- **Bleed**

  The *Bleed* defines how much bleed is used to the outside of the repetition. So there is a different setting for bleed in between jobs and around the repetition. It's ignored if the *Keep Bleeds* toggle is switched on. Nexus will always check if there is enough bleed in the selected file. The trim box size is subtracted from the bleed box and divided by two. This size has to be bigger than the bleed, otherwise Nexus will give an error message.

- **Keep Bleeds**

  When the *Step* distance is smaller than the bounding box of the ArtPro file, the different labels will not overlap, but they will be cut off. *Keep Bleeds* forces bleeds in the original file to be used, even if there is no place to put them. This function can be useful to generate repeats of round labels.

- **Angle**

  Using the Angles popup, you can define rotation for the labels. The options next to the angle, allow you to set labels to switch direction every other label, either vertical or horizontally.

- **Cut marks**

  If the *Cut marks* option is on, cut marks will automatically be generated around the repeat block. The cut marks are generated on the used box size. When bleed is applied in between labels, double cut marks automatically appear. The cut marks are filled with registration color.

8.43.2 Pattern

This option is used to make nested S&R. This means that the second row or column is shifted each time and the step distance can be decreased so the labels fit into one another.

- **Pattern**

  Using the *Pattern* buttons, you can define whether every second column or every second row should be shifted. The first button creates a rectangular pattern, with no staggering.
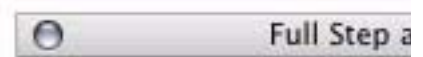
The second two create most basic staggering: every second row or column will be shifted, and will contain 1 label less than the first row or column. The next two buttons will generate rows and columns with the same number of labels.

The buttons for round labels will shift round labels into each other to save space.

- **Stagger offset**

  The *offset* can either be half of the step size or any user defined value. When using the Round Label pattern, the offset is automatically derived from the size of the job and can no be changed.

- **Continuous Stagger**

  Without the *Continuous Stagger* option, all even rows or columns will be shifted, the odd rows or columns will remain unchanged. When using the *Continuous Stagger* option, every row or column will be shifted in regard to the previous.

- **Include Partial Labels/Do not clip partial labels**

  When using the *Include Partial Labels* option, the gaps created by the shift of a row or a column, will be filled up with the part of the label as if the repeat was continued outside the job size. When setting the *Do Not Clip Partial Labels* option on, these labels will be placed completely instead of just a part.
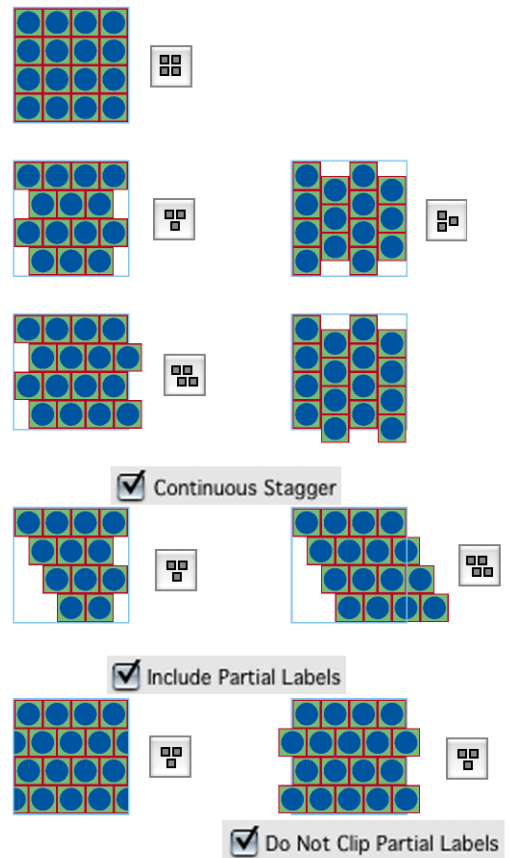
8.43.3 Advanced

- **Page Box**

  Before stepping the selected file, it is possible to decide which box size needs to be used. Default, this value is set to *Trim Box*. When *Page Box* is modified, the values in *step distance* and *size* will automatically adapt.

- **Place Single-Separation ArtPro File in Single Sep.**

  This option defines how to handle repeating ArtPro files with only one separation. If the option is switched off, objects in this AP file with 100% of the single separation, are considered to be registration color, and thus will get 100% of every ink in the ArtPro file after repetition. If this option is switched on, the file is placed in one single separation instead.

- **File & Font Settings**

  will give access to the root folders, folder mapping, and fonts folders when the file to be stepped is an ArtPro file. For a description of this function, please refer to the Open ArtPro File activity.

- Color Management Settings

  This setting will determine if color management has to be applied for the step and repeat job. When enabling color management, it is possible to select a color management settings file, previously saved by ArtPro. This file contains all ICC profiles and settings to determine how color has to be treated throughout the rest of the workflow (e.g. proofing of the step and repeat document), including ICC profiles for proofing, printing, etc....

8.44. Nested Step and Repeat

The Nested Step and Repeat activity is based on the PowerStepper module in ArtPro.

It is used to make step and repeat based on the MFG (ArtiosCAD), CFF2 or DDES information. MFG, CFF2 and DDES files are generated on CAD/CAM systems to create die cuts (e.g. Dimensional Impressions' "Score"). Through this activity these files can be used to automate the step and repeat process without having to calculate positions, rotation and nesting. For a full explanation of the S&R Nested functionality, we refer to the ArtPro Manual.

The activity typically needs two file dependencies:

- The CAD file
- The ArtPro file

The CAD file can also be specified in the activity settings.

8.44.1 Nested Layout File Format

Instead of selecting an image, the user can also select a 'layout' file, that contains the names of several images, together with information on where they should be placed.

Layout files are tab-separated text files with a small header. Here is an example:

```
ArtPro Nested S&R Layout V1.0

JokerBoxBerries.aw                    1-35
JokerGreen3.aw                        46-7
```

The first line identifies the file as a 'layout' file that can be used for Nested S&R. It is followed by an empty line. Each following line contains the name of an image and the station numbers at which these images should be placed. In the example, the file 'JokerBoxBerries.aw' is placed at station numbers 1 through 3 and 5, and the file 'JokerGreen3.aw' is placed at station numbers 4 and 6 through 7.

When using a layout file, you can switch the option "Filenames in Layout File must match" off, and provide the files to be placed using file dependencies to the activity.

8.44.2 Nested Layout in NeXML

The layout can also be defined in a NeXML file, and thus be defined from shuttle. When saving the parameters as NeXML, the NeXML will contain parameters for the file name and range. Here is an example:

```
<Preference Key="NLis" Name="LayoutFiles" Type="List">
  <Preference Key="1" Type="Record">
    <Preference Key="FTPc" Name="Picture" Type="String"></Prefer-
ence>
    <Preference Key="NRan" Name="Range" Type="String">1-3</Prefer-
ence>
  </Preference>
</Preference>
```

This works the same way as using a Nested Layout file.

8.45. Set Station Numbers

The Set Station Numbers activity is based on the Station Number part of the Step And Repeat Nested activity. It allows to set station numbers on an existing step and repeat file. For more info on Station Numbers, we refer to the ArtPro manual.

It is possible to define the Origin for the Offset, using the square buttons. By default, this is set to place the Station Numbers centered on the bounding box of a station.

The File Naming Template can be used to define the text of the Station Numbers to be added.

8.46. Grid Step and Repeat

Similar to the other step and repeat activity, this activity gives access to ArtPro's grid step and repeat module from within NexusProcessor.

The grid step and repeat will allow to create a repetition of different ArtPro (or other supported) files with the same size that are all placed in the same folder. The one-up files can also be defined using file dependencies towards the Grid Step and Repeat activity.

This repetition can be executed with or without a layout file, which is actually a simple spreadsheet containing the positioning of the different files.

For more information we refer to the Grid Step and Repeat section of the ArtPro manual. A full explanation on File & Font Settings and Color Management Settings can be found in the Open ArtPro File section and Chapter 6. on color management.

8.47. Trim & Bleed

This function will calculate trim and bleed for all objects in the file.

The activity is typically used in Step and Repeat workflows and has been described in the Nested Step and Repeat section.

8.48. Separate

This activity will separate the file or repetitions into its separations. The separations will be placed under and next to each other in a single ArtPro file. You can define the Vertical and horizontal Gap to be left in between the separations, and the number of columns to be used (i.e. the number of separations to be placed next to each other). In order to print a "separated" file like this, the option "All Separated Pages on Same Film" should be switched on, in the More Settings of the Print to File activity.

8.49. Export PDF

This activity will convert the ArtPro file which is in the memory of Nexus to a vector PDF file. Default this PDF file will be written in the job directory. If the PDF file needs to be written to another location the Copy File Activity should be used after the Export PDF activity.

For a full description please refer to 7.9. Export PDF on page 218

8.50. Print to File

The Print to File activity will convert the ArtPro native file format to a composite or separated EPS file, depending on the Device Type that has been chosen. For a full description please refer to 7.10. Print to File on page 227.

8.51. Save ArtPro File

This activity will save the currently processed file to an ArtPro file on disk. For a full description please refer to 7.11. Save ArtPro File on page 240

8.52. Export CIP3

The Export CIP3 activity will create a CIP3 file of the active job.

CIP3 is a file format used to transfer data about a specific file through the production process. Besides a preview which can be used to extract ink key settings, this CIP3 file contains information concerning separations, ink coverage, job dimensions, etc.…

Two main settings are present: the oversampling of the preview as well as the resolution of the preview that will be included in the CIP3 file. The Edit Template button will determine naming and location of the CIP3 file to be saved. For a full description of the Template mechanism please refer to the Copy File section.

8.53. Export Illustrator

This activity will export an Illustrator native file (up to Illustrator 7.0) from the current ArtPro document.

8.53.1 Include traps

will determine if traps are included in the Illustrator file

Multistep gradations are not converted into Illustrator multistep gradations but are exported as CT's with the resolution as determined by this input field.

8.53.2 Compatibility

will determine whether an Illustrator 7.0, 5.0, or 3.0 file is exported.

Depending on this setting, a number of restrictions apply:

- **Export to Illustrator 3.0 was developed for line art only:**
  - text is not supported, use the Text to Paths activity before this export.
  - images are not supported.
  - gradations are not converted, only the first color of the vignette is exported.
  - multistep gradations are not exported.

- **Export to Illustrator 5.0 does not support TIFF images:**
  - placed TIFFS, mapped TIFFS and internal images are not supported.
  - non linear multistep gradations are not supported.

- **Export to Illustrator 7.0**
  - mapped pictures are exported as CMYK TIFF images

Transparencies are not output using Export Illustrator. Use the Flatten Transparencies activity if needed.

8.53.3 Downsample Images

will sample the images in the file 2 times, 4 times, 8 times, or not at all.

8.54. Ink coverage

The Ink Coverage activity calculates the surface ink coverage of the document and saves the information as a text file on disk. The Template button again will determine the naming and location of the file.

Per separation in the job, a value will be given as a percentage and as a surface coverage (e.g. square mm). Equally a total surface value will be given.

Note that in the case of pictures, ink coverage only works with when they are mapped pictures or when placed ArtPro pictures contain a separated preview. In other cases an average value will be used. When using ArtPro, this average value can be adapted in the paint style.

The only relevant setting in this activity is the samples per inch that will be taken, which will determine the accuracy of the ink coverage.

After running the job, the results can be seen in the Job Editor.

8.55. Export Picture List

The Export Picture List activity creates a Picture List file from the Step and Repeat file. An option allows to define whether mapped pictures should be included or not. The File Name Template allows to define name and location.

A Picture List can be used in the Import Picture List activity in Nexus or in ArtPro.

8.56. Gravure Jobticket

Gravure Jobticket offers export for Gravure systems from Hell Gravure.

The resolution and oversampling rate defined in the activity is used if it can not be retrieved from the jobticket. Each Jobticket and thus every separation can have a different value.

The PackBits compression is only applicable for separations with a resolution above 600 dpi, and without oversampling. In any other case, the TIFF will be compressed using LZW or (if the "Compress"

option is off) without compression. PackBits compression results in lower compression rate, but will be calculated much faster than LZW compression, so it is the best solution for high resolution files.

The Gravure Jobticket also checks if the separation count in the Art-Pro file matches with the ticket count in the folder.

For more specific information, contact Hell Gravure.

Chapter 9. Nexus Basic Rip Activities

All Nexus Rip Activities may be used to construct or modify a Rip workflow from its basic components. In practice it will be usual to start with a predefined workflow, and then add or remove specific activities using the Nexus Flow Editor. See Chapter 3. Defining Workflows on page 89.

For example, a typical workflow might involve Interpreter + Merge vector OPPO files + Rasterize PSTI file + Trapping + Assemble a screened bitmap + Agfa Highwater Expose. Appending these activities in order to an existing NexusProcessor workflow is a simple way to create complete Nexus workflows. Another way of doing this is to start with a predefined Autotrap workflow, and then insert NexusImport and Processor activities in front.

9.1. Convert EPS to PS

This activity may be used in order to convert a composite EPS file into a PS file suitable for downloading to a PostScript Printer. See 5.5. Convert EPS to PS on page 162.

9.2. Interpret

The Interpret activity is used to convert PostScript or PDF to the Internal OPPO format, in preparation for the rasterization, later in the workflow.

The resulting files from the interpreter carry the extension OPO, and are an intermediate vector file format unique to NexusRIP. The OPO files are preseparated and can optionally be merged by the merger. (more details can be found in 9.3. Merge OPPO Files on page 303). This PostScript interpreter is Level 3 compatible and also supports PDF 1.3. In the case that an EPS file has to be processed, it will be converted into generic PostScript, using the Convert EPS to PS activity.

As most workflows start with the interpretation and conversion of a PS, EPS or PDF file, the Interpreter activity is an important part of the workflow definition.

9.2.1 Fonts

- **Fail if missing fonts**

  Files meant to be outputted on a proof or film typically contain all of the fonts required for this output. However, this is not always the case. When a PostScript file has been printed to a file, the fonts may have been explicitly excluded.

  The same thing can happen if a PDF file has been created, using Acrobat Distiller or another application, without embedding the fonts. EPS files will also not include the font information.

  If the PostScript or PDF code requires fonts that are not present, and the required fonts cannot be found in the Font Paths directories (see next topic) the job will fail with missing font errors as shown, if this option is enabled.

  In the case of a missing font error, the job will not fail immediately, but the interpreter will process the whole PS file in order to be able to come up with the complete list of missing fonts in the job error window.

  In some cases it may be appropriate to allow the RIPping process to continue even if the fonts are not available. E.g. if you only want to check the graphics and not the text on a color proof, it is not necessary that the required fonts are used on the proof.

  Disabling the Fail If Missing Fonts option will accomplish this. The job will not fail in the interpreter because of the missing fonts, but a warning sign will appear on the job in the job list, and clicking the errors button will show the same list of missing fonts. In this case all missing fonts will be replaced by Courier, which should be obvious on proof immediately.

- **Disable Type 1 font hints**

  Hints included in Type 1 fonts can in some rare cases cause slight differences in the processing of fonts between Nexus and Adobe applications. Enabling this option will solve this by disabling hints.

- **Font paths...**

  When a file is received that does not contain all the necessary fonts and there is no possibility to include them, the font search path facility can be used to point to a directory, where the fonts can be found. Clicking the font path button opens the font search path window. At the top of the window, a scrollable list shows the full paths of directories that may contain fonts. Nexus assumes that there is a default directory which is called MacFonts. When a file is processed that does not contain the fonts, the directories,

and (if the option is enabled) their subfolders, will be searched for these fonts. Note that these folders may contain PostScript as well as Truetype fonts.

If your customer provides you with PS, EPS or PDF files that don't contain embedded fonts, and the necessary fonts are delivered separately, it is possible to set up a directory on the server to store these fonts, or to copy the fonts in the default MacFonts folder.

It may be convenient to change the default directory, or to define more then one directory for fonts. Adding a new path is achieved by typing the full path name in the text field area, and pressing the Add button. The entered name will then appear in the list and be removed from the text field. Alternatively, the browse button may be used to locate the required folder through the Nexus Select Remote Folder Window. The located path will appear in the text field and can be added as above. Superfluous font folders may be removed by selecting them in the list and pressing the remove button.

When all necessary font folders have been added, pressing OK will complete the process. Pressing cancel will leave the existing list unaffected. If appropriate, fonts may be grouped into subfolders within a font folder. To be accessible, the Search Subfolders box must be checked for it. If the same font name is used in different subfolders, Nexus will use the first one that it finds, which is not necessarily correct!

9.2.2 Color

- **Use colors in job**

  A PostScript file can contain *%%CustomColor* comments, which can contain a color name (e.g. PANTONE™ or other special colors), including the CMYK and RGB equivalent. These CMYK values can be used by Nexus for proofing and trapping, and the RGB equivalents are used to preview. In normal cases, this value should be used, so the option should be enabled.

  However, in some cases, users may want only values entered in *Color_Lib* or *User Color_Lib* to be used, and would prefer to receive an error if a color is not found there, rather than using the info enclosed in the PostScript file. In that case, the option should be disabled.

  If the option is off, the colors from the job are not used and if the color is not available in the Color Lib it will come up as "undefined".

  With the option on, the colors from the job are used if the color is not available in the Color Lib. It will not come up as undefined.

- **Fail if RGB**

  When this option is checked, the interpreter will fail if an RGB image is detected in the Job. Currently, only RGB EPS images are detected

- **Color Mode**

  When creating PostScript files using Nexus PPDs, it is possible to define the Color mode through a popup in the PPD. The PPD option is called Colormodegroup, and shows the same options as shown here. If however, PostScript code has to be processed that was not printed using a Nexus PPD, when importing EPS files into a Nexus workflow or when composite and/or monochrome output is required, it may be necessary to change the color mode in the interpreter settings.

- Preseparated:

  Has to be selected when the PostScript code is known to contain separated PostScript. Normally this is not necessary, because this is usually reflected in the presence of comments in the file (e.g. %% Platecolor Cyan).

- PostScript Controlled:

  This is the default setting, and means that whatever color mode is defined in the PostScript file should be used.

- Composite All Colors:

  Select this when composite PostScript has to be processed to produce all process and spot colors present in the job.

- Composite to CMYK:

  Used to convert all spot colors in a composite job to process colors (CMYK). This process is accomplished more efficiently through the interpreter, than in a later stage during the proof activity.

- Composite (Black Only):

  Makes a page for every composite input page, selecting only the black channel of any input colors. For CMYK only jobs, this is equivalent to just printing the black plate. For jobs, containing spot colors, it is equivalent to converting the spot colors to process before printing just the black plate.

- Composite Monochrome:

  This option must be selected to represent the composite input data as Black only. The conversion takes the relative darkness of the process colors into account. It emulates the behavior of a monochrome printer or laser writer.

- **PANTONE™ Renaming**

  Using this options, PANTONE™ separation names can be re-named, offering 4 possibilities: *leave unchanged*, *change CVx to CV*, *change CVx to x,* or *remove CVx*.

- **Color Management**

  The *Color Management* section in the *Interpreter* has been extended, offering all functionality to control color management on import.

  In the *Input* section, a default profile can be selected for both RGB and CMYK. The pop-ups below allow the user to define what profile will be used for what kind of object: For CMYK Lineart and Images, you can choose between *No Conversion*, *Default Profile*, *Use Embedded Profile* or *Select Best Profile*. For RGB images and lineart, you have the same options, except for *No Conversion* being replaced by *Use PostScript Conversion*, as Nexus works internally in CMYK space, so RGB must always be converted.

  Select Best Profile means Nexus will use the embedded profile. If no embedded profile is used, the *Input Profile* will be used.

  For CMYK Lineart, some specific settings can be made. Of course, if CMYK Lineart is set to *No Conversion*, the additional options are redundant, and will be gray.

  You can define how to handle specific types of colors:

  - *Single Separation Colors*: colors having a non-zero value only in one channel

  - *Blacks:* single separation colors having the non-zero value in the black separation and Rich blacks, having 100% value for K, regardless of the value for CMY

  - *Mixed Colors:* colors having a non-zero value for 2 or more channels).

  For every of these colors, you can choose between *Apply profile*, *Preserve Solids* (i.e. not changing the values of solid colors, whereas solids are colors whose channels are all either zero, overprint or 100%), or *Preserve All*, meaning no color management will be applied.

  In the *Output* section, the working space can be defined, and the rendering intent.

9.2.3 Page

- **Keep Orientation**

  The required page orientation is normally specified in the Bander, Proofer or Separation activities, depending on the requirements for viewing PSTls and outputting to the different proofers and image- or platesetters.

When printing landscape from some applications, the rotation may be performed by swapping the page dimensions and rotating all the objects in PostScript. In this case the output will be performed as requested. But if the page rotation is requested using the orientation parameters in the setpagedevice or setpageparams, it will be undone by the interpreter by default. Checking the Keep Orientation check box will keep this orientation anyway.

- **Set default PS Page Size from %%BoundingBox comment**

  If switched on, this option allows to use the page size defined in the %%SetBoundingBox command in the PS file. The option was added to make it possible to deal with the 0.01% of files from strange applications that don't use the setpage command.

- **Default Page width and Default Page height**

  The default page dimensions for the interpreter are rarely required, because PostScript almost invariably contains a page size definition. If in a special case, no such definition is available in the PostScript file, the default size will be used as defined here. Depending on the preferences settings, it will be shown in inches or millimeters.

- **Slug Params...**

  NexusRIP has the ability to add slug lines to files on a per-workflow basis. The slugs are generated by the Interpreter activity, and will apply to all downstream outputs.

  Typical information contained in a slug line includes job name, page, separation name, user information, resolution, screen ruling, dot shape, angle family, etc....

  A number of formatting options are available to determine how the slug line has to appear on the file. Note that the slug is physically added to the file at the time of Interpreting the data, e.g. if a Make Separation activity is retried with different parameters, these new parameters will not be included in the slug line.

  In essence, the facility involves adding a number of new properties to a slug record in the interpreter activity. A special patch file in the RIP (./Nexus/Options/02setpagedevice.ini) checks if any of these properties are defined and, if they are, makes the required changes to the page. Some changes, such as margins, affect the page size and image orientation, whereas others simply add information to the page.

  The Slug Parameters window is opened by pressing the Slug Params... button in the Interpreter window.

- Load, Save, Defaults

  The settings of the Slug Parameters can be saved and loaded, using the Save and Load buttons. This allows to store your Slug Parameters and bring them from one system to another, etc. Default resets all changes.

- Left Margin, Right Margin, Top Margin, Bottom Margin

  These enable each edge of the image to be extended independently in current preference units (e.g. inches). This may be required to provide space for slug data, or just to ensure that images are separated on film. Margins may be defined even when no other marks are put on the film.

- Scale Factor Width, Height

  Scaling distortion may be applied to a page independently in height and width. This scaling will also be applied to margins and any slug marks put on the page.

- Add Crop Marks, Add Register Marks

  These may be added if required by checking the corresponding boxes. They are based on the style used by QuarkXPress, but Line Width in points may be controlled. For crop marks to show on output, sufficiently wide margins must be specified.

- Rotate 90 degrees, Mirror

  Page rotation and mirroring are typically defined in the printing application or within the workflow. However, if this is not possible or convenient, these transformations can be done as part of this facility.

- Show as metric

  If this box is checked, slug parameters (e.g. page size) can be output in either metric or imperial units. Note that this is not determined automatically by the preference units and appropriate labels (e.g. lpcm) must also be specified.

- Job/Page/Separation

  Information relating to the job will be shown in the top margin if this box is checked. Each item of information may be prefixed with a defined prefix label. If the box is unchecked, the prefix fields will be invisible. This also applies to other items of information.

  Where composite output is created, separation information will be superimposed. All slug text will be output in the defined Font and Size and at the defined offsets (see below).

- User Information, Creation Date

  If these boxes are checked, Page Size, User ID (if known) and Creation Date will be output in the left margin with the defined prefixes.

- RIP Resolution, Output Resolution

  If these boxes are checked, resolution values will be shown in the right margin with the specified prefixes and suffixes. The RIP (i.e. interpreter) resolution will always be known, but the output resolution will only be available if the Assembler resolution field is unlocked in the workflow and a PPD option has been made. Unless this is done, the interpreter will have no access to this property. The same suffix is used for both types of resolution.

- Screen Ruling, Dot Shape, Angle Family

  If a single screen ruling has been defined for a job, and was set as a PPD option, this may be shown in the right margin with the specified prefix and suffix. This option is not available when using object screening, nor if the ruling was locked in the workflow such that no PPD option was generated. The same constraints apply to the output of dot shape and angle family. If these parameters are not available in the PostScript environment they will not be shown, nor will the prefix labels.

- PostScript Font, Size (points)

  All slug text will be output in the specified font at the specified size. The font must be available and would typically be Courier or Helvetica. If no slug text is defined, these fields will be disabled.

- Baseline Shift, Indent

  These values (in preference units) define the start position within the appropriate margin for the start of the text. Positive value would normally be specified so that all text will fall in the defined margins. Negative values will place text within the page.

- EXAMPLE:

  The example below shows a composite PDF output with slug lines applied. Crop Marks and Register Marks have been added as well as Creation date, document size and output resolution. Separation names are overlapping.

9.2.4 Links

- **Fail if missing links**

  When running jobs on an imposition workflow, or on any other workflow, using link files, it is necessary to locate the already processed files from which the link file has been derived. If the fail if missing link box is checked, and the page referenced in the link file cannot be found, the interpreter will fail. The PostScript file will be processed completely however, to ensure that the full list of missing pages will be displayed on the job error window.

  If this option is left unchecked (not recommended), the job will run, but pages referenced by link files will not be included. In the job list, a warning will be generated next to the job, but disabling this option should only be used for test purposes.

- **Support static links**

  Link files (created by any of the Page workflows) contain the full path of the target page file (which can be OPPO, PSTI or TIFF format). When processing a job containing one of those links (typically in an Impo workflow), Nexus would only use the end of the path (i.e. the filename) and use it in any of the paths defined in the *Interpreter Page Paths* if there are any. The first match found this way, is the one that will be used.

If no match is found, Nexus can use the full path defined in the link file (the so called *Static Link*). If this path is valid and points to a file, and the *Support Static Links* option is on, this file will be used.

If the path does not point to a valid file, an error or warning will be generated. This option should be switched off to make sure that only files from the Page paths are used, and an error is generated if the page files cannot be found there.

- **Page paths...**

  The ripped files, generated through the various page workflows are stored in one or more page folders, as specified in the respective page workflows and their destination paths. When processing imposition and Step and Repeat jobs, containing link files, the matching pages have to be found. The different page directories that may have been defined for the interpreter must be defined through the page paths. The page paths button opens the Page Search Paths window as shown here. This window behaves in exactly the same way as the Font Search Paths window described earlier. New paths may be added explicitly by typing them in the text field and pushing the Add button. Browsing to an existing folder and selecting it may be easier. Afterwards, folders may be removed or defined as hierarchical. If the checkbox in front of a path is on, its subfolders will be searched as well.

  The default search directory is the Pages folder, automatically created in the NexusRip folder. For example: D:/Intel_Mac/Pages.

9.2.5 PDF

- **Enable PDF Flattener**

  If this option is on, a 1.4 or 1.5 PDF file will be flattened into a PDF 1.3 file first, before being processed by the interpreter. The interpreter automatically takes the optimal parameters to flatten the PDF 1.4 or 1.5 file.

- **Fail If Unimplemented PDF features**

  If the Interpreter encounters a PDF file containing unimplemented features, the workflow will fail if this option is switched on.

- **PDF overprints**

  If overprints are used in PDF documents the display in Acrobat can look different to the output from the RIP. This popup provides some control over PDF overprints in Nexus.

- Standard:

  Uses overprints as they are intended. Even if the overprints are not shown correctly in Acrobat, the PDF will be separated correctly by Nexus.

- Disable:
  RIP output is the same as Acrobat display

- Treat gray as black:
  This option is to be used in a special case: Objects using the Device gray Colorspace always knockout the underlaying separations and thus ignore the overprint settings. Treating these objects as Black will force them to recognize the overprints.

- **Page Box popup (PDF Only)**
  This popup chooses which one of the five PDF page boxes (Media, Crop, Bleed, Trim and Art) will define the boundary of the job to be ripped. See the PDF reference for an explanation of these page boxes.

9.2.6 Advanced

- **Enable PS level 3**
  By default, the interpreter supports PostScript 3 functionality, including smooth shading. There may, however be situations where it may be appropriate to disable this functionality and only support level 2 PostScript. This is accomplished by disabling the Enable PS Level 3 box. This approach can be useful if problems with PostScript 3 files are encountered, but only where the PostScript checks the language of the interpreter and offers an alternative implementation. In some cases, this will not be possible and the job will either fail with a PostScript error (for example on a PostScript 3 operator such as shfill) or will produce a page showing a diagnostic message, such as: "This job requires PostScript 3". Where a PostScript level 2 alternative implementation is available, there is likely to be a performance penalty.

- **Log all output**
  The PostScript language has the capability to output information to a file using operators such as == and Pstack. Although not particularly useful in an operating environment, this mechanism is very valuable as a debugging aid. By checking the Log All Output check box, any PostScript code that results in output to stdout will be included in the interpreter log file.

- **Dump buffer on error**
  If this box is checked as recommended, in the event of a PostScript error a detailed listing of PostScript stacks will be output to the Interpreter log file. This may be useful for diagnosing PostScript problems. When a PostScript error occurs, the Interpreter icon in the job edit window will show a red triangle which when clicked will open the Job Errors window. This will indicate that the error occurred in the Interpreter and it will report the error code (e.g. undefined) and the Offending Command

This information by itself may be sufficient to diagnose the fault, but if not the extended error handler (provided by the ini file called exterror.ini) will cause the execution and operand stacks to be dumped to the Interpreter log file. This log file can be viewed by selecting interpreter from the Modules window and pressing the View Log button.

However if this information is still not sufficient to locate the problem, it is sometimes useful to be able to locate the exact point in the PostScript file where the error occurred. This is made possible by checking the Dump Buffer on Error option in the Interpreter window. This has the effect of generating a dump of the PostScript code just before, and after the point where the error occurred. As this may result in the size of the Interpreter log exceeding the buffer size, used to display log files, it may be necessary to view the log file on the server computer. (e.g. using Notepad).

- **Default Resolution**

   The default resolution for the interpreter on the workflow would normally be the same as the resolution at which the Assembler makes screened separations. In the case of an Avantra this could be 2400 dpi. This value will be used by any PostScript algorithms that require the device resolution to generate appropriately scaled objects. PostScript is generally device independent, but there are situations where the output needs to be optimized for the output resolution.

   Some well known situations are the processing of hairlines and fine patterns, but also barcodes created with special applications may require the resolution during interpretation to avoid rounding errors because of a different output resolution.

   When there are two output devices in one workflow, having different output resolutions, the ripping resolution cannot be optimized for both. Choosing the higher resolution will not compromise the quality of the lower res. devices (proofers). The default value in the interpreter is 3810 lpi, which is in most cases sufficiently high.

- **Default ruling**

   Besides the default resolution, now you can also set the default ruling, in lpi.

- **Preps Layout Place**

   If this option is on, a plate will be generated, containing marks based on the comments inserted by Preps. It is based on an init file which was used with earlier versions of Nexus.

9.3. Merge OPPO Files

Merge is used to merge separated OPPO files made by the interpreter into composite form, in preparation for trapping and or proofing. Therefore, the merger is part of almost all workflows. Only basic and imposition workflows, containing no composite proof, may exclude the merger.

When separated PostScript is processed by the interpreter an OPPO file is generated for each separation. On a PSTI workflow (or any one which requires a composite file to be created, including DCS) it is necessary for these OPPO files to be merged together into a single OPPO file.

Where a PostScript object has been defined in more than one color, the identical OPPO object may be present in more than one of the OPPO files created by the interpreter. The OPPO merger processes all of the separated OPPO files in parallel and attempts to combine otherwise identical OPPO objects. This is normally successful and typical results in a composite OPPO file that is only slightly larger in size than a single separated OPPO file.

9.3.1 Overprinted Strokes

Sometimes, objects (such as trap areas) are defined to overprint by creating them in just one color. The merger is capable of detecting such objects and provides the opportunity to remove them or cause them to knock out underlying objects, depending on the Overprinted Strokes popup select. However, this popup should be used with great care, because it can sometimes result in the unwanted removal of objects (such as Quark mixed color blends). The default setting is to leave the original specifications (no action).

By selecting the remove option, unwanted traps that have been generated by applications, such as Adobe Illustrator and that would otherwise interfere with the raster trapping of PSTI, will be deleted. An example of this is shown below, where some light colored object has been trapped in a darker background. By removing the stroke, the original object outline is restored. The last image shows the result of a knockout which may be more appropriate than removing the stroke in some circumstances.

9.3.2 Buffer limit

When attempting to merge very complex OPPO files, it is possible for the Merger to fail to merge every object completely. The merger activity will finish, processing of the resulting merged OPPO file will continue and this will not necessarily result in incorrect output. However, under these circumstances, it may be necessary to increase the size of the object buffer in the activity editor to more than the default value of 10000 objects. The merger activity should then be retried.

9.3.3 Identify Blends

When setting up a TIFF/IT Out workflow to create TIFF/IT files with a LW part, this option has to be checked in the Merger. In all other cases, the option can be left unchecked. The option detects vignettes and shadings that do not use the standard PS Level3 shading operators and converts them into smooth shadings. If you don't identify the blend in the merger and you make a TIFF/IT with an LW part, unrecognized blends will be a part of the LW. This can cause the number of colors in the LW part to reach the limit. If you identify the blend, it will be put in the CT part, leaving the LW part unchanged.

9.3.4 Fail on empty page

If this option is enabled, the Merger will fail if it encounters completely empty pages.

9.3.5 Output

When editing the merger activity in the workflow edit window, the Output button may be used to configure the naming of the merged OPPO file, using the File Naming Template. See 3.6. File Naming Template on page 132. This may be useful on Vector Page workflows.
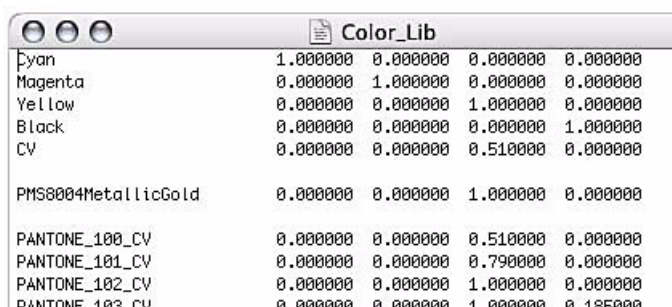
9.3.6 Running a job through the merger

When a job is run on a workflow that contains the merger, editing the merge activity in the job edit window will result in a larger edit merge window, with a box containing a scrollable list of color definitions for all separations comprising the page. For each color in the list, percentage values are shown for each of the process colors. This color combination defines how the color will trap, proof and otherwise be displayed.

The CMYK equivalents of PANTONE™ colors are stored in a file in the RIP directory called Color_Lib. Each line of this file contains 5 fields, the first is the color name (with spaces changed to underscores) and the remaining ones defined the fractional components of
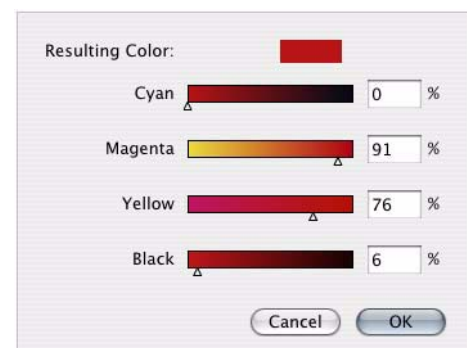
Cyan Magenta, Yellow and Black respectively. When colors are looked up in this file, the CV entry is used when there is no match on CVU, CVS etc.

```
000                          Color_Lib
Cyan                      1.000000  0.000000  0.000000  0.000000
Magenta                   0.000000  1.000000  0.000000  0.000000
Yellow                    0.000000  0.000000  1.000000  0.000000
Black                     0.000000  0.000000  0.000000  1.000000
CV                        0.000000  0.000000  0.510000  0.000000

PMS8004MetallicGold       0.000000  0.000000  1.000000  0.000000

PANTONE_100_CV            0.000000  0.000000  0.510000  0.000000
PANTONE_101_CV            0.000000  0.000000  0.790000  0.000000
PANTONE_102_CV            0.000000  0.000000  1.000000  0.000000
PANTONE 103 CV            0 000000  0 000000  1 000000  0 185000
```

If the color is not defined in the Color_Lib file, a definition for it may be present in the PostScript file itself, in the form of CMYK Custom Color comments, in which case these values will be used.

```
%%BeginDocument: NoName
%!PS-Adobe-3.0
%%BoundingBox: 0 0 596 842
%%HiResBoundingBox: 0.000 0.000 595.278 841.890
%%MediaBox: 0.000 0.000 595.278 841.890
%%Title: Untitled 1
%%Creator: ArtPro 6.5
%%For: IV
%%Extensions: CMYK
%%DocumentProcessColors: Cyan Magenta Yellow Black
%%DocumentCustomColors: (grasgreen)
%%+ (PANTONE 185 CVC)
%%CMYKCustomColor: 0.59 0.00 1.00 0.07 (grasgreen)
%%+ 0.00 0.91 0.76 0.00 (PANTONE 185 CVC)
```

If no definition for the color is available, the merging process will be put into a held state (i.e. spool icon shown in the job list), providing the operator with the opportunity to specify how the color is to be proofed and trapped. This is done by editing the merger activity in the job list.

When this is done, the Select Color window will open and the appropriate values for Cyan, Magenta, Yellow and Black defined, either directly into the text boxes or by using the slider bars. An approximate representation of how the color will appear on the proof is given in the Example patch at the top of the window. The colors that would be produced by each slider bar are also shown.

When the desired color has been specified, the OK button should be pressed. An option will exist at this time to save this color in a supplementary definition file, called UserColor_Lib. If a color definition cannot be found in the Color_Lib file, this file will be searched before check for a PostScript comment definition

9.4. Assemble Separation

Assemble separation is used to generate high resolution separation files in the format required for output, which is typically screened TIFF.

The dialog, which is the same for all Assembler activities, adjusts to the options already selected, e.g. when changing the Format option from TIFF to EPS, the button next to it (and the corresponding dialog) will change from "TIFF Options" to "EPS options".

9.4.1 General

The General settings at the top of the dialog contain selection of Device and its resolution, Template settings, File Format and file format dependent settings (TIFF/EPS/PDF settings), More Options and Exclude/Include Colors. The output will be 1bit unless the Screening is set to "Unscreened"

- **Device / Resolution**

  The Device popup is used to select the target device for the data. The popup references the device context file which contains all information on the different output engines. As explained earlier, this context file may be edited to adapt the device list to the customers situation.

  If a device is selected from the list through the popup, the resolution popup will be adapted so that only valid resolutions will be selectable. If the desired device is not shown, a new device may be added tho the device file. If no Device is selected, the required resolution should be entered in the text field.

- **Edit Template**

  The Edit Template allows to define the name to be used for the output files. See 3.6. File Naming Template on page 132

- **Format**

  The Format menu allows to set the file format for the output files: TIFF, EPS, PDF, Scitex CT or Scitex Line work. Depending on the settings here, other options become available

9.4.2 TIFF Options

- **Compression Mode**

  The TIFF options allow to set Compression Mode. This would normally be set to Packbits for TIFF (for optimal performance) and Flate for PDF and EPS. If Flate causes problems with EPS, Packbits can be used. CCITT G4 compression can result in smaller files but there is a performance penalty to be paid when com-

pressing and decompressing these files, which could cause problems when driving devices directly. None will result in very large files, but can be useful when diagnosing problems.

- **Tile Size**

  The Tile Size should be set to a value other than Don't Tile only when it is known to be advantageous for the receiving device, in which case it would typically be set to 2048.

- **TIFF Strips**

  The recommended value for this option is 64K or 512K. A TIFF file is always forwarded to the imagesetter in packages of a certain size. With this option you can choose the size of a package. You can always use the recommended value, but some devices will require a specific package size (e.g. Aabach and HelioKlischoGraph). In that case, the size can now be adjusted.

- **Metric Units**

  If the Metric box is checked, all measurements for TIFF tags will be in millimeters rather than the default unit of inches. This may be appropriate for devices that require metric resolution (e.g. some Fuji imagesetters). Some devices (e.g. ECRM) may not accept metric units.

- **Include Color Tag**

  If the Include Color Tag option is on, a tag is generated, containing the name tag for the specific separation. Some proofers, such as the Creo Spectrum, can use this tag to map the TIFF to the correct separation. Normally, TIFF readers which don't understand this tag should ignore it, however if it errors on this tag, the option should be switched off.

9.4.3 EPS Options

- **Compression Mode**

  See 9.4.2 TIFF Options on page 306

- **Binary**

  By default EPS Output will be binary. If binary codes cause problems e.g. on a proofer's RIP this may be unchecked to generate ASCII code. a check to set to Binary data (instead of Ascii).

- **Allow Scaling**

  The Allow Scaling option is typical for DCS output files. If it is not checked, then any attempt to place this DCS file in an application and scale it before printing will result in failure. This is intended primarily to prevent the inadvertent scaling of screened DCS files. Scaling of these DCS files would result in distorted screening.

If the "Allow scaling" box is *not* checked, then Nexus puts some PostScript code into the DCS sub, which will cause a PostScript error if the file gets scaled in the re-rip process. If the box is checked, then this code is not included in the DCS.

As a consequence this option should always be unchecked when creating 1 bit depth DCS sub files. When creating 8 bit depth un-screened DCS files, this option should be checked to allow transformations in applications.

- **Include %%Page Comments**

Comments allows a PS comment, placing information about every page of a multipage file in the PostScript file. As this is a separated output, this comment can be useful. Using this function or not depends on the system that will process the resulting PS file, and its ability to handle the page comments.

9.4.4 PDF Options

- **Compression Mode**

See 9.4.2 TIFF Options on page 306

- **Tag ICC Profile**

The Tag ICC Profile check allows the user to include ICC Profiles in the PDF file.

9.4.5 Scitex LW Options

- **Round metric page dimensions**

This option will round off the page dimensions to the closest integer. This can be used if the device you're sending the Scitex LW doesn't support decimals in the page dimensions.

9.4.6 More Options

- **Polarity**

The polarity should be set as required for the final output. If both positive and negative output are required, the option should be left unlocked so that the control is available as PPD option. It should be kept in mind that reversing the polarity is possible in different locations. The input file may have been printed negative, but also the imagesetter may have an option to change the polarity. Where a combination of two negatives has been made, the final output will be positive again.

- **Orientation**

The orientation is primarily a definition of the scan direction of the output device, it reflects the physical construction of the device. By convention, the page width is the film width, and the fast scan direction is the film feed direction. On a drum device for example, the orientation would normally be set to 90° or 270°, where the default is 90° and this depends on how the image has to be oriented with respect to punching. A Capstan device would normally have an orientation of 0° or 180°. As the orientation is

predefined in the device list as well, it will change automatically when selecting the output device. This device rotation should not rotate screen angles.

- **Black overprint**

  If set to No, Black line work objects will knockout the underlying objects.

  It should be set to Yes to force any line work object that is defined to be 100% Black to overprint underlying process colors. Note that this is only appropriate on an non-PSTI workflow. If black overprint is required on a PSTI workflow, it must be defined in the PSTI assembler activity (band to PSTI), e.g. for an autotrap workflow.

  When set to Yes + White KnockOut, a white background of a QuarkXPress EPS will be forced to overprint.

- **Interpolate**

  This option is only applicable a 1 bit depth file. It can be checked for higher quality output, however, there is a significant performance penalty associated with this and this box is therefore default unchecked and left like this. The main area of concern relates to image data, which is typically stored at lower than the final output resolution. On a PSTI workflow, the CT data may already have been interpolated (as is automatic in Platinum mode) but CT pixels will typically still be larger than output pixels, and without interpolation, the edges of these pixels may result in clipped screen dots as shown. The 1 bit TIFF on the right uses interpolation.
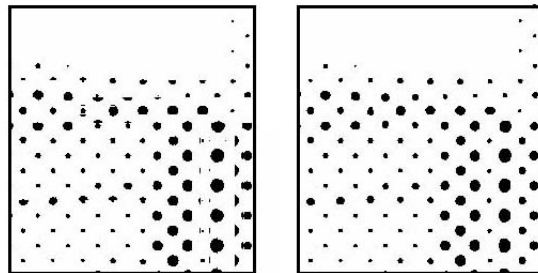
- **User mirror**

  This option reflects the scanning direction of the output device. It is set according to the laser spin direction in the imagesetter, and is, by default, unchecked for Agfa imagesetters. It will not result in an image inversion on final output or flipping of screen angles on film.

- **Scale image by**

  Allows the user to scale the image during the assembly of the separations, both in fast scan and slow scan direction.

- **Scale page as well**

  If unchecked only the contents of the page will be scaled (e.g. for distortion purposes) If checked the page will be scaled completely.
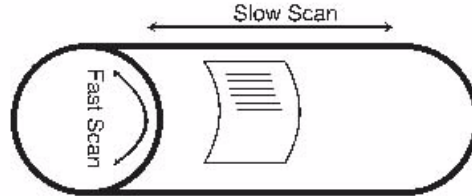
- **Advanced options**

- Memory

  The optimal memory allocation can be specified by entering an appropriate value in the Max Memory Field in the window shown on the right. This memory can be set independently for all assembler activities (i.e. band, proof, link, separations).

- Pad Pixels and Pad Lines

  These options should in almost all cases be left unchecked. They may need to be checked for devices where the bitmap files are required to have dimensions that are a multiple of 32 in width and/or depth respectively. (e.g. when driving the Celix imagesetters via the Saturn import option because the number of scan lines in a TIFF must be an exact multiple of 32) In Nexus, padding to 8 pixels is supported automatically by the Agfa driver, so checking Pad Pixels is not necessary anymore for Agfa devices.

  It should also be noted that when TIFF files are prepared for the Stitcher, they should not be padded. Although when stitching TIFF files, the stitcher will byte align the images in any case.

- Transparent PSTI

  This option defines how the assembler will place PSTIs in a Link workflow. If the option is on, the PSTIs will be placed transparent (where 0% paint is found, transparency will be applied), or, if the options is off, PSTIs placed by their link will knock out everything underneath.

- Legacy Bounding Box Handling

  This option affects activities that make link files. In older versions of Nexus, the image was not always correctly placed relative to the origin, when the input job was for example a PDF with a Trim Box whose origin was not at (0, 0). This is corrected in Nexus 8.1. However, some users may be accustomed to correcting for this at the Step and Repeat stage by applying an offset to the link file, and may not want to change their workflow. In that case, the user should check the option for legacy behavior.

- Flip PostScript / Nexus Screen Angles

    The screen angles in Nexus 8.1 have been corrected. However, if users want to match old behavior, so that existing jobs do not change, these options can be used.

- Use Old CQS Rulings

    CQS Rulings in Nexus 8.1 have been corrected. However, if users want to match old behavior, so that existing jobs do not change, this option can be used.

9.4.7 Screening

- **Screening selection**

    The Screening pop-up allows the user to define what controls need to be taken from the PS file, and what needs to be kept from the dialog.

- PPD Option Control

    The settings with an open padlock are controllable through the PPD.

- Full Control in PS

    All settings are made in the PS file, and therefore cannot be set in the dialog.

- Ruling / Angle / Angle/ruling control in PS

    Only the Ruling or the Angle or both, are controlled from the PS, the other settings will be set in the Assembler dialog.

- Unscreened

    When set to Unscreened, an 8 bit output will be generated.

Note: The partial screening controls (Ruling, Angle... in PS) can NOT be used in combination with "Nexus" screening in ArtPro or NexusProcessor. For these settings, screening needs to be set to PostScript screening or Nexus Extended Screening.

- **Define Default Screen**

    When using PS control, it is possible to set a default screen, i.e. settings to be used if the settings can't be found in the PS file.

- **Screening Setup**

    Allows the user to select the Screen Family. All details in the screening setup are discussed in Chapter 11. Screening & Calibration on page 403.

9.4.8 Separations

- **Separations (CMYK)**

  For CMYK, you can set the angle (between 0º and 90º for round and diamond dots, etc. and between 0º and 180º for elliptical, etc.) The available angles depend on the dot shape.

  Next to the dot shape, you can select an Extra Cutback Curve. This is an additional curve for that separation, that will be calculated on top of the other curves. The curve will NOT replace other curves!

- **Spot colors**

  The angle and Extra Cutback curve for spot colors can be set using the dropdown menus, and the list on the right. By default there are 4 lines in that list, representing spot color 1, 2, 3 and 4. The 5th spot color will get the settings of the first line, etc.

  By clicking the Delete button, the selected line will be removed, by clicking Add Spot, an extra line will be added.

  When selecting a line in the list, the settings are shown next to "Spot", and its settings can be changed using the dropdown menus. The changes will show in the selected line too.

- **Exclude / Include Colors**

  Using this function, the user can create either a list of colors to be *excluded* from the output (such as varnish, die lines or other non-printing separations) or to create a list of colors to be *included* (e.g. just the process colors) and so all other colors will be excluded.

- **Extra Cutbacks**

  The Extra Cutbacks button allows to define the folder in which the Extra Cutback curves can be found. These curves will be available in the dropdown menus underneath.

  Keep in mind that Nexus takes all curve files from the selected folder, AND all subfolders.

  This folder is also important for files coming from ArtPro. If the ArtPro had an Extra Cutback defined, only the file name entered there will be taken along. Nexus will search the Extra Cutbacks folder for a curve with the same name.

- **Set Calibration**

  The Set Calibration button allows to define the Calibration. If any Calibration has been set, the button will change to "Edit Symphony Control". For an explanation on Calibration, see Chapter 11. Screening & Calibration on page 403.

- **Curves**

  The Curves button allows the user to see a graphical representation of the curves, including a full table of the system values and the corresponding values. You can see the combined curve, or the individual curves.

9.4.9 Seamless output

Seamless output is only available for PCCFlexo, PCCFlexo1 and PCCFlexo2

The Assemble Separation's Seamless drop down has 10 options: CDI 180, CDI 360, Flexolaser, Schepers, CDI (Any), Hell (Var), Hell (Fix), Lüscher, Lead and ALE. These flavors have influence on the pad pixels and pad lines of the TIFF that is generated to the nearest 32 pixel boundary.

Seamless Nexus Basic RIP output ALWAYS needs a Convert Screened TIFF. Therefore the Seamless option should be enabled and the circumference of the drum should be known. See 9.6. Convert Screened TIFF on page 314.

9.5. Assemble Screened TIFF

This activity is a special case of the Make Separation activity, in which the output format should always be TIFF. It is required in order to build a Screened Page workflow, which is explained in detail in the Add workflows paragraph.

A screened page workflow will be used in situations where one wants to be sure that ripped pages or single jobs are screened identically when imposing or Step & Repeating. The EPS link files used in this case will reference to the already screened, separated TIFF files, which are basically ready for output.

When double clicking the icon for this activity, the Make Screened TIFF window as shown below comes up. The Settings are explained in 9.4. Assemble Separation on page 306. The settings specific for this activity are discussed below.

9.5.1 Device and Resolution

It is very important that the device and resolution are set to that of the final output device. The matching device may be selected from the available list through the popup window, the resolution will be adapted according to the selected device. If the resolution of the final output device differs from the resolution selected in this window, the resulting screening may be distorted and incorrect.

9.5.2 Orientation

To assemble this screened sub file, the orientation should be set to 0 rather than the 90 default for drum devices. The final orientation is selected in the output or imposition workflow.

9.5.3 Pad Pixels and Pad Lines

These should also be set in the imposition workflow, and not in the screened page workflow.

9.5.4 Output Format

This should always be set to TIFF, with no tiling and compression set to Packbits

9.6. Convert Screened TIFF

This NexusRIP activity is used to convert already screened TIFF files to LEN or TIFF format e.g. with distortion for seamless output. The TIFF convert can be used in the workflow immediately following a make separations activity which generates screened TIFF files fine tuned for a LEN format device. When adding a workflow a TIFF Convert output device must be added.

In the convert screened TIFF activity, support is provided for fitting pages to fixed drum sizes. If this option is checked, the assembler will scale down the page so that the fast scan direction is an exact multiple of screen tiles, which are typical a few hundred pixels in size. Make sure the assembler is set to 90° or 270° for these drum devices, and pad pixels and pad lines is not checked. The Make Seamless option specifies whether the image or page needs to fill the drum completely or not.

The Convert Screened TIFF activity also contains extra functionality for optimizing or removing small or isolated dots, which makes the activity also useful for "regular" screened files.

9.6.1 Output File Format

The Output File Format can be set to TIFF or to LEN, which will usually be transferred by FTP to devices such as the CDI, ZED and Schepers laser.

9.6.2 Input

Defines whether the input file is Positive or Negative. This is necessary to define Small Dots (see below)

9.6.3 Make Seamless

In order to make Seamless output, this option should be switched on.

9.6.4 Any Resolution

The any resolution option is only required for LEN, when the resolution is not restricted by the drum circumference.

9.6.5 Flashes

Only relevant for CDI output to select between single and dual beam.

The only valid settings currently are 180000 and 360000.

9.6.6 HelicalPitch

Till today this option is only relevant for the HelioFlex from Hell Gravure. Closed loop means that the exposure is circular, and is used for highest quality and seamless applications. 1-8 beams are used for helical exposure at different speeds

9.6.7 Drum Circumference (mm)

In the case that LEN format has been requested as Output Format, the final required size of the job is specified as the drum circumference, and has to be specified in millimeters. If seamless output is not required for output to the LEN Device, the drum circumference is used to determine the effective output resolution.

LEN format devices expose a fixed number of pixels along the fast scan direction, irrespective of the circumference of the drum, but these pixels may be grouped together by factors of 2, 3, 4,5, 6, 8 or 9. It follows that, for a given drum circumference (including the thickness of the media), there may be a number of acceptable resolutions that can be used in the Assembler separations activity. If an invalid resolution is used for the TIFF file, the Convert Screened TIFF activity will fail. The resolutions are typically between 1000dpi and 3000dpi.

The valid resolutions are given by:

R = (180000 x 25.4) / (circumference * factor)

where circumference is expressed in millimeters and factor is 1, 2, 3, 4, 5, 6, 8 or 9. The number of flashes for a single beam CDI, for example, is 180000. A 560mm drum e.g. would result in 1020, 1360, 1632, 2041and 2721 dpi as valid resolutions.

9.6.8 Small Dots / Isolated Dots

Small dots are dots equal to or smaller than the entered number of pixels. Isolated dots are dots that aren't surrounded (for flexo this also means not supported) by other dots.

- **Remove**
  Remove will delete small or isolated dots completely

- **Remove or enlarge**
  Remove will delete small or isolated dots, but internally add up the amount of pixels that were removed. If that value reaches the minimum dot, a small or isolated dot will be enlarged to the minimum value, etc.

If, for example the minimum dot is set to 5 pixels, and there is an area with 1 pixel dots, the first 4 will be deleted, the next will be enlarged to 5 pixels. The next 4 will be deleted, etc. That way, the original gray level is kept, and the dots are on the position of the original dots, maintaining screen angle and ruling.

- **Minimize**

  When set to minimize, small or isolated dots will be reduced to the minimized dot size. This size can be set to 1, 2 or 3 pixels in a dropdown (which only appears if "Minimize" or "Minimize or Enlarge" is selected).

- **Minimize or Enlarge**

  Minimize or Enlarge works in the same way as "Remove or Enlarge", but the small dots are Minimized instead of deleted. This results in a bunch of minimized 1, 2 or 3-pixel dots, and some dots enlarged to minimum value in between. Although these minimized dots are not printable by themselves, they can be very useful in flexo to support the surrounding minimum dots.

- **Isolated Pairs**

  Isolated Pairs can be deleted if they are both smaller than a certain pixel size. Whether or not 2 pixels are a pair, is defined based on the Ruling set in "Based on screen ruling of..."

9.6.9 Make scaled FM dots rounded

FM dots can be 1 pixel, 2 by 2 pixels, 3 by 3 pixels, etc. When the scaling gets higher (4 by 4 pixels or higher), it can become noticeable that these dots are square. The Make scaled FM dots rounded, replaces these square dots with round dots. Keep in mind that this influences the circumference and thus the growing / shrinking of the dot.

9.7. CIP3

It is possible in Nexus to create a CIP3 file, used for controlling the press. They can be added when setting up the workflow to any activity that generates screening output data. The main purpose of these files is to provide information about ink density for each ink on the plate. CIP3 contains a preview image, information on the plate size, separations, dielines and other information.

The CIP3 files from Nexus are by default composite, so there is one file per job. These files may be read using software from Heidelberg, MAN Roland or others and can then be linked to a certain press.

A tool such as CPC24 from Heidelberg reads in the CIP3 data and generates a file containing information on the different ink zones. This file will be saved on a flash card to be read in on press, or even transferred over the network to presses with a built-in PC. Using the ink zones information, the setup time on press will be reduced a lot. This method replaces the conventional plate scanners.

The Make CIP3 activity only uses data from the separation images, and not from the OPPO or PSTI images from which these were generated in some workflows. The separation activity must be screened (Bit depth = 1) and defined with TIFF as the output format. After being generated, the files will be transferred through a file copy or FTP activity. As shown on the sample above, the assembled separations will be grouped first and then passed on to the make CIP3 module.

The editor for the Make CIP3 activity provides all of the controls necessary to produce CIP3 files of the required format, conforming to the version 2.1 specification.

9.7.1 Orientation

allows you to rotate the CIP3 file if necessary

9.7.2 Side

Allows you to manually select the Front and Back side of the plate. The default setting is Front. This sets the CIP3BeginFront/CIP3BeginBack keys in the CIP3 file.

9.7.3 Inv. Polarity & Mirror

These options allow you to flip the image or invert the polarity. This is useful if you want different settings than the ones in the assembler.

9.7.4 Preps filter

If this option has been checked, the front and back side of the fully imposed plate will be automatically selected, overriding the 'side' setting.

9.7.5 Compression

Defines whether the preview image will be compressed. The only available choice is Packbits

9.7.6 Output Format

Specify which format is desired for the preview file. The default is ASCII85. This may have to be changed depending on the application that must read in the data.

9.7.7 Heidelberg Press / using Web 2

Checking this option will add special comments in the CIP3 file to make it compatible for Heidelberg presses. There are by default two types of Web presses. By enabling the Web 2 option, you can control for which press type the CIP3 file is meant. This option must only be used in combination with a Heidelberg CIP3 file.

9.7.8 Resolution

Allows you to define the resolution of the preview image included in the CIP3 file. These previews are used to calculate ink coverage. Even at 60dpi, the CIP3 file can become quite big for larger plate formats.

9.7.9 Paper width / Left Offset

The CIP3 file is calculated from the TIFF files Nexus generates. Since these include not only the job itself, but also the registration marks and the take-off bars, there can be a large area which is not relevant for the CIP3 file and the ink zone parameters. With the Left Offset, you can define where the actual image data starts, and the Paper Width defines the actual job width. These settings will be taken into account, when the ink zones are calculated based on the CIP3 file.

9.7.10 Output

Is used to set the name of the final CIP3 files

9.7.11 Name Template/ Sheet template

These options allow the user to set both the /CIP3AdmJobName and the /CIP3AdmSheetName keys in the CIP3 file.

Note:

It is possible to generate a CIP3 file per separation by manually editing the workflow, and place the Make CIP3 file activity right after the Make Separation activity.

9.8. Band to PSTI

The Band to PSTI activity is used to convert composite OPPO files into PSTI format.

Logically this activity will be used in case of PSTI workflows. Below is a sample of an autotrap workflow, a very simple PSTI workflow.
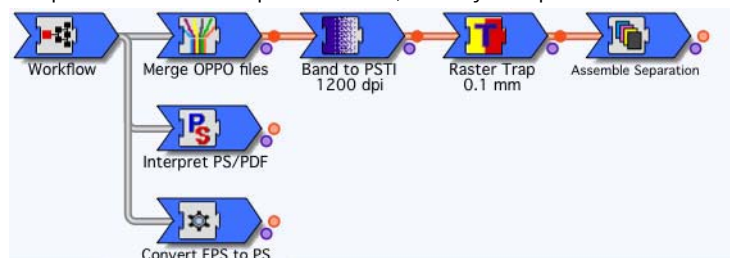
The banding or PSTI assembler activity converts the resolution independent composite OPPO file, generated using the OPPO merger, into the resolution dependant rasterized PSTI format, a two-layer format holding a CT layer and a line work layer. This rasterization process actually uses the same Assembler program as we use for

assembling proof or 1 bit TIFF files, therefore, we recognize a lot of settings in the PSTI assembler setup window from the generic make separation activity. The most common reason to use PSTI files is the automatic trapping, but also softproofing using Nexus Edit, and exporting Ripped data as TIFF/IT or PSTI, requiring PSTI files and thus the Bander.

9.8.1 Basic options

• **Device / Resolution**

The resolution in dots per inch is normally selected from the resolution popup, the contents of which depend on the selection made from the device popup. Selecting an Agfa Avantra Device for example will result in a choice of 1200dpi, 1800dpi, 2400dpi and 3600dpi. Keep in mind that the device list, and resolutions is related to the Device context setup.

If Any device is selected, the resolution may be entered manually in the text field. The default banding resolution will typically be the one required for final output, to achieve optimal quality. However if multiple resolutions are used on the output device, the option can be unlocked, so that it can be controlled when printing from applications. The banding resolution can be set to a lower value than the output resolution (e.g. 2400 rather than 3600) without adversely affecting the quality of images. However, the line work will always appear on film as if it has been outputted at the lower resolution. In some cases it is worthwhile considering lowering the banding resolution, since it will improve the banding performance.

Note: The PSTI format does not support non-integer resolutions. Therefore, values such as 1828.8dpi used for Celix 8000, should not be entered in the resolution field. The module will not fail, but in a RasterPage workflow, the bounding box for link files will be wrong.

• **User Orientation**

This would normally be set to 0, so that the PSTI is viewable and editable in upright position, using the Insight part of Nexus Edit to view the file. Large pages containing upright images will generally Band quicker if the bander orientation parameter is set to 0.

• **Black overprint**

• No
Black line work objects will knockout the underlaying objects.

- Black Overprint

  box should be checked to force any line work object that is defined to be 100% black to overprint underlying process colors. Note that this is only appropriate on an non-PSTI workflow. If black overprint is required on a PSTI workflow, it must be defined in the PSTI assembler activity (band to PSTI), e.g. for an autotrap workflow.

- Black OP - White KO

  This option will force a white background of a QuarkXPress EPS to overprint.

- **User Mirror**

  Similar to the polarity setting, the user mirror should almost always remain default, i.e. unchecked and locked in the workflow. This ensures that the PSTI file is right reading when viewed in Nexus Edit. If the final film output should be wrong reading, this should be set in the Assembler parameters in the separations activity or on the imagesetter itself.

- **Line work Quality**

  This is normally set to "Better". At very high output resolution e.g. 3600 and higher, it may be sufficient to use "Good". In this case, the line work will be banded at half the specified resolution value, and bring in a substantial performance gain. The banding resolution for images is unaffected by this.

- **LW to CT ratio**

  This popup defines the resolution of the image data in the PSTI CT file, relative to the line work resolution. At the input stage of the activity, image data is typically at a low resolution of around 300dpi. It makes no sense to create a PSTI CT at a higher resolution, since this will not add any additional quality, but it will slow down the banding process, and generate a large CT file. For a banding resolution of 2400dpi, for example, a LW to CT ratio of 8 will result in a 300dpi CT in the PSTI file.

- **Add Preview**

  Checking this option will generate a PICT preview for the PSTI file, which can be identified by Nexus Edit, and this will facilitate the navigation process.

- **PSTI mode**

  There are three different PSTI modes or versions: Classic, Gold and Platinum. These different modes find their origin in the relationship between CT and LW data in this dual layer file format. If CT images are positioned independently, they will always be

clipped at LW resolution and cause no problem. However when two images abut one another, there is a potential problem because of the differences in resolution between LW and CT.

- Basic

  Renders all CTs in the CT file at CT resolution, resulting in jagged edges with some images, but is the fastest output, and most compliant with the TIFF/IT specifications

- Antialiased

  Antialiases the edge of the CT in the CT file, to create a smoother appearance of the edges. Processing time is higher than basic.

- High Quality

  An option comparable to the way PSTI treats CT borders: the edges of the CTs are rendered in the LW file, so they can be shown at full (line work) resolution. This of course takes more processing time.

- **Blends in CT - Shading Noise**

  This option in the Band to PSTI activity converts the blends into CT. Similar to ArtPro, you can add a certain percentage of noise to this conversion, to reduce possible banding effects in the image. The PSTI mode should be set to Gold to prevent part of the CT data being copied to the LW, resulting in too many colors.

- **Drop Sys Value 1**

  Historically, the first system value of a PSTI CT file is used to hold internal information, and is not available for holding image data. Therefore, the first available value is actually system value 2. In normal CT's this is not noticeable, but in some cases this may cause a small problem with the highlight areas of vignettes.

  Suppose you have a large vignette from 0% to 10% black. Normally, the full 256 Sys values could be used to build a smooth gradient, but because of the above mentioned reason the two first steps holding data would be identical and both be in system value 2. This may be noticeable on film for large size vignettes. Drop Sys value one will reduce this effect by keeping the first step at 0% instead of Sys value 2 and will result in a more natural vignette.

- **InSight Compatible**

  Editing of PSTI CT files in Insight has always been limited to CTs with no more than 7 channels. They could be opened for viewing, but could not be edited or saved. This option enables the user to generate PSTI CT files with more than 7 channels which are editable in the Insight part of Nexus Edit.

- **Add 1 Bit data as CT**

  If the original PS file contains Copydot data coming from scanners such as Purup Eskofot or CreoScitex Renaissance, this data will by default be treated as line work data. However, to prevent screen dots from trapping to one another during the In RIP trapping process, the copydot data can be moved to the CT layer of the PSTI file by checking this option.

- **Point sampling for unscaled CT**

  This option allows the customer to bypass the default interpolation in PSTI Platinum mode, if the resolution of the original image exactly matches the resolution of the PSTI CT file. In these specific circumstances, Nexus adds some additional blurring to the CT which may not always be desired. If the box is ticked then a point sampling algorithm is used (instead of the normal bilinear interpolation).

  If the CT has been clipped to a complex path, it may be better not to check this option since the interpolation on clipped, fractional CT pixels may provide a better rendered result.

9.8.2 Polarity

This setting should remain to positive in almost all circumstances. In this stage of a workflow, there are no reasons to invert the PSTI files. If negative film output is wanted, this should be applied when screening, or even direct on the imagesetter itself. Only when the input file is negative already, the polarity could be set to negative, to invert the data to positive again.

9.8.3 Advanced options

The same advanced options as for the assembler are available. See 9.4. Assemble Separation on page 306.

9.8.4 Exclude / include colors

Exclude / include colors works the same way as for the assembler. See 9.4. Assemble Separation on page 306.

9.9. Raster Trapping

Trapping in NexusRIP is raster based and requires the existence of PSTI files in a PSTI workflow. Shown here is a very simple Autotrap workflow, where the trapping activity follows the Band to PSTI, and precedes the make separation activity.
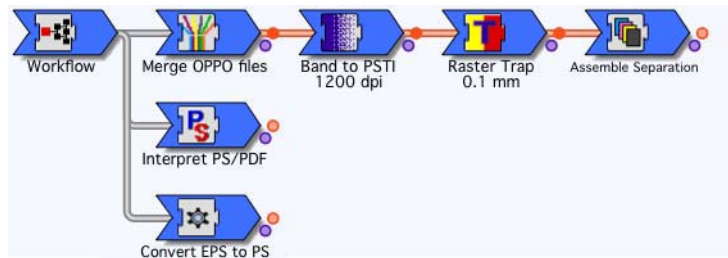
The CT and LW files resulting from the Bander will carry the extensions .uct and .ulw (untrapped line work and untrapped CT) The CT and LW files after trapping will have the extensions: .tct and .tlw (trapped CT and line work)

Control of the trapping process is accomplished through the Trapper editor, which is opened by clicking on the Trapper icon in the workflow editor.

Once a job has been run on the workflow, additional options relating to specific inks (such as manual traps and non trapping colors) are available. When editing trap parameters on a workflow it is not possible to define cutbacks for any color other than black, nor to define non trap colors or manual traps. This is because these parameters can only be set once the colors in the job have been determined. These three buttons are therefore only enabled when editing individual jobs

9.9.1 Trap Distance

This is the maximum width that the trap may have, expressed in the preferred units. Traps wider than 0.01" (or 0.254 mm) require a special license. (Notraplimit) The required value for the trap size may be defined in the text field. When trapping small or narrow objects, traps may actually be less than the specified trap size. By unlocking the padlock, trap width may be specified as a PPD print option on a per job basis. The width will be selectable from a popup as shown in the units selected in the preferences.

9.9.2 Output

This button enables the naming of the trapped PSTI file(s) to be specified as for other activities that create new files. Default extensions for trapped PSTI files are .tct and .tlw.

9.9.3 Auto Trapping

Automatic trapping will not take place unless this box is checked. However, black cutbacks and manual trapping will not be suppressed if this box is left unchecked. Manual traps as explained later are treated as exceptions on the autotrap settings, and will be applied even when the trapping algorithm has been set to no trapping.

In this example, the basic line work trapping behavior can be seen by comparing the untrapped image with the trapped one. It can be seen that the yellow and cyan trap to each other to produce a green trap. The lighter areas of the arrow trap into the darker background, the background traps into the darker areas of the arrow to produce an almost black trap color.

The trapping direction is based on the darkness of each color, with the lighter color always trapping to the darker color when autotrapping. This direction can be changed if necessary by defining manual traps.

The darkness of a process color depends on its consistent amounts of Cyan, Magenta, Yellow and Black, where these colors have standard values. In the case of spot colors, their trapping behavior is based on their CMYK equivalents defined in the Color_Lib file or modified in the Merger Editor.
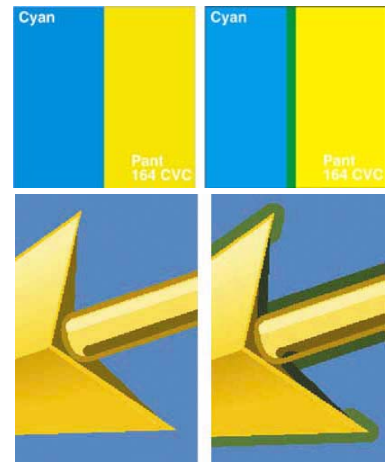
9.9.4 Mitre trap ends

If this option is selected, special action will be taken where more than two colors are in close proximity (see examples on next page). Enabling mitre trap ends increases trapping time somewhat, but should improve trap quality. When this option is checked, two other options, namely Extra mitre trap ends and Mitre echo removal become available.

9.9.5 Mitre echo removal

If this is checked, consideration is given to the thickness of the object that is being trapped into. Without it, the width of the trap is limited by the width of the object from which the trap originates. If this object is narrow, this narrowness is "echoed" in the trap. It eliminates the echoing effect.

| Cyan | Mitre trap ends off | Cyan | Mitre trap ends on | Cyan | Extra mitre trap ends | Cyan | Extra mitre trap ends & mitre echo removal |
| Magenta | Pant 164 CVC | Magenta | Pant 164 CVC | Magenta | Pant 164 CVC | Magenta | Pant 164 CVC |

| Mitre trap ends on | Extra mitre trap ends | Mitre trapping & echo removal | Extra mitre trapping & echo removal |

9.9.6 Extra mitre trap ends

This option is only available if Mitre trap ends is checked and improves the quality of the traps at joins where multiple colors come together.

9.9.7 Trap Position

• **Standard:**

When a trap is created, it is normally positioned over the darker color. However, when trapping vignettes, this can result in a step change that may be considered to be unacceptable.

• **Centered:**

A way to avoid this would be to position the trap centrally over the color contact, by selecting Centered rather than Standard from this popup. Centered traps are good for vignette trapping but can cause unacceptable results when the destination color is very

dark (e.g. 90% black) because it results in spreading of the dark color as shown in the second image. If the black is 100% there will be no centering even when the centre option is selected.
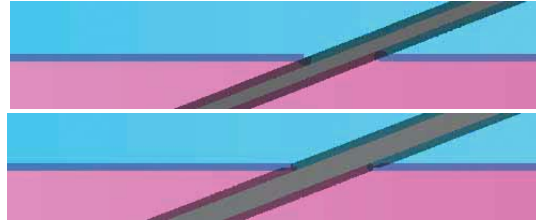
- **Sliding:**
  Another approach involves the selection of the Sliding trap position option. In these case, there is no sharp transition when trapping vignettes and nor is there an undesirable spreading of dark colors.
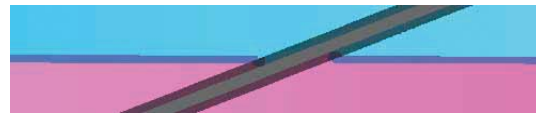
9.9.8 CT trap mode

This popup provides control over how CT (i.e. image data) should trap to LW (i.e. line work) or vice versa. Image data does not necessarily imply scanned images, because in some cases (e.g. in ArtPro) vignettes are converted to images at a certain resolution. Also, in Platinum mode, some CT data may actually be in the line work file to ensure that it is rendered at the higher resolution.

Where line work and images join, the CT is clipped at line work resolution. In Classic mode, CT pixels just inside the boundary will be at CT resolution, which is typically lower than LW resolution (e.g. 300 dpi vs. 2400 dpi)

- **none:**
  If none is selected, there will be no trapping to or from image data

- **CT to LW:**

  When CT to LW trapping is selected, the trap will be created over the line work, irrespective of the relative darkness of the LW and CT pixels. The color of the trap will be based on the CT pixels at the very edge of the image.

ct to lw
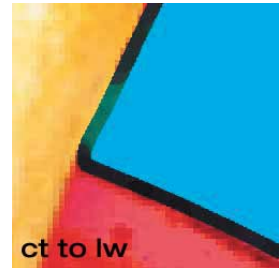
- **LW to CT:**

  In the case of standard LW to CT trapping, the trap will be created over the image data, irrespective of the color of the line work and CT pixels. The color of the trap will be based on the structure of the CT image, which is new for Nexus 6.5. This will result in better trap colors. Former problems with merging LW into Platinum data have been resolved.

lw to ct
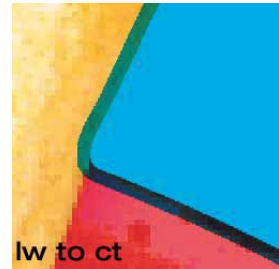
- **Color based:**

  If this option is selected, the direction of the trap will depend on the relative darkness of LW and CT. If the line work is lighter than the CT, the LW will trap to the CT, whereas the trap will be in the other direction if the LW is darker.

color based
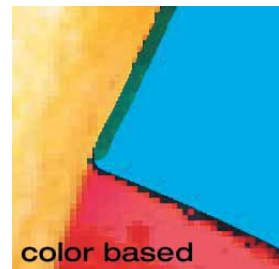
- **CT to LW diffusion /**
  LW to CT diffusion:

  Normally, with CT to LW and LW to CT trapping, the color of the trap is constant across the width of the trap. The Diffused trap options result in a tapering down of trap darkness towards the lighter color. It should be noted that the overall darkness of the trap is controlled by Trap Intensity as described further.

ct to lw diffusion
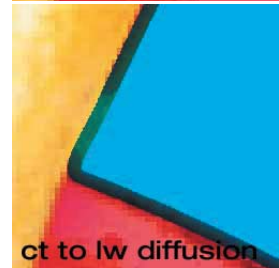
9.9.9 CT-CT trapping

Adjoining CT images would not normally need to be trapped, but sometimes vignettes are generated as images without all process colors and trapping may be necessary. Also where one image contains spot colors, CT-CT trapping is necessary. This is done by check-

ing the CT-CT trapping box. In this example the background area is actually a spot color, dark vignette, into which the paler image can be seen to trap.
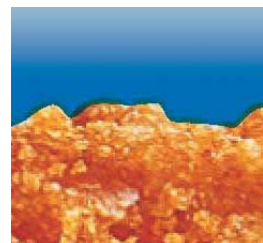
9.9.10 Reverse trap

To replace the trap with white, the Reverse Trap box should be checked. This will result in a trap zone, where no ink is applied. A possible application is metal printing, where different colors should never touch each other. The sample shows gray text on top of a red spot color background.

9.9.11 White Plate

If a white plate is required, the box should be checked and the name to be assigned to the white plate entered in the check box. To make use of this facility a PPD must be made and the white plate option selected at print time.

The white plate will be created under all objects in all other color channels and will always be cut back by the trap width. A white plate is typically used when printing on transparent foil or metal substrate.
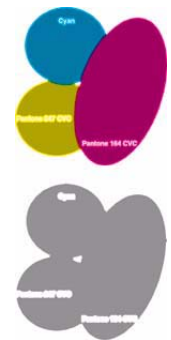
9.9.12 Black Cutbacks

It is also possible to define that there should be a cutback under rich blacks and possibly under other colors in the job. If this option is selected, rich blacks will be cut back by the removal of all other colors from within the trap width of the outer boundary of the rich black object. Note that Black Cutback will even be effective even if the automatic trapping check box is left unchecked. The cutback slider bar is used to specify the intensity of process black above which all other colors must be removed from within the trap width of the rich black areas. In normal circumstances this is set to 100

- **Other cutbacks:**

   Allows you to define cutbacks under other colors than rich black. By setting the sliders, the necessary percentage value above which the cutback happens can be set. This option is only available when the job or page has been processed through the interpreter so that the used separations are known.

9.9.13 Trap intensity

The overall color of the trap is obtained by summing the color channels in LW and CT. However, it can be reduced from this 100% value as required using the Trap Intensity slider. Reducing it to zero will result in no trap being visible. Using this intensity slider, the darkness of trap colors may be defined

9.9.14 Trap Treshold

Autotrapping will normally generate acceptable traps, but reducing the trap threshold using the slider may reduce the number of unnecessary traps. By increasing the treshold value, similar colors will no longer trap to each other. If colors only differ by a few percentages, there is usually no reason to apply trapping. A value of 50 is normal and recommended. In the example below two vignettes using reds and greens are adjacent to one another. The first image is untrapped, the second uses 25 for the threshold. With this value, only a small area remains untrapped, where the differences for the contacting colors is not big enough. In the last image the untrapped area is slightly bigger, because the threshold has been set to 75.

9.9.15 Manual Traps

The manual trap button is grayed out when setting up a workflow. It is only available on a per page basis once a job has been scheduled for the trapper and the spot colors have been recognized. This means that a job must be processed by the interpreter before the spot colors will be found. If the standard autotrapping, based on the relative darkness of the colors to be trapped, does not offer precise enough control, manual traps may offer some help. Using manual traps, the standard trapping algorithms may be overridden for a particular job. In the case of spot colors, the autotrapping algorithm will use the specifications in terms of CMYK, as listed in the Color Lib or the User Color Lib file (see the Merger for more details). The manual trapping allows the user to overrule the normal trapping. There is no way to specify default manual traps (i.e. for a workflow).

Below we see a single page document has been run through a job using autotrapping. At this stage, double clicking (or selecting and clicking the edit button above) will open the trapping dialog window which will show two extra available buttons, one of which is Manual Traps. If the autotrapping result is not acceptable and manual traps are required, this would be a way to edit the traps for this job or page.

If manual traps are often required, it is recommended to put a hold on the trapper in the workflow. The untrapped PSTI files (using the extensions .ULW and .UCT) may be viewed in Nexus Edit by selecting the banding icon and clicking the Nexus Edit button. There we can check the spot colors being used, and decide which color combinations need manual traps. Once we have made the required settings, the trapper may be released. Note that the manual trapping will even be applied when autotrapping is disabled in the trapper parameters window.

Pressing the Manual Traps button will open the Manual Trap Window as shown below. In this window, the manual traps are defined as color pairs using different colors. Note that in this respect color means an ink or separation.

- **From / To:**
  These two pop-ups show us the list of available inks or separations. From and To define logically the trapping direction. If we select a color in the From popup, it will automatically be disabled in the To popup. If we try to select the same color anyway, the To popup will switch to the next available color. A little color indicator shows a preview of the selected color. The option "All" allows the user to define the trapping behavior from one specific color to all the others at once.

- **Range:**
  In the case that the control on the manual traps has to be very tight, the settings can be refined by defining the specific range. With this tool a specific color can be set up so that it traps differently depending on its percentage.

- **Trap Size:**
  For each color pair defined in the manual trapping a separate trap size can be set up. This setting uses the units defined in the preferences. If no settings are made, the general trap size is defined in the trap parameters window.

• **Add / Delete/ Revert:**

Once two inks have been selected in the pop-ups, and the ranges and trap size defined, this color pair may be added to the list of manual traps by pressing the Add button. The Delete and Reverse buttons will only be available when a trap pair has been selected in the list. Delete will remove the selected pair. Reverse will switch the trapping direction.

Closing the manual trap widow will confirm the settings or changes made to the manual traps.

9.9.16 Non trap colors

It is sometimes appropriate that certain colors like dielines, or non printing colors are excluded completely from the trapping process. Again it only makes sense to define these once the separations are known, and thus on a page or job basis. Pressing the OK button confirms the settings and closes the window.

9.10. Outline Activity

Is used to generate an outline around specified regions in a PSTI file. This activity is meant to be used for customers that need auto typical gravure.

To enhance the quality of line work, an extremely small outline will be generated around it. This outline will mostly contain 100% of each separation. The width is recommended to be one output pixel, which will result in sharp line work. Because all settings are definable, this activity may be used to create more generic outlines as well.

The Outline activity is based on the trapper module. Normally, trapping would have been done already in NexusProcessor, ArtPro or another application.

The Outline activity has to be positioned right after the Band to PSTI activity. It creates new PSTI files, using the .OLW and .OCT extensions. You must ensure that the correct File associations have been set on the NexusRIP server. Because new files are generated, an edit template button is available.

9.10.1 Outline Size

Using the units as set in the preferences, this allows you to specify the width of the desired outline. All values and different units are possible, but usually the outline for gravure is very small, because it may not be seen as a stroke or trap.

9.10.2 Outline Position

Allows you to select the position of the outline according to the contour of the object to be outlined

9.10.3 Range

With this setting you can define the exact range of objects to be outlined. In the example on the right, we specify objects between 60% and 100% to be outlined

9.10.4 Separations

In a workflow, the separations are not known yet, and will be grayed out. Only once a job or page has been processed through the interpreter, the separations are known, and may be specified.

9.11. Convert PSTI to PDF

This activity is used to convert PSTI files into a special rasterized PDF 1.3 format, for export to third party RIPs. It can for example be added as an output device to a standard autotrapping workflow by selecting PDF as the output under the Add window.

9.11.1 Output mode

Allows the user to choose to make PDFs that are optimized for either basic RIPs or two-layer RIPs. PDFs made for basic RIPs have the advantage that the output should look correct on all PDF consumers including Adobe Acrobat. However in order to achieve this, contone (i.e. image) data in the PSTI sometimes has to be "promoted" to full line work resolution, making the file bigger and less efficient. This can also cause problems if the file is to undergo further processing in a two-layer RIP because there is no longer a proper distinction between line work and image data.

The "two layer" option maintains the distinction between line work and contone data. This is the more "correct" option – however the output from some files will not always be correct if the PDF consumer does not support (or has disabled) the PostScript "setoverprint" operator. For example some PDF files made with this option will not display correctly in Adobe Acrobat.

9.11.2 Compression

You can choose between None, Flate and LZW. Flate results in the smallest PDF files and is recommended if supported by the target application.

9.11.3 Use PDF 1.5 Features

If this option is switched off, the resulting PDF file will be 1.3 PDF. If it is on, PDF 1.5 features will be allowed in the PDF file.

9.12. Convert PSTI V2 to V1

Version 2 PSTI has enhanced coding that:

- allows data that is really "CT" data to be encoded into the "LW" file, but have it still flagged as "CT" for trapping

- allows separate channel-by-channel masking of the "CT" file, so that for example in a specific pixel, the cyan channel could come from the CT file, but the magenta channel can be from the LW file

Neither of the above were possible in PSTI V1, and taking a V2 file to a system that only supports V1 could result in:

- an error message, if the system actually checks the version

- incorrect display or output if it doesn't

V1 only systems include PageFlow 1.6 or earlier, PCC UNIX packaging system, and older versions of InSight.

The V2toV1 activity converts the V2 file into a V1 file, preserving the visual image of the file. It involves moving data from the CT to the LW file so that it can be coded in a way that is supported by V1. It should display and image OK on the V1 system.

The only available option is the Edit Template button, which can be used to define naming and positioning of the resulting V1 PSTI files.

9.13. Band to TIFF/IT

The *Band to TIFF/IT* option is comparable to the *Band to PSTI* activity, but will result in a composite TIFF/IT file. Unlike the *Make separated TIFF/IT* file, only three files will be created, containing all separations: a CT file, a LW file and an FP file (the last contains information about the CT and LW file, and is meant to merge these two back together).

9.13.1 Include dot range tag   The Dot range tag is a very specific tag, that, according to TIFF/IT specifications, should always be optional. However, some TIFF systems generate an error if the tag is missing. Advised is to keep the option unchecked.

9.13.2 Line work Format

The LW file can be created in LW format, or in HC format. The basic LW format is limited to 256 colors: you can only have 256 different colors in the whole page, otherwise the job would fail. The HC (High Color) format has no limit to how many colors can be used.

When using the LW format, any vignette or picture would exceed the 256 color limit. Therefor, when using LW format, blends should be in the CT file, and the CT quality (see earlier) should NOT be set to high quality (as this forces edges of the ct to be placed in the LW file). To improve the quality of the edges of a CT, AntiAliased can be used instead.

9.14. Assemble Separated TIFF/IT

Assemble Separated TIFF/IT is an assembler activity (based on the Assemble Separations activity) that outputs separated TIFF/IT files. This means a LW and CT file will be created for every separation in the job. There will be no FP file. This Separated TIFF/IT file can be used to send to gravure machines, e.g. Hell. Most of the options are the same as for other assembler activities.

9.14.1 LW to CT ratio

The *LW to CT* ratio defines the LW resolution in correlation to the CT resolution. Default it is set to 4, meaning the CT resolution will be 1/4 of the LW resolution.

9.14.2 CT quality

TIFF/IT is a two-layer format, containing a line work (LW) file at a higher resolution, and a contone (CT) file. The CT file contains images (and optionally blends), while the LW file will contain all other objects. The CT file is normally around 300 or 400 dpi, which doesn't cause any problems for the interior of most images, but where images are clipped to a shape, the edge of this shape will be rendered at CT resolution, resulting in a jagged clipping path. To avoid this problem, the CT resolution could be increased, but this would enlarge the file.

The CT quality options offers other possibilities.

* Basic: renders all CT in the CT file at CT resolution, resulting in jagged edges with some images, but is the fastest output, and most compliant with the TIFF/IT specifications

* Antialiased: works the same as basic, but antialiases the edge of the CT in the CT file, to create a smoother appearance of the edges. Processing time will be higher.

* High Quality: an option comparable to the way PSTI treats CT borders: the edges of the CTs are rendered in the LW file, so they can be shown at full (line work) resolution. This of course takes more processing time.

9.14.3 Blends in CT / shading noise

These options define how to handle Blends and Shadings. *Blends in CT* means all blends will be put in the CT file, and a noise will be applied, defined by the *Shading noise* value.

9.14.4 Include dot range tag

The Dot range tag is a very specific tag, that, according to the TIFF/IT specifications, should always be optional. However, some TIFF systems generate an error if the tag is missing. It is advised to keep the option unchecked.

9.15. Convert TIFF/IT to PSTI

NexusRIP has the capability of importing TIFF/IT files from other systems, and converting them to PSTI, using this special conversion module. This activity will by default be included in the TIFF/IT input and TIFF/IT page workflows that are described in the standard NexusRIP workflow types in the previous chapter. Like PSTI, TIFF/IT is a multi-layer format that may contain up to 4 files. (FP, CT, LW and HC).

- The FP file (For Position) links the three other files together and mostly contains a preview that can be used for placement in most common applications. Typically this file will have the file extension .fp.

- The CT file (Contone) contains all the image data, and he resolution is typically an integer fraction of the LW resolution. The file extension used is .ct.

- The LW file (line work) contains all regular line work data, and may contain up to 256 different colors. file extension: .lw

- The HC file (high contone) is a special type of line work containing part of the CTs at lineart resolution. It will typically be used for soft edges between LW and CT, or for blends that would result in more than 256 colors in total and could not be included in the LW portion

When this activity is part of a workflow, the first current possibility to input a TIFF/IT file is by using manual select in the File Type popup. It is the FP file, or control file that has to be selected here. This file contains the references to the other files which will be detected au-

tomatically. In the File Type Popup, TIFF/IT has to be selected. The TIFF/IT to PSTI converter will replace the usual Merger and Bander, used in regular PSTI workflows.

During the conversion, the activity will select the most appropriate LW resolution and LW to CT ratio. As is the case with PSTI files, the TIFF/IT CT file is typically an integer fraction of the LW resolution. If necessary, the image sizes have to be adjusted in order to compensate for the restriction that in PSTI format the LW resolution must be integral when expressed in dots per inch and the LW to CT ratio must also be integral. Details of how this scaling is accomplished are given in the activity log in the Module Logs folder. A second possibility is to create a hot folder and to drop a folder containing the TIFF/IT file into it. Based on the extension, the FP file must be selected from the folder using the select file activity. When starting the conversion to PSTI, the other files will be selected automatically.

9.15.1 Rotate by

TIFF/IT files and PSTI files do not have identical conventions on rotation. A TIFF/IT page may be saved at 0º, the PSTI page will be shown at -90º. Therefore, rotation possibilities have been added to this conversion activity. Be aware that rotating PSTI files is time consuming and an additional, rotated PSTI file will be created having the extensions .rct and .rlw

9.16. Convert PSTI to TIFF/IT

Is used to convert PSTI files into TIFF/IT format. This implies of course that TIFF/IT output can only be defined for PSTI workflows, such as a PSTI input or Autotrap workflow. The reason is that both PSTI and TIFF/IT files require the separation of CT and Line work data.

The representation of the PSTI to TIFF/IT activity is an output device icon. Under Add workflow, the TIFF/IT output option is included as a proof option, although he resulting files may as well be used for high resolution output. The resolution of the TIFF/IT files will correspond to those originally specified for the PSTI files.
The actual conversion of the PSTI file into a TIFF/IT file will be done using the PSTIExporter activity, which preserves the separation between LW and CT.

9.16.1 TIFF/IT P1 only

This box should be checked in order that the TIFF/IT output files conform to the P1 specification. This requires that only CMYK separations are included. If the job to be converted contains spot colors which cannot be converted to process when printing from the ap-

plication, the workflow can be configured, so that the conversion is done by the interpreter. This by selecting the composite to CMYK option in the color mode. If P1 is requested, and a PSTI file containing spot colors hits the PSTI to TIFF/IT activity, the PSTIExporter module will error.

9.16.2 Include Dot Range Tag

This option is normally checked, except when it causes problems for the target application

9.16.3 Line work Format

This popup determines the required format for the line work data. This can only be set to LW if the line work contains fewer than 256 colors, otherwise it must be HC (High Contone).

When using the platinum PSTI mode, part of the CT data will be positioned in the LW layer, resulting in a lot more then 256 colors for the LW. This means that when Platinum mode has been selected in the Bander, it is highly recommended to select HC as line work format for the TIFF/IT output file. If a job can be run successfully using the Classic mode, the LW setting is possible. However, if LW is selected, and the Line work contains more than 256 colors, the PSTIExporter activity will error out with a range check error.

9.16.4 Edit template

The naming of the TIFF/IT files may be configured using the edit template button. See 3.6. File Naming Template on page 132

9.17. Assemble DCS (Main and Sub)

DCS (Desktop Color Separations) is a version of the standard EPS format. DCS is a format where high or low resolution separated images for every plate of a page (sub files) are separately accessible, and yet associated together through a main file to define the complete page.

There are two types of DCS files. DCS 1.0 supports CMYK files without Alpha channels. DCS 2.0 files supports multichannel CMYK files with a single Alpha channel and multiple spot color channels.

The DCS Main activity will be used in combination with the DCS Sub activity to generate a DCS file (version 1 or 2). The single color gray icon shown on the left (next to the Assemble DCS title) represents the DCS sub activity, the multi color one on the right is the DCS Main activity. In the case of this regular DCS output, a separation

activity is run for each separation. In order to define how the DCS sub file should be created, the required parameters are entered through the DCS (sub) window. This window is very similar to the regular separations editor described earlier. In order to make a DCS file set, the assembler is re-invoked after having made all the separation files for a page, which are then combined to make a DCS File Set.

The Assemble DCS contains the same settings as every Assemble dialog. See 9.4. Assemble Separation on page 306

9.17.1 Orientation

The orientation must be set the same as that one previously been set for the DCS Main file, and is typically 0º.

9.17.2 Polarity

Will typically be set to positive for DCS output workflows

9.17.3 Screening

If Unscreened is selected, screening is disabled and an 8 bit DCS file will be generated, which can be placed in applications for further use.

When creating screened DCS sub files, bit depth has to be set to 1. The screening button will become accessible and screening parameters may be defined as if outputting directly to the device. This type of files will be used to drive output devices that accept screened separation data in DCS format, instead of simply generating 1 bit TIFF files for transfer to the final output device. A typical example of such a device is the Kodak Approval in combination with the recipe color technology. Details can be found under the appropriate section.

9.17.4 Output Format

Is set as EPS, and cannot be changed.

9.17.5 Compression

The sub files would typically be compressed as Packbits, which is the default. CCITT Group 4 compression can be selected if it is known that this is supported by the target device.

9.17.6 Allow scaling

This option is typical for DCS output files. If it is not checked, then any attempt to place this DCS file in an application and scale it before printing will result in failure. This is intended primarily to prevent the inadvertent scaling of screened DCS files. Scaling of these DCS files would result in distorted screening.

If the "Allow scaling" box is *not* checked, then Nexus puts some PostScript code into the DCS sub, which will cause a PostScript error if the file gets scaled in the re-rip process. If the box is checked, then this code is not included in the DCS.

As a consequence this option should always be unchecked when creating 1 bit depth DCS sub files. When creating 8 bit depth un-screened DCS files, this option should be checked for allowing transformations in applications.

9.17.7 Edit template

When a separation activity is run for each separation, the resulting filenames have by default the form: DCSS_separation.EPS. Of course using the template editor, these may be changed.

The DCS main activity is distinguished by its multicolored striped icon. When processing a job for DCS output the sub files first have to be assembled, followed by generating the main file. The DCS (Main) window is very similar to the 'Assemble an EPS Link file' window described later.

9.17.8 DCS version

As explained above, there are two DCS types, which may be specified here by selecting the appropriate version in the popup. It is very important to select version 2 for workflows that may need to run jobs with non-process colors. If set to version 1, a job using spot colors will not fail, but the Main file will only relate to the CMYK colors when used for placement in an application.

9.17.9 Include Proof image

A DCS Main file would typically not contain a proof image, but it may. In the case it does, all settings as discussed for link files become available such as resolution, compression, etc.

9.17.10 Preview

It is usual for the DCS Main file to contain a low resolution preview file for viewing in applications. There is the normal choice of file formats for this preview, and an input field for the resolution. If a 24 bit preview is requested, it is strongly advised not to define a resolution greater then 72 dpi.

9.17.11 Edit template

The main file generated has default a name such as _DCSM.EPS. This may be edited by modifying the template.

9.17.12 Default Dependency

To create a normal DCS File Set, both Main file and Sub files must be generated. Therefore, the DCS Main and DCS Sub activity, will always be combined. The make DCS Main activity is file dependant on the merger and the make DCS Sub activity.
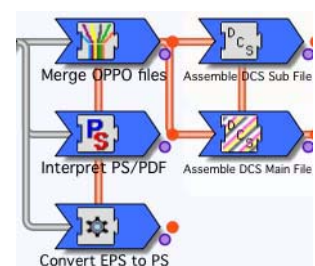
These dependencies can be created on any workflow, where one task should not complete, before another task has been completed. Dependencies and how to create and in-

terpret them are explained in an earlier chapter. In the case of DCS workflows, the dependency is very important, since the main file must not be created until the subfiles have been made.

9.18. Assemble DCS Proof (Main / Sub)

These two activities are used in combination to create a CMYK only DCS EPS file. They will be part of workflows with a DCS V1 proof output.

A major difference with the DCS workflow discussed earlier is that when a job is run, only one DCS Proof icon will be shown (gray) in the job edit window, regardless of the number of separations in the job. This is because all 4 CMYK output files will be created together, and all spot colors will be converted to process. At higher resolutions this part of the workflow will be time consuming.

The DCS Proof Sub window and the DCS Proof Main window respectively are identical to the DCS Sub window and the DCS Main window which are described in detail on the previous pages and therefore not repeated here. A DCS Proof activity by default always generates a 5 file DCS.

The DCS Proof activity always converts all spot colors to CMYK, however some proofers have the capability to handle spot colors. For these proofers, a normal DCS 2.0 will be generated using a general DCS out workflow.

9.19. Merge DCS Files

Is used to combine DCS separations together with the DCS main file into a single file. All the DCS output variants discussed above are by default DCS Multifiles. The DCS Merge icon is represented by the cog wheel icon, and may follow any DCS output workflow. The DCS merge activity will often be added when selecting a Single file DCS output in one of the available DCS workflows under Add.
Below, you can see the difference when a job is run through. On the left side, a DCS2 multifile is created, resulting in a 7file set. (6 sub files and 1 main file) On the right side, the DCS merge activity has been added. If we run the same job, we see no file copy for each

individual sub file. Instead, after generating the Subfiles and Main file, they will be combined into one by the DCS Merger, and this DCS Single file will be copied to a suitable destination.

The DCS Merge activity has no additional settings, so selecting the icon and pressing the edit button will not open an additional parameter window.

The DCS single file is however not a composite file. It contains the data for each plate separately, and is combined together with the main file into a single file for convenience.

9.20. Assemble DCS8 (Main and Sub)

Is used to convert a PSTI file into an unscreened (8 bit) DCS2 format that allows pages to be output to any PostScript device. These activities are typically part of a Portable PSTI (Single) workflow which will be discussed in the next chapter. The DCS8 Sub activity processes all colors together to produce one subfile per ink. A special conversion process (PSTIExporter) is responsible for converting the PSTI into this unscreened DCS2 format. The parameters for the sub files will be derived from the PSTI files, consequently the DCS8 Sub activity has only one parameters to be set.

9.20.1 Compression

As with other Assembler subtypes, the file may be uncompressed, LZW compressed or Flate compressed. This setting should be set to match the capabilities of the Target Rip, but for performance reasons, LZW is recommended.

The DCS8 Main activity is configured in exactly the same way as a normal DCS activity and has an optional Proof image or preview.

9.21. Assemble Separated EPS Proof

PostScript proofers may be driven in either composite or separated mode, and the PostScript output file may be transferred directly to the printer over Appletalk, file copy or FTP. When a standard workflow is created, PostScript proofing will contain three activities. The first one will generate a separated EPS proof, the second one will convert the EPS to a PS file, adapted for the proofer using the convert EPS to PS activity, and the last one will take care of the transfer of the final PS file. Separated proof should be chosen, if each separation has to be double-checked on a proof before printing.

The separated EPS proof window which will be opened upon double clicking the spyglass icon, is an Assemble Dialog (see 9.4. Assemble Separation on page 306. Most settings are identical, so only the new ones will be described.

9.21.1 Device

The separated EPS Proof window has access to the device list, so that also proofers may be selected from the list and the resolution may be adapted automatically. This is especially valid for the higher resolution devices to make screened proofs. The composite PS proof option only has the resolution definable.

9.21.2 User mirror

Another option not available when making a composite proof is user mirror. This option may have to be checked when we input an already mirrored file.

9.21.3 Allow scaling

For EPS files, checking this box would enable them to be scaled, mainly meant for unscreened data. For EPS proofs this is less relevant since they will most likely be converted to PS files, without using them in other applications.

9.21.4 include page comments

Page Comments is a PS comment, placing information about every page of a multipage file in the PostScript file. As this is a separated output, this comment can be useful. Whether or not to use this function depends on the system that will process the resulting PS file, and its ability to handle the page comments.

9.22. Assemble Composite Proof

This activity is used to create a composite proof file in either CMYK or grayscale format. This file will typically be converted to PostScript and sent to a PostScript proofing device using the Appletalk protocol, FTP or simply by copying into a mounted hot folder.

In a typical workflow, the proofing part will contain three activity icons. The first one will be Composite PS proof, the second one will convert the EPS to a PostScript file using the device specific parameters, and the last one will transfer the resulting file to the specific output device. (for example using Send over PAP)

9.22.1 Proofer...

All proofers being defined in the device list will be listed in this pop-up. Upon selecting a proofer from the list, the available resolutions will be displayed.

9.22.2 Resolution

As all proof files are images, the resolution should normally be set to that of the output device. Specifying a higher resolution is unnecessary and would produce large PostScript Files, without an additional quality gain. A typical setting would be e.g. 300 dpi. A higher resolution could be used in the case we use screened proofs, but the performance penalty would be considerable.

Unlocking the padlock could be useful if an output device supports multiple resolutions, so that it becomes controllable through the PPD options.

9.22.3 Orientation

This would normally be set to 0, as most proofers print in portrait mode. Rotated output may be appropriate to fit some paper formats. Another situation where the rotation could be set to 90 is for performance reasons when proofing PSTI, and where rotation has already been specified in the Bander

9.22.4 Polarity

The polarity is by default set to Positive. There is no clear situation where one would require a negative proof, but in case the input is negative, this enables you to invert this input and will result in a positive proof.

9.22.5 Color space

When sending PS data to a monochrome proofer, or when a monochrome proof is required on a color proofer, this should be set to grayscale. In all other cases CMYK should be selected, which is therefore the default setting.

9.22.6 Bit depth / Screening

This parameter defines whether the proof should be screened (bit depth = 1) or as continuous tone color (bit depth = 8). When making EPS proofs, this is normally set to 8, in case of DCS2 proofs, screened output would be the appropriate choice.

Having selected 8 for the bit depth, the screening button will be disabled, as screening parameters are not applicable to continuous tone output. When bit depth is set to 1, the screening settings become available.

9.22.7 Antialias

Is only available when the screening has been set to Unscreened and is mostly used to improve the line work and text quality on a proof. Antialiasing requires a longer calculation, and results in a slightly blurred effect to reduce "jaggies". There are no settings for the amount of antialiasing. This feature will not be used for film output.

The picture on the left is a PDF proof at 300dpi, viewed in Acrobat and created without using antialiasing, the one on the right uses antialiasing.

9.22.8 Compression

The compression type is only applicable to TIFF, EPS and PDF proofs, and really depends on the capabilities of the proofer's RIP. There are 5 possible settings: None, Packbits, Flate, LZW and CCITT G4.

For TIFF files the compression would normally be set to Packbits for performance reasons. For EPS and PDF, flate is the recommended option. If flate causes problems with EPS, Packbits can be used. Using none will result in large files, but could be useful for diagnosis of problems.   CCITT group 4 is only selectable in the case of 1 bit proofs, and is capable of generating very small file sizes. However, it will take a long time to decompress these files on the proofer's RIP.

9.23. Assemble TIFFs for RTL device / Assemble Epson Proof

This proof activity creates CMYK TIFF files with the required resolution, orientation and screening, before sending them to the appropriate download activity from which they will be sent to the final output device after conversion.

The Make TIFFs for RTL device will be followed by one of the RTL sending activities, while the Make Epson Proof will be followed by the Output Epson Proof activity.

When proofing a job containing spot colors, they will be converted in the merger, using the respective CMYK values, and Nexus will generate four process color TIFF files (e.g. J65P001_HP_B.tif). However for performance and quality reasons it is recommended to use dotproof, when proofing spot colors.

9.23.1 Device

If the Make TIFFs for RTL device activity is selected, the Device list will show all devices in the Device list (see 2.6.3 Devices... on page 42) that are defined as RTL device type. If the Make Epson Proof activity is selected all Devices defined as Epson Proofers will show.

9.23.2 Resolution

This popup should be selected according to the capabilities of the device. (300, 600 and 1200dpi for HP devices, 360, 720 and 1440dpi for the Agfa Sherpa or Epson). It is likely that different calibration curves will be used for the different resolutions.

9.23.3 Proof Options

• **Orientation**
The orientation defines how the input file is to be rotated to fit on the paper width. Where the input file is PSTI, it may be found that an orientation of 90 or 270 degrees may give better performance, other factors being equal. Clearly, it may be necessary to rotate some jobs to fit. The proofing activity is not aware of the width of the output media, defined in the RTL download activity. This means that there is currently no way to perform this rotation automatically. It may be useful to unlock the padlock, so that this option becomes accessible through the PPD options.

• **Black overprint**
Using these options will force all black to overprint or not, or will allow to knockout white backgrounds of QuarkXPress EPS files.

- **ArtPro Proofing**

  ArtPro has always used a different method for making a composite proof, converting spot colors to CMYK, than proofing in Nexus Rip. The option allows the user to choose the ArtPro method. The difference is most noticeable for opaque spot colors.

- **Calibration Mode**

  Calibration Mode can be used to calibrate 6 and 7 color proofers. For more info, please refer to the TechNote on 6 and 7 color proofers, which can be found on the Download Center.

- **Inks**

  By default this is set to CMYK. For six color proofers this can be set to CMYKcm (adding light cyan and light magenta), for seven color proofers to CMYKcmk (adding light cyan, light magenta and gray). For more info, we refer to the TechNote on 6 and 7 color proofers, which can be found on the Download Center.

9.23.4 Screening

TIFF files for RTL output have to be 1 bit, which is the default setting. The screening parameters are by default set to FM, using scale 1. However at higher resolutions, it may be appropriate to change the screening parameters. This is also where calibration files have to be selected for proof calibration.

It is not very common, but possible to drive an HP with 8 bit data. For the HP5000 it is even recommended to use unscreened data in combination with 6 color output. The HP1055 can accept both 1 and 8 bit TIFF.

9.23.5 Edit template

The names of the four process TIFF files can be configured using the edit template button, but since these files are usually immediately converted to RTL data or Epson data, there will be no reason for doing so.

9.23.6 Color Management

The color profiles to be used can be set here. For more info, see Chapter 12. Color Management on page 428.

9.23.7 Advanced options

The advanced options are the same as for any assembler activity. See 9.4. Assemble Separation on page 306 for more information

9.24. Assemble Kodak Approval Proof

The first cog wheel icon in an Approval workflow represents the Approval proof activity. It generates screened TIFF data which will be transferred to the Approval Expose activity. As the data is always screened TIFF, there are no settings for assembling the data. Most settings are the same as for the Assemble TIFF for RTL (see above)

Note: You need at least Kodak AIT v3.2 for a reliable connection to the Kodak Approval.

9.24.1 Settings

- **Address**

  The IP address of the Kodak Approval device

- **Fast Scan Offset / Slow Scan Offset**

  The offset of the job from the media origin in the units selected in the preferences.

- **Copies**

  The number of copies required

- **Recipe Filename**

  The filename of the Recipe File to be used for the color recipes. Default is PANTONE™Recipes.txt.

- **Media Save**

  On - Always On, minimize usage of donor material
  Off - Always Off
  Recipe - Dependent on the setting in the recipes
  Default is On.

- **Fail If Disk/Queue Full**

  When checked the activity will fail if the Kodak Approval Job Queue or Disk is full, if unchecked the activity will wait for space in the Job Queue or space on the Disk. Default is unchecked.

- **Fail If Ruling/Angle Conflict**

  When checked the job will fail if the ruling and angle combinations used in the job are unacceptable to the Approval device. Default is checked.

9.24.2 Kodak Approval and Dot proofing

The Make Kodak Approval Proof activity always generates a CMYK set of TIFF files. If there are spot colors, in a regular proof, the file is first converted to CMYK and then screened. This is very time con-

suming on Nexus and results in spot colors not being accurately portrayed (i.e. the spot color dot pattern is not shown, only a mixed halftone of CMYK).

Therefore it is not recommended to use this method for jobs containing spot colors, but rather to use the dot proof activity, so that the separations are screened before they are combined. That is to say in a 6 color job, 6 high resolution one bit TIFFs are created.

The spot color TIFFs are then separated into CMYK using stochastic screening and combined with the CMYK TIFF files. In the final proof a tint block of a spot color will show the correct screening. That is to say, you will see spot color dots. The benefit will be that the performance will be a lot better. (to learn more on dot proofing see 9.26. Make Dotproof on page 349)

When there are no spot colors in a job, dot proof and regular proof will generate an identical CMYK TIFF file set.

### 9.24.3 Kodak AIT (Approval Interface Toolkit) & Recipe Colors

Where the above described Approval activities in Nexus offer a direct interface to the OFE, Kodak developed its own Interface (AIT) which accepts screened data from third party RIPs. Using this interface from Nexus offers the customer the ability to use the Recipe Color technology from Kodak.

The AIT is a hardware and software solution from Kodak that accepts screened bitmap files from a RIP, and then converts the bitmap files to the output Open Front End (OFE) format required by APPROVAL XP/XP4 devices. When sending from Nexus to the AIT, the recommended file format are screened DCS 2.0 single files. See 9.18. Assemble DCS Proof (Main / Sub) on page 340.
In addition to its file conversion capabilities, the AIT interface also allows you to:

- Define and process recipe colors
- View and zoom TIFF files in a Viewer Mode
- Tile image files

The "Recipe colors" technology from Kodak is an alternative to the Dot Proof technology to proof spot colors, Recipe colors simulate spot color printing on a proof by combining several donors at varying densities to create unique solid colors. Spot colors are used when a color must be reproduced more accurately than is possible by using traditional CMYK donors. When File Lay Down Order is CMYK with Spot color overprint. The over print spot color is buried within the CMYK lay down order. For example to simulate PANTONE™ 185, a one bit screened TIFF is created for that separation.
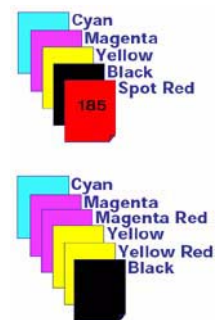
Then it is imaged with the Magenta donor and re-imaged with the yellow donor to make a red dot. The intensity of the exposure is varied to get more or less saturation to simulate lighter and darker colors.

More information on Kodak AIT and recipe colors can be found in the AIT users manual.

9.24.4 Color Stitcher and Approval

The color stitching activity, as described in 2.12.10 Stitcher on page 74, is a perfect way to save on the expensive material used for the Kodak Approval. It allows you to combine different pages on one sheet.

9.25. Assemble Presstek Proof

This activity will generate the screened TIFF data for the Presstek proofing device by using the assembler. The TIFF files created for this type of high resolution proofers always contain 1 bit TIFF screened data. The settings are the same as for the Kodak Approval

9.26. Make Dotproof

A regular proof activity, processing pages that contain spot color separations, converts all spot colors to process, before making the screened CMYK files, and possibly converting them to RTL data. From a performance point of view this is considerably slower, than screening every single separation and then combining the result (which is known as dot proofing).
The dotproof activity, represented by the cog wheel icon, converts the screened images for the spot color separations (that it receives from the assembler) into CMYK data, which is then added to the existing CMYK channels.

The dotproof option has the added advantage that screen dots may be distinguishable for the spot colors. The screened spot color separation is added to the regular CMYK separations in accordance with its CMYK proof equivalents, using FM screening dots. At higher resolutions, when AM screening is possible, the spot color screen dot can be seen to be composed of more than one color. In other words, the individual screen dot is not solid, but has a structure.

This technology is particularly appropriate for high resolution contract proofers, such as the Presstek and Approval, but works equally well on 300 dpi RTL proofers.

9.26.1 FM scale

The default size of the FM dots is one device pixel. For high resolution proofers only, it may be advisable to increase the size of the FM dot. This is done by selecting the required scale factor, using the FM scale in the dotproof window.

9.27. Make EPS Link File

Used to create an EPS link file to an OPPO, PSTI or composite TIFF file in a page workflow.

The link activity, shown in the workflow using a magnifying glass icon, creates a small EPS file and references an already ripped or processed single page or job. The usage of link files is one of the most powerful features of NexusRIP.

In the case of larger output devices, it is very common that the final output consists out of several jobs or pages. These large impositions or Step and Repeat jobs will be constructed using small link files referencing the single jobs.

All workflows generating link files are called Page Workflows. Several Page Workflows are predefined in Nexus and are accessible through the Add Workflow option. (all page workflows have been discussed in the "Add Workflow" section) Shown here is a Vector Page workflow including a Make Link activity and two Copy File activities.
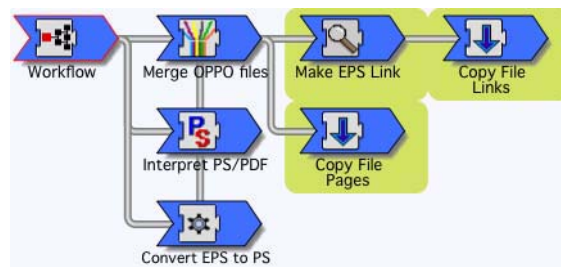
The Link activity creates a small EPS file, which references an already ripped page file (in this case a composite OPPO file) In commercial environments this EPS file will be used in Imposition software such as Preps, Inposition or DynaStrip. Here the Link file will reference a single page. Labels and packaging customers will use the Link files in Step and Repeat applications such as Power-Stepper, and the Link file will reference a single label or package.

All necessary information to make the Linkfile usable in these different environments will be included using various comments. The most obvious ones are describing the original job size, the colors that have been used (process and spot), the path to the ripped page,... Double clicking the Make Link activity will open the Assemble EPS Link File activity window.

9.27.1 Include Proof image

Checking this box will result in an image being included in the link file which could be useful for later imposition or proofing purposes. This option should be checked when proofing to a non-Nexus Rip, where the high res information is not accessible. Unless a proof image is included, the output on such a RIP will simply show a gray box, mentioning the filename path. The Proofer Rip will be able to use the included proof image. If unchecked, the proof image options will be disabled and the resulting link file size will be very small, since normally only a pict preview will be included.

9.27.2 proofer device

When creating an EPS link including a *Proof image*, this Proof image can be fine-tuned to the specific proofer that will be used, by selecting it device in the popup dialog. By selecting a proofer, its resolutions will be available in the popup.

9.27.3 Link to

This popup allows you to select which file type to reference to. The most commonly used formats are PSTI, OPPO and Separated TIFF which refer to Raster, Vector and Screened page.

A composite Page workflow can be build by using Composite TIFF as the file type to link to. From a composite TIFF proof, a link file will be derived in this case

9.27.4 Proof Resolution

This setting defines the quality of the included proof image and would typically be relatively low. It is the resolution of the proof image in dots per inch. 300 dpi would be a typical setting. The resulting linkfile will of course be larger, depending on this resolution value. Also printing the final PostScript from a job built with these link files will be significantly slower when containing large proof images.

9.27.5 Compression

This defines how the image data in the proof is to be compressed. Flate offers the most efficient compression, but some Proofer RIPs may not yet accept it. Packbits is the default and most widely used compression type. CCITT Group 4 compression is only applicable to 1bit or screened proofs.

9.27.6 Preview Type

To facilitate the placement of link files in applications, a preview can be added. The type of preview may be selected from the popup, and is related to the application or platform in which the link file has to be viewed. Specifying None will not include a preview at all, resulting in a very small link file.

9.27.7 Advanced options

This button opens the same Advanced Options dialog as in the Assembler. See • Advanced options on page 310.

9.28. Make PDF Link

Where an EPS Link file is the default for Page workflows, PDF link files may be generated as well to be used in imposition and S&R applications that support the positioning of PDF files. The PDF file will contain an "AWSInfo" color list, containing all used separations,. This info can be used for Step and Repeat in ArtPro.

Note that Pageboxes are stored in the PDF link file when defined in the original PS or PDF file.

The different settings in the Make PDF Link file activity are identical to the settings for EPS link files, explained earlier.

9.29. Make EPS Link to TIFF

This activity is a special version of the Make Link activity and is used to make link files that reference separated TIFFs. This is typical for a Screened Page workflow. Since there is a separate file for each separation, this link file will have to reference multiple files, instead of one composite OPPO or PSTI file.

The Make EPS Link to TIFF window is identical to the make link window, but separated TIFF will be the default option to link to.

9.30. Agfa FTP

One of the options to drive Agfa devices is to send the separated screened data to the Agfa Printdrive over FTP. In order to be able to accept Nexus TIFF files, the PrintDrive Open Connect option must be enabled on the PrintDrive dongle and the Printdrive software must be at least version 2.1. Of course on the PrintDrive hardware, an FTP server must be running, and a folder shared for FTP usage. Under these conditions a JDF workflow to the PrintDrive may be set up from Nexus.

The job description file (JDF) specifies information needed by a PrintDrive system to create a PrintDrive compatible job on its job list. It is a token file, generated through the FTPExposer when outputting to Agfa by FTP. This mechanism allows Nexus to pass information to the PrintDrive, which is not contained in the TIFF header tags. Information definable in the JDF files is: job name, path names, number of pages and separations, etc.

In the case of Agfa FTP, all separated files for a job will first be created, before being transferred to the Agfa PrintDrive together with a JDF file. On the PrintDrive it is important to receive all the data together, so that each job can be treated as an entity. This facilitates further plate management and eventual proofing from the PrintDrive.

Because of this reason, there is a default order dependency between the separation and the FTP activity, so that transferring the data only begins upon finishing all separations.

Note: If you send screened TIFFs over an APIS connection to PrintDrive, every separation will be seen as a separate job.

9.30.1 Address The IP address of the PrintDrive system (FTP server).

9.30.2 User & Password The username and password are to be found in the NT user manager console on the PrintDrive.

9.30.3 TIFF path Defines the folder where to copy the TIFF files to. If left empty then all TIFF files will be sent to the root FTP directory.

9.30.4 Target path Is what will be inserted in the JDF file as path name.

9.30.5 Token path

Is the location where the JDF file must be sent to. If the Token path is left empty then the JDF will be sent to the root FTP directory. If you plan to use a Token path then this must be a path relative to the TIFF path. When using more than one workflow on the PrintDrive (e.g. for different plate sizes) it is necessary to use different TIFF and Token paths.

9.30.6 Include Unique ID

This option includes a unique ID in the JDF. When this option is off, every incoming ticket at the Agfa is handled as a new job, even if it is a retry of an existing job. If the Agfa FTP activity is retried while this option is on, the same ID will be kept, and the job will be over-written.

9.30.7 Flats Mode

The Flats Mode enables sending to an Agfa Flat-Based workflow. If set to "on", "flats" will be sent over to the Printdriver as 1 single file instead of multiple files. To send flats as multiple files, the option should be unchecked.

9.30.8 Token File name

If a PostScript file coming from Preps contains Surface and Side information, this information will be added to the Agfa JDF. The Token File Name can be defined using the File Naming Template.

9.31. Gerber FTP

After generating the separations in the assembler for Gerber output, the screened TIFF files have to be transferred to the ImageHub using FTP transfer. All Gerber output devices are platesetters, and the Image Hub takes care of the plate management, and the physical connection with the different Gerber types. Together with the screened TIFF files, a token file will be sent to the Image Hub, containing various image positioning, exposure and media parameters.

9.31.1 Address

IP address of the Image Hub, to send the TIFF and token files to.

9.31.2 User & Password

These will be used when making the connection over FTP. Of course this user must be defined on the Image Hub

9.31.3 TIFF & Token path

These two directory paths define where the screened TIFFs and the token files have to be copied to.

9.31.4 Imager

The appropriate type of Gerber device has to be selected from the popup, important for max plate sizes and available resolutions

9.31.5 Offset X&Y	Used to specify an offset, using the units as defined in the preferences, for the image to be positioned on the plate. By defining an X & Y value this may be done in both directions.
9.31.6 Copies	Has to be set to more then one if multiple plates are required with the same imaging parameters and data.
9.31.7 Media Length, Width, ...	These parameters define all plate specific characteristics. Type in the exact plate sizes. Select the appropriate plate type from the popup as shown. Also select whether the plate is a positive or negative plate and finally specify the thickness of the plate, which is important for the media handling and cassette selection if available.
9.31.8 Exposure	Identical to Agfa devices, the laser intensity may be adjusted from the front end, which may be useful for linear calibration.
9.31.9 Polarity & mirror	Polarity allows you to select the imaging polarity. Selecting negative will invert the existing TIFF image. If negative was defined through the assembler, the image will turn positive again. The reading may be controlled by means of the mirror check box.
9.31.10 Paper interleaved	Check this option when using paper interleaved plates.

9.32. Optronics FTP

When outputting to Optronics Imagesetters, the FTP copy procedure is used to transfer screened TIFF data to the server. This activity is almost identical to the generic FTP activity, but has an additional token path and target path. The target is the path included in the token to the TIFF data. This activity has no additional device specific parameters.

9.33. Saturn FTP

When driving Crosfield or Fuji RiPs through the Saturn Rip, a screened TIFF file, together with a token file is sent to the Saturn using FTP copy. The Saturn Rip, running on a Sun Sparc station needs the Import Option, capable of taking in 1bit screened files. Newer imagesetters will have the Celebra Rip as front end, which is able to read the TIFF and token file from this Nexus activity as well.

The token file contains the necessary information to ensure that the correct resolution is selected and the correct color information for the separations is reported.

9.34. Purup FTP

If Purup has been selected as the output device, screened TIFF files are sent to the Purup Print server. This server may be a PC, using the Purup Direct TIFF Exposure software and being configured as a standalone 1 bit TIFF spooler to Purup, using a TAXI interface card. Other possibilities are a full Purup Rip with this extension, or a Harlequin Rip with a Purup interface.

The FTP to Purup editor contains the standard FTP settings. There is no separate directory path for the TIFF files and token files.

9.34.1 Media

One of the parameters included in the token file is the type of media used. The number in the popup is linked to a specific cassette on the imager.

9.34.2 Punch

This setting allows you to specify a predefined punch position

9.34.3 Offset

It is possible to specify that the image must be offset by the defined amount in inches in the fast scan direction, and relative to the punch.

9.35. Output PostScript via Appletalk

This activity is used to send a PostScript file to an Appletalk device.

In a typical NexusRIP workflow, this activity will be preceded by a separated or composite proof activity and a convert EPS to PS activity.

9.35.1 Printer name

In this field, the name of the Appletalk device must be entered. To locate this device, it must be published on the network. Pressing the Choose button will open the Chooser, which allows you to select the required printer.

9.35.2 Zone

In the chooser, the different zones will be shown on the left side. If no different zones have been defined, an asterisk will be shown. (*)

9.36. Make RTL

For certain wide imposition proofers such as the HP1055 and the Agfa Sherpa, it is recommended to drive them directly using the RTL code rather than using conventional PostScript proofing for optimal performance. Many of these proofers have no built-in PostScript Rip, and may only be driven by RTL data.

The Make RTL activity will typically be part of a workflow where the RTL data will not be sent directly to a proofer over FTP, but rather copied to a predefined destination, using a file copy activity. This activity takes in process color TIFF files generated by the Make TIFFs for RTL activity at the required resolution, and converts them into RTL code (e.g. J63P001.rtl), before copying.

9.36.1 Paper settings

All paper settings work the same as described in Output Epson Proof (see earlier)

9.36.2 Enable UCR

This option is only available for Sherpa, Sherpa 2/Sherpa 43, Iris43 and Grand Sherpa output.
UCR or Under Color Removal is a printer feature and is not done by NexusRIP. The Sherpa can do UCR on its own and it has no parameters. It works on a pixel level. If at a particular pixel all CMY colors are to be printed then this option will print K instead.

9.36.3 Edit Cyan, Magenta, Yellow, Black

Color calibration for RTL proofing devices is normally controlled using calibration files at the time of generating the process TIFF files. In addition it is possible to adjust the color rendition values on the proof by changing the intensity of the different inks. Each 100% of a process ink may be mapped to a reduced amount of that ink using the edit separation buttons. In order to cut back the intensity of the cyan on the proof for example, we press the Edit Cyan button to open the select color window. This is the exact same window as is used to define the process color values for undefined spot colors in the merger. However in this case, it is only used for the process colors. Reducing the intensity of the cyan is achieved by using the slider, or typing in the desired value and confirming it with the OK button. If a calibration file was used, the proof will show the result of both.

If appropriate, cyan can be redefined with a small proportion of the other available process colors to compensate for the actual ink color in the proofer. This would not be possible with a normal calibration file only.

9.36.4 RTL Device

The RTL Device should be set according to the physical printer type to be used. This may not only affect some physical capabilities such as the maximum media width, but it may also result in different RTL code. Each RTL Device is slightly different, e.g. the sherpa 2 is a dual sided plotter, and the Sherpa 43 uses 6 inks to achieve a better color quality.

9.36.5 Send as RGB

This check box can be enabled for 6-color output to, for example, the HP5000. In that way, the 6-color separation will be done by the HP Rip.

Selecting this option will result in a contone RGB RTL file, which will be converted to six colors on the HP5000 itself. In the preceding Make TIFFs for RTL activity, the bit depth should be set to 8. If Send as RGB is not selected, a normal CMYK RTL file will be sent, and only 4 inks will be used.

9.36.6 Output

In Nexus. the resulting RTL data will not always be downloaded to the plotter directly, but may be transferred to a predefined directory. Using the template editor, location and file naming can be set up.

9.37. Make RTL & Download

The Make RTL & Download process is performed using the FTPExposer module, whose log reports parameters and codes being downloaded.

As with the RTL convert activity, described earlier, process color TIFF files from the HP Proof activity are the input, and an RTL file will be created, and downloaded according to the defined parameters. The RTL download icon is represented by the generic copy file icon.

The Make RTL & Download parameter window is almost identical to the Make RTL window, except for some specific download parameters to be defined in addition. The other parameters have been explained in 9.36. Make RTL on page 357.

9.37.1 IP Address

The image data is sent to the RTL proofers over FTP as four color separations. In order to locate the required printer on the network, its IP Address must be specified. No username or password are required. The IP address is not necessary if a parallel connection is specified through the Port popup.

The IP address of a proofer has to be predefined in the workflow, and may not be defined when printing using a PPD option. Proofing over FTP will in theory also allow you to proof to a remote proofer over the internet. If the proofer is not online, or there is a problem with the IP address, an error will be generated in the FTPExposer

9.37.2 Port Type

The default setting here is HP which has support for queue management. However some older proofer types may require the LP setting. Some plotters, lacking an ethernet interface, may require a parallel cable connection. In the latter case, there is no need to specify the IP address. Sending over Parallel cable is slower than using FTP transfer over ethernet.

9.37.3 Module

The FTP Exposer module takes care of the download activity. If multiple FTP Exposers have been created, this popup can be used to assign a specific FTP Exposer to the download activity of the workflow. A more detailed explanation on how to set up and use multiple modules can be found in 2.14.3 Multiple Modules on page 86.

9.38. Expose Epson Proof

The direct driver available for Epson Stylus 7000 and 9000 series is limited to CMYK only. The Output Epson Proof activity takes in the CMYK TIFF files from the Make Epson Proof activity and converts these to an EscP file, which is the Epson internal file format.

9.38.1 Paper

- **Paper Width**

  This field, expressed in preference units should correspond to the physical paper width in the printer. The indicated value of 914.4 mm corresponds to the common size of 36 inches for large format proofers.

- **Center Width**

  This check box is only available if the paper width is not equal to 0. Checking this option will center the job if it is narrower than the actual full paper width. In this case there will be a margin on either side of the image, equivalent to half of the difference between the image width and the paper width.

- **Paper Height**

  There is no specific way to generate a bottom margin, but if a paper height is set which is larger than the image height, a white space area below the proof image will result. For roll fed media,

this is not very relevant, since the exact height will always be used. This setting is primarily for output devices using sheet fed media, where the available paper height is limited.

- **Center Height**

  When a value has been specified for the paper height, this option becomes available. Checking it will result in the image being centered in the vertical direction so that top and bottom margin will be equal.

- **Paper Thickness**

  This option allows the user to define the thickness of the media to be used. If the feature is enabled then the edit field allows a number in the range 0.0 mm -> 1.6 mm to be entered. The default is 0.2mm.

- **Feed Adjustment**

  The print head prints a band of scan lines at a time. When a band has been completed the paper is then fed so that the next band can be printed. There can be a small deviation in the amount of paper fed, due to the thickness (and possibly other properties) of the media. To correct this you have to adjust the amount of feed, dependent on the media.

  If the paper feed is incorrect you can see one of two possible effects:

  - Too much feed and each new band will be printed slightly too far after the band before it. This will result in white horizontal lines (spaces) at regular intervals in the output.

  - Too little feed and each new band will slightly overprint the band before it. This will result in dark horizontal bands at regular intervals in the output.

  If the feature is enabled then the edit field allows a % value in the range -1% -> +1% to be entered. The default is 0%.

  If the feature is not enabled, the setting in the printer will be used.

  An option called "Define Adjustment" enables the feature.

  This feature is not available for 7000/7500 or 9000/9500.

- **Roll Feed**

  Having this option unchecked will use cut sheets and pick them up from the standard media basket. On an Epson 9000, cut sheets vary from A3 - B0+.

  Checking this option will use the Roll paper media. Auto cut will automatically cut the roll after each job, and Bottom margin controls the margin at the end of the job to be left.

- **Margin**

  These options allow you to position the image with respect to the paper width. The Offset width value will specify a left margin, equal to the specified amount in the input field. If center width has been checked in addition, the image will first be centered according to the specified paper width, and the offset will be generated starting from that position.

  The Offset height value, will specify a top margin of the defined amount above the image. If center height is checked, the image will first be centered in the paper feed direction, and the offset will than be generated, starting from that position.

9.38.2 Output

- **Output Mode**

  Most Epson proofers use a fast parallel connection, however when the optional ethernet interface is installed on the proofer, transferring the EscP data using the FTP protocol becomes a possibility.

  Setting this to FTP will enable the IP Address, User and Password fields. If no username and password have been defined on the proofer yet, the defaults are "anonymous" for the user and a space for the password.

  When set to Parallel. the EscP data will be sent to the proofer over the standard fast parallel connection. If a Port name has been defined, it must be specified in the edit field.

  When set to File, the Edit Template becomes available, and files will be created. These files can be copied later on by a Copy File activity.

  When set to TCP/IP, the IP Address can be entered.

- **Epson Device**

  The most common Epson plotters can be driven and selected from this popup.

9.38.3 Epson

- **Print Direction**

  This option allows the user to define the printing direction: either automatic, uni-directional (only in one direction) or bi-directional (printing back and forth). When printing in both directions, two bands of scan lines can be printed with each pass of the head and therefore output can be produced twice as fast. However, because each drop of ink is thrown slightly in the direction of travel of the head, pixels in even and odd bands may not be precisely aligned. For very best quality you can choose to print in one direction only. The pixels will all be thrown in the same direction and should therefore line up more accurately.

- **Platen Gap**

  Platen gap is the gap between the surface of the paper and the head. You are supposed to get better quality by minimizing the platen gap, presumably because the head is then closer to the paper and the ink droplets are less likely to stray from their intended path. However, if the platen is set too low you should watch out for heads crashing into the paper and getting damaged.

  A bigger platen gap is required for thicker media, in fact a high platen gap is forced if you set paper thickness greater than 0.6mm. However, it appears that a high platen gap may also be required for thinner media where there is the possibility of "cockling" (the distortion you get when paper expands as it absorbs excessive ink.)

  The choice of settings is "Default", "Minimum", "Narrow", "Wider" and "Widest".

  Only the "Default" and "Widest" settings are available on all Epson models. The other settings are only available on 4000, 7600, 9600 and 10600.

  You should only use the "Minimum" setting with "non-cockling" media, i.e. gloss or semi-gloss only.

- **Ink Type**

  The Epson 4000 proofer has two kinds of black ink. Photo black is the standard black ink and Matte black is a darker black which can be used with matte paper. Matte black does not work well with shiny media as it lacks adhesion and scratches easily.

- **Epson Ink, Compress data, Microweave & Dot size**

  These options provide Epson specific controls on the output quality and file size of the proofs. All details can be found in the plotters manual.

9.39. Expose Kodak Approval Proof

The Approval is a typical dot proofer, used at high resolutions, mostly even the output resolution of the filmsetter. They don't use any color information, but take in bitmaps which will be colorized using color donor sheets, loaded into the device.

Using the kodak approval expose activity is the standard way to drive the Kodak Approval. Kodak developed an interface for third parties called OFE (open front end). This interface is standard on the newer Approvals, but not on the Classic one and runs on hardware provided by Kodak.

The approval expose activity is represented by the cog wheel icon, and is preceded by the approval proof activity, or the dotproof activity.

The expose activity takes in screened TIFF data and recombines it and transfers it as a data stream using FTP protocols to the Open Front End platform.

9.39.1 Address

The IP address of the PC running the OFE software must be entered here

9.39.2 Fast & Slow Scan Offset

These offsets using the predefined units, are used to position the image on the proof. Note that the final offset may be adjusted slightly, because they have been rounded to the next highest multiple of 32 pixels at device resolution.

9.39.3 Copies

Normally set to one, unless multiple copies of the proof are requested

9.39.4 Media Save

Switches the Media Save option on the Kodak On or Off. "On" will start outputting all separations using the same donor, and will continue by outputting all separations using the same donor, before switching to another donor. This is the most economic way, but it does not take the Layout Order into account.

On a Kodak Approval, every separation is built from one or more "donor" colors. In some cases, the order in which these donors are applied will influence the resulting color. E.g. if a PANTONE color consists of magenta and yellow, the color can look different if the magenta is printed first or if the yellow is printed first. When setting Media save to "Advanced", the same printing will be done, but it will respect the order of the donors.

9.39.5 Fail if Disk/Queue Full

This setting sets the job to a Failed state if the Disk or Queue is full.

9.39.6 Fail if Ruling/Angle Conflict

This setting allows the user to set the job to a Failed state if there is a Ruling or Angle conflict between the file and the device.

9.39.7 Fail if Donor not loaded

If a donor necessary to proof the job is not on the Kodak Approval, the activity will fail in Nexus.

9.40. Expose Presstek Proof

Similar to the Approval workflow, a Presstek workflow contains at least two activities. One for generating the proof data, and one for transferring the data which is the Output to Presstek activity. Once the proof has been made, whether it is a regular proof or a Dot Proof, the data is expanded and transferred to the device as a data stream over FTP. The Presstek Output is actually a special FTP activity.

9.40.1 Address, User, Password

As is the case with all FTP outputs, the IP address and the necessary user and password information must be typed in before data can be transferred over this protocol.

9.40.2 Destination path

An explicit destination path must be defined rather than relying on the default FTP root directory.

9.40.3 Output

The File Naming Template allows to change the default name that the activity uses to transfer CMYK separations to the Presstek. By default it is empty and generates filenames that are no longer than 8 characters + 3 characters for the extension (.BLK, .CYN, .MAG, .YEL). Even if the file naming template is changed, this extension will be added automatically.

9.41. Output to GMG

Nexus is capable of generating token files for the GMG ColorProof System. This system runs on a standard PC under Windows NT or 2000.

It consists of a Profile Editor, an Output Control Module and Software RIP. In the Profile Editor, color conversions are generated and processed, based on technical measurements. The GMG system is frequently used for Spot color matching in Packaging environments and is capable of driving the IRIS, Epson Stylus series, HP design-jets,...

The GMG file copy activity copies the TIFFs together with the Token file in a hot folder on the GMG PC

9.42. Fuji Final Proof

Nexus is capable of generating token files for the Fuji Final System.

The Fuji Final Proof file copy activity copies the TIFFs together with the Token file in a hot folder on the Fuji Final Proof system.

Only settings to be made are the File Naming Template (see 3.6. File Naming Template on page 132) and the server system to be used.

9.43. Agfa (Agfa) & Agfa (Highwater)

Both of these rip drivers differ only in the APIS card that is being used. The control parameters and window are the same and are defined through the Agfa Expose window.

Both solutions will be used in the case of a direct output to an Agfa imagesetter or Agfa platesetter (through the PrintDrive). They do support all Agfa imagesetters such as Accuset, Avantra and Selectset. The Highwater APIS card or the Agfa APIS card must be installed together with the appropriate drivers as explained in chapter 1. The Agfa card is faster (16 bit) and supports a direct connection to the Phoenix.

When setting up a workflow with a direct Agfa output, the Assemble Separations activity will always be included. It is important that this one must be configured in such a way to generate separated TIFF files at an appropriate resolution for these Agfa devices. This is typically in the range: 1200, 1800, 2400 or 3600dpi. Depending on which driver is used, the appropriate APIS exposer will be used to process and download the data. In the case of a Highwater connection this would be the HWAPISExposer, in the other case the AgfaAPISExposer module would be used. The available options in the Agfa Expose window are identical for both APIS card types, but are depending on the exact output device that is being driven.

9.43.1 Input source

This option provides control over which output cassette or bin should be used when outputting film through this workflow. If different film types or film sizes are used on the same imagesetter, this popup allows you to select the exact cassette.

Use Current settings will take over the settings as they are on the imagesetter itself.

Most Agfa imagesetters only have 2 available cassettes, so the only relevant options will be A and B. The Galileo Platesetter offers a choice of up to 4 different input bins. Options 5 to 10 correspond to preferences on the Phoenix rather then physical input slots. Switch when empty is important when two cassettes have identical film, and the first one runs out of media, the second one will take over. This feature can be very useful in environments that output film overnight. This option is not available on the Galileo and the Phoenix.

9.43.2 Image Positioning

- **Use Media:**
  The larger Agfa imagesetters have the ability to support margin control on output in order to avoid having to advance film after every image. Instead the margin can be moved in such a way to allow the next image to be placed alongside if it fits the available space. The margin settings can be defined on the imagesetter front panel. If the image to be exposed does not fit the available space, the film will be advanced. This is basically an alternative to using the stitcher in order to conserve film, but is of course limited in usage. The film will also be advanced when there is a resolution change, when a preset time frame has been exceeded or when the remaining film space is smaller than a predefined value

- **Center Image:**
  Will result in the image being centered on the film width. The margin required to center the job on film is determined. Small imagesetters like the Accuset do not support this capability.

- **Align Left:**
  This will align the image with the leftmost edge of the film. There are no facilities available to align with the right edge of the film or to apply a specified predefined margin.

9.43.3 Image gap when Media saving

When using the *Media Saving* option for Image positioning, you can define the gap the imagesetter has to leave in between the individual jobs. The *Gap distance* can be set both in width (using the *Across media* option) as in length (*along media*) directions.

9.43.4 Select Media Punch

This popup enables you to select the desired punching type on the imagesetter if available. In order to ensure that the image is positioned correctly in relation to the punch, it may be necessary to add 180 degrees to the orientation parameter in the separations activity. When selecting engine default, the settings on the imagesetter touchscreen will be taken over.

9.43.5 Negative (Galileo only)

Where as normally, negative output is specified through the Separations Editor by changing the polarity, it is recommended in case of the Galileo to output a positive TIFF file with instructions to negate on the engine itself. For Galileo output, there will always be a Printdrive Spooler in front of the Platesetter. From Nexus you can both send data through an APIS connection, or by sending over FTP. Advantage will be that the preview on the PrintDrive will be positive.

9.43.6 Mirror

This option would normally be set in the separations activity but as with the negation, it makes sense to mirror on the engine in the case a Printdrive is used. Checking this option will add the instruction to the APIS output to mirror the data on the platesetter. The preview on the Printdrive will be right reading.

9.43.7 Cut After

When checking this option, the film will be cut and processed after each image being exposed, regardless of the size and the next images to be exposed. When Media Save is selected in the output options, the cut after command will be overruled.

Of course this facility is only appropriate when an online processor is available, otherwise the exposed film will just be gathered in a separate cassette before manual developing.

9.43.8 Time Out

If the Cut After option is off, the imaged film will stay on, waiting for other films to be imaged before cutting. If a film is exposed, and the Time Out time is passed, the film is cut anyhow, to prevent film staying on the imagesetter too long.

9.43.9 Density

If the Set Density Value option is on, the Density Parameter input field becomes available.
The density parameter provides control over the imagesetter exposure. These settings will mostly be used to do linear calibration on the imagesetter, and may as well be done on the imagesetter itself. But in the case of Flexocal, it will be convenient to be able to define this parameter in the workflow.

When this box is checked, and the density value is entered in the text field, the value from the imagesetter itself will be overruled. If different values are required at different resolutions, the use of multiple workflows is recommended, since there is no ability to input this parameter through the PPD options.

9.44. Hell Job Ticket

Customers using a HelioKlischograph or HelioFlex from Hell Gravure can now optimize their workflow by using the Hell Job Ticket option in Nexus.

In the ArtPro or Powerlayout PS file, all relevant information such as Test Cut Areas, Ink coverage, separation names,... is stored. Nexus RIP generates 8 bit TIFF data for gravure and copies them into a directory, using the file copy activity. This same output directory must already contain the jobtickets, generated by the HelioDisk. These Jobtickets hold the gravure specific parameters. The Hell Jobticket Activity reads in the images and the Heliodisk Jobtickets and updates these with the information that was stored in the ArtPro PS file.

This feature also supports PS from generic DTP applications, but the added value is minor in these cases. More information on this specific Jobticket workflow can be obtained from Hell Gravure.

Chapter 10. PDF Processor & RIP Activities

The PDF Workflow activities consists of a number of activities that can be found under the PDF Processor and PDF RIP category.

It is a PDF rip, capable of taking in PDF files and directly rasterising them to the desired output format, without importing and converting to other file formats (such as OPPO or PSTI)

The PDF Processor activities allow to process PDF files. The PDF RIP activities are comparable to the Nexus Basic RIP activities, and contain the same settings of their equivalent activities.

10.1. Distiller

The Distiller activity allows the user to convert PostScript files to PDF files using Acrobat Distiller. By selecting a Distiller Hot Folder in the parameters of the Distiller activity, a PostScript file will be send to this Hot Folder and converted to PDF. All relevant settings need to be made in Distiller when setting up this Hot Folder.

Note: A licensed copy of Acrobat Distiller needs to be installed on the server in order to use the Distiller activity

Note: Unlike other PDF Workflow activities, the Distiller activity will NOT error on files other than PDF files. PostScript files will get distilled, and other files will be passed on directly to the next activity.

10.2. PDF Prepress

The Prepress activity allows the user to make some prepress-specific modifications to a PDF document.

10.2.1 General settings

- **Output File**

  The Output File button opens the File Naming Template dialog, allowing the user to define the name and location for the output file. See 3.6. File Naming Template on page 132.

- **Incremental Save**

  Defines whether to save the file optimized with all changes, or to save it Incrementally, adding all changes to the existing file.

10.2.2 Inks settings

- **Convert RGB, LAB, etc. To CMYK**

  This allows to convert everything which is not CMYK or spot color, to CMYK.

- **Convert PANTONE Suffix**

  Allows the user to convert the PANTONE Suffix (CV, CVC, CU,...). If it is off, the Suffix will be left unmodified. If it is switched on, the Suffix of all PANTONE separations will be changed to the defined PANTONE Suffix. If the Convert If Found In Librarian option is on, only inks found in the Librarian will be changed. When using Rename Inks AND Convert PANTONE Suffix Mode, the renaming is done first. This means that in the Rename Ink section, the original PANTONE Suffix needs to be used in the From field.

- **Fail if Converting Color Spaces**

  If this option is on, the activity will fail if any color space conversion needs to be done.

- **Inks to Rename**

  Allows the user to rename inks. The "From" field is the original name. The From name can contain wildcards (*), causing all matching inks to be merged in the separation defined in the "To" field.

- **Inks to Convert**

  Allows the user to convert specific inks to CMYK. The input field can contain wildcards (*), causing all matching inks to be converted to CMYK. The function is case sensitive.

- **Inks to Remove**

  Allows the user to Remove the defined Inks. The input field can contain wildcards (*), causing all matching inks to be removed. The function is case sensitive.

- **Ink Name Normalization**

  The Ink Name Normalization option allows to normalize or change the names of the separations.
  "Leave as is" means no changes will be made.

If "Normalize" is chosen, Nexus will compare all separation names, and all names that only differ in case will be changed into the name with the most lower case characters.

If "Convert to Upper/Lower Case / Pretty Print" is chosen, all separation names will be changed to upper case, lower case or pretty print. In all these cases, "PANTONE" is always converted to upper case.

- **Keep Separation Interaction**

Using this option, removing any separations will not affect the result on other separations. If e.g. a CMYK white object is on a spot color background, removing the CMY separation would result in removing the white shape. By switching on the Keep Separation Interaction option, the white shape will be retained.

- **Remove Unused Separations**

Allows the user to remove all empty, unused separations. Registration colors are not taken into account when defining the separations that are in use.

- **Update Spot Color Equivalents**

This option handles CMYK values for Spot Color inks. If the option is enabled, CMYK values found in the file will be overwritten by the CMYK values from Librarian. Otherwise, the values from the file will be used.

10.2.3 Colors Settings

- **Thumbnails**

If Thumbnails is set to "Leave As Is", the thumbnails will not change. If set to "Add Thumbnails", a thumbnail will be added if there is no thumbnail yet, using the size as defined below. If set to "Remove Thumbnails", any present thumbnail will be removed.

- **Ink Collection**

By entering an Ink Collection Name, you define what Ink Collection Nexus should use. See the Librarian documentation for more info on Ink Collections.

- **Spot Color Lookup**

If set to "Look in Ink Collection First", the PrePress activity will look for the Ink information of Spot Colors in the Ink Collection first. If not found there, the Ink information from the job will be used.

If set to "Look in Ink Collection Only", the PrePress activity will look for the Ink information of Spot Colors in the Ink Collection. If not found there, the job will error.

If set to "Use Colors in Job", the PrePress activity will use the color information from the job.

Note: When looking for ink information in the job, this search is NOT case sensitive. This is to avoid that no matching color is found because of the Ink Name Normalization.

- **Color Management Engine**

  Allows to set the Color Management Engine to be used: ICM/ColorSync, Adobe or Little CMS.

- **Color Profiles Embedding Mode**

  When choosing *Leave as is*, the profiles that are embedded will remain, and no profiles are added. When choosing *Embed*, the already embedded profiles will remain, and additional profiles will be embedded. Using *Embed and Overwrite*, the profiles defined in the activity will be embedded, if necessary overwriting the existing profiles. *Remove embedded color profiles* will result in a file without any profiles embedded.

- **Convert Gray to Black**

  Using this option, you can convert Gray to Black. If this option is on, the Gray Profile option is redundant and will be disabled.

- **Color Profiles**

  Default Profiles will be used in case color conversions have to be performed without having the calibrated color information. E.g. when converting an object in DeviceRGB to DeviceCMYK. Since DeviceRGB has no profile, the default profiles will be used.

10.2.4 Images settings

- **Downsample Images**

  Switch this parameter on if you want to downsample images' resolution.

  This makes the following resolution parameters available: Max Bitmap Resolution, Max Contone Resolution, Bitmap Downsample Resolution, and Contone Downsample Resolution.

- **Max Bitmap / Contone Resolution**

  Enter the maximum resolution you want your file's bitmap or contone images to have.

  If the images' resolution is higher than this maximum resolution, they will be downsampled to the Bitmap/ Contone Downsample Resolution.

- **Bitmap / Contone Downsample Resolution**

  Enter the resolution to downsample bitmap or Contone OPI images to, if they have a resolution above the Max Bitmap/Contone Resolution.

- **Crop Images**

  Switch this parameter on to crop images to the minimal rectangular area that contains all the pixels needed for the job.

  This makes the Combine Threshold parameter available.

- **Combine Cropped Images Threshold**

  This parameter is available when Crop Images is on.

  It defines how the activity will crop the image, depending on the percentage of the image pixels needed for the job.

  - If the percentage of pixels needed for the job is more than the threshold, the activity keeps the job pixels together when cropping the image.

  - If the percentage of pixels needed for the job is less or equal to the threshold, the activity splits those pixels in several areas when cropping the image.

  The default threshold is 50%.

- **Recompress Image Data**

  This allows to recompress images according to the parameters underneath (they become available when you switch Recompress Image Data on).

  The available compression depend on the type of image.

  If a Compression quality is defined, the activity will recompress JPEGs of higher quality than the quality selected, if the original image has a lower quality of the one defined, the image will not change.

10.2.5 Text & Overprint

- **Text Mode**

  Allows to set how fonts need to be treated. Leave As Is will cause no changes. Embed Fonts will embed the used fonts. Vectorise will convert all text to outlines.

  Embed And Rename is a function that will embed the fonts, but not under their original name. This is to avoid Acrobat trying to use live text anyhow, which can sometimes give wrong results when another font with the same name is found.

- **Convert CID Fonts to Simple Format**

  This option converts CID fonts to simpler font formats. This can be used e.g. to reduce problems with InDesign files embedding CID fonts, that can't be processed on older systems.

- **Stroke Mode**

  If Stroke Mode is set to Leave As Is, strokes will remain strokes. If set to Outline Dashed Only all dashed strokes will be converted to paths. If set to Outline All, all strokes will be converted to paths.

- **Black Text To Overprint / Ignore Text Larger Than**

  The Black Text To Overprint option allows to set 100% black text to overprint. If the Ignore Text Larger Than option is on, text larger than the entered value will not be set to Overprint

- **Black Vector To Overprint**

  The Black Vector To Overprint option allows to set 100% black objects other than text to overprint.

- **Technical Objects To Overprint**

  This option allows to set objects in Technical Ink to overprint. Technical Inks are defined in the Ink Collection

- **Varnish Objects To Overprint**

  This option allows to set objects in Varnish Ink to overprint. Varnish Inks are defined in the Ink Collection

- **Opaque Ink Vector / Text To Overprint**

  This option allows to set line art / text in Opaque Ink to overprint. Opaque Inks are defined in the Ink Collection

- **White Vector / Text To Knockout**

  This option allows to set line art / text in white to knockout.

10.2.6 Boxes settings

The Boxes tab allows to define or resize page boxes. By clicking the + button, you can add a page box.

- **Box Type**

  The Box to be modified.

- **Reference Box**

  The base to start from.
  If set to Absolute, the Width and Height will be used as absolute values. Position will be based on the center of the file.
  If set to Content, the content of the job (i.e. a "fit" around the objects) will be used as base, and Width and Height will be relative, e.g. +3mm means 3 mm larger than the fit
  If set to another box, this box will be used as base, and distances will be relative.

- **Width**

  The width (for Absolute) or change in width (for other References) for the new box.

- **Height**

  The height (for Absolute) or change in height (for other) for the new box.

- **Alignment**

  Defines how to align the new box. There are 9 possibilities

- **Horizontal / Vertical Offset**

  The offset to be used for the new box.

10.2.7 Layers settings

- **Rename Layers**

  Use this parameter to rename layers. You can use a wildcard to replace part of the layer name.

  You can also merge layers by renaming a layer to an existing layer's name, or by renaming several layers to the same name.

Note: The layers to merge have to be directly on top of each other in the file.

- **Invisible Layers**

  This option allows to define how to handle invisible layers. You can leave them "as is", remove them or set them to "visible".

- **Non-Printable Layers**

  This option allows to define how to handle non-printable layers. You can leave them "as is", remove them or set them to "printable".

- **Layers to Remove**

  Enter the name of the layers you want to remove from your file. You can use a wildcard to replace part of the layer name.

- **Layers to Exclude from Removal**

  When using a wildcard to remove layers, use this parameter to keep certain layers, even if they match the name entered in "Remove Layers".

10.3. Split Pages

The Split Pages activity converts a multipage PDF file into single page PDF files.

Splitting a Multipage document into separate PDF files can be useful to offer better balancing in further processing of the pages. If e.g. the pages need to be trapped and proofed, a Multipage document

will first be trapped completely, before it starts processing and outputting. If the file is split up into its pages, the first page may start to output while other pages are still being trapped.

In order to continue working on all separate files after splitting, the Split Pages activity should be followed by a "Select File" activity, resulting in a workflow branch for every page.

10.3.1 Page Labels

The Page Labels in the original Multipage PDF file (as defined in the PDF, which might differ from sequential page numbering) can be used in the File Naming Template in the Split Pages activity, i.e. included in the name of the single page PDF file.

After opening the single page file (i.e. after the "Select File" activity) the Page Label will not be available in the File Naming Template.

If the original Page Label needs to be used in the File Naming Template after the Select File activity, it is necessary to add a "Select Page" activity in front of the "Select File" activity. Since the files are single page PDF files, the Select Page activity will not actually do anything, but it will make the Page Label available in the File Naming template of consecutive activities.

10.3.2 Select Pages

The Split Pages activity picks up info from a Select Page activity. A Select page activity followed by a Split Pages activity will create a different PDF file for the selected page: each split page activity will have a single output file for further processing. The Select Page activity will visibly split the workflow, allowing to rerun a single page.

10.3.3 Generate RunList

The Generate RunList allows to define a RunList while splitting the pages. This RunList can be used in the Join Pages activity (see 10.4. Join Pages on page 376). However, if a Split Pages is followed by a Join Pages in the same workflow (with page editing activities in between), it is not necessary to use a RunList.

The RunList can be edited in the RunList Editor (see Appendix 5 : Runlist Editor on page 468), so in that case it can be useful to create a RunList in the Split Pages activity.

10.4. Join Pages

The Join Pages activity combines individual PDF files into one multipage PDF file.

This can be done based on the input files (i.e. PDF files connected to the Join Pages activity using File Dependencies) or using a Run-List. A RunList contains the filenames of the files to be joined, their joining order and their original location. RunLists can be generated in the Split Pages activity (see 10.3. Split Pages on page 375, and can be edited (or generated from scratch) in the RunList Editor. See Appendix 5 : Runlist Editor on page 468.

If no RunList is used, the order of the File Dependencies define the order of the pages.

10.4.1 Save Optimized

Switch this parameter on to optimize the multipage PDF file when you save it.

An optimized file is smaller, because equivalent objects (e.g. identical images) are only saved once.

For example, if several pages to be joined contain the same image, the image will be saved once, and the other pages will contain references to that image, instead of the image itself. This doesn't change the file appearance but reduces the file size.

Note:	It may take longer to save the file when using this parameter.

10.4.2 Files

This parameter defines where the activity collects the files to be joined from.

- Given As Input: No RunList is used. The input files of the activity (using File Dependencies) will be joined.

- At Original Location: the activity collects the files to be joined from the location defined in the RunList.

- At Custom Location: the activity collects the files to be joined from the defined folder. The file names are taken from the Run-List.

10.4.3 Wildcard Replacement Pattern

If you created your RunList manually using the RunList Editor, you may have wildcards (*) in the filenames of the PDFs to be joined.

For example, the filenames in your RunList may look like this: "*_01.pdf", "*_02.pdf", etc.

With the Wildcard Replacement Pattern parameter, you can define the part of the filename matching the *.

For example, if the names of the files to be joined are "John_MagOct_01.pdf", "John_MagOct_02.pdf"... you would define your Wildcard Replacement Pattern so that "*" stands for "John_MagOct", where "John" is the Job Owner, "_" is the Fixed Text and "MagOct" is the Job Name.

Note: In the Wildcard Replacement Pattern, the input file name refers to the RunList file name.

The Wildcard Replacement Pattern is based on the Naming Template (for more information see 3.6. File Naming Template on page 132).

10.5. PitStop

This activity uses Enfocus PitStop library to detect problems in PDF files, and/or correct problems in the PDF files. This is defined using Profiles and Actions. These Profiles and Actions are defined in Acrobat using PitStop. For more information on PitStop, please refer to the PitStop documentation.

PDF Profiles can be edited in the PDF Profile Control Panel, which can be found in the Server menu. Make sure that the path to the PDF Profiles is properly defined in the Preferences.
The PitStop activity does not require the PitStop plugin to run.

10.5.1 Report & Action Lists

- **Action Lists**

  Location of the Enfocus Action List files (.eal) that have to be executed on the file. If this field is left blank, no Actions will be performed.

  Multiple Action Lists can be set using the + button. The Action Lists will be executed in the order they are set in the list.

  The + button opens a browse dialog, allowing to select the folder. The minus button allows to remove a selected action list.

  Action Lists will be executed before running the PDF Profile.

- **PitStop Profile**

  Location of the PitStop Profile that has to be used to check the file. If this field is left blank, no profile will be used. The Browse button opens a browse dialog, allowing to select the profile.

- **Generate Report**

  Defines if a PitStop Report needs to be created.

- **Units**

  Defines the units to be used for the Box information in the report.

- **Report Template**

  The Report Name is defined using the File Name Template, using the "Edit Template" button.

- **Enable Color Management**

  The PitStop activity contains an option to "Enable Color Management". When it's on, the defined profiles are used when the PitStop Profile or an Action List causes color conversion (e.g. RGB to CMYK). when it's off, default color conversion is used.

  If Color Management is defined in the PDF Profile itself, the Color Management settings will be overruled.

- **Default CMYK, RGB, gray, LAB Profile**

  Default Profiles will be used in case PitStop has to perform color conversions without having the calibrated color information. E.g. when converting an object in DeviceRGB to DeviceCMYK. Since DeviceRGB has no profile, PitStop will use the default profiles.

10.5.2 Certify

- **Certified Status**

  If the Certified Status is set to "Leave unchanged", the PDF will remain uncertified or certified as it was before the activity.

  If set to Make Certified, the activity will certify the PDF file to a PitStop profile. For more information on certified PDF files, see http://www.certifiedPDF.net.

  If set to Make Uncertified, the file will no longer be certified.

- **User info & Session Comment**

  In case the file is repreflighted, the user info and session comment entered here will be used.

10.6. PDF Decorate

PDF Decorate allows to add marks, as defined in a Decorate file. These mark files can be defined using the Decorate Editor. Such include registration, slug lines, regmarks, cuts, bleed etc. You can also add custom text to a job using the Decorate activity.

For more info on Marks files, see Appendix 4 : Decorate Editor on page 454.

10.6.1 PDF Decorate Settings

- **Output File**

  The Output File button opens the File Naming Template dialog, allowing to define the name and location for the output file.

- **Incremental Save**

  Defines whether to save the file optimized with all changes, or to save it Incremental, adding all changes to the existing file.

- **Marks File**

  This refers to the filename of the Decorate file to be used. This file can be selected by using the Browse button. By clicking the "..." button, a browser window will open to select the Decorate File. The cross button allows to you remove a previously defined file choice.

- **Marks File For Even Pages**

  If a Marks File For Even Pages is selected, the "normal" file will be used for the odd pages, and the Marks File For Even Pages will be used for the even pages. If no Marks File For Even Pages is defined, the File defined above will be used for all pages.

- **Ink Collection**

  By entering an Ink Collection Name, you define what Ink Collection Nexus should use. This can be set to check for technical inks, these inks will then be ignored when mapping the colors to marks. See the Librarian documentation for more info on Ink Collections.

- **Optimize Marks**

  Optimize Marks is an option that allows to define if a single page should contain only marks for the separations used on that page (if the option is switched on), or if the marks on a page should refer to all the separations used in the entire job.

- **Check for Extra Separations**

  The Check For Extra Separations option will cause a job to fail if the marks contain separations that are not used in the actual job.

- **Custom Text**

  There are three fields available for custom text in the Decorate Parameters. The text entered here will be added to the slug line. The text entered may include operator details which can be viewed later on in the job, improving job accountability. The fields use the File Naming Pattern: see 3.6. File Naming Template on page 132.

- **Slug line Font Name**

  You can specify the exact font to be used in the generation of a slug line.

- **Slug line Font Name**

  You can specify the exact font size to be used in the generation of a slug line.

- **Unit for Distance**

  Allows to define the units used for distances. This unit will also be used if Workflow parameters are used in the slug line (e.g. trapping distance).

10.6.2 Process Color Mode

The Process Color Mode allows you to define how spot colors and CMYK should be prioritized in the job.

- **All Inks Equal**

  No distinction is made between Spot Colors and Process colors. The separations are ordered as found in the actual file.

- **First CMYK Subset**

  The Process Colors are always first, and in the order C, M, Y, K, if present in the job.

- **First CMYK**

  The Process Colors are always first, in the order C, M, Y, K, regardless of whether they are used in the job or not. For example, if Magenta is not used in the file to be decorated, this will result in an empty slot.

- **Darkest First**

  Colors will be arranged in order of darkest to lightest, regardless of type.

- **Lightest First**

  Colors will be arranged in order of lightest to darkest, regardless of type.

10.6.3 Using text & workflow parameters in Slug Lines

You can use text and workflow parameters in the slug lines, either defined in the Decomark file (see Appendix 4 : Decorate Editor on page 454) or using the Custom Text.

Note:

Keep in mind that if you retry a job after changing workflow parameters, the workflow parameters in the slug lines will be updated only if the Decorate activity is retried as well.

10.7. JDF to PDF

JDF is a file containing imposition info on several PDF files. The activity collects the PDF files and combine them into one PDF file.

10.7.1 Update Page Boxes

If Update Page Boxes is on, the page boxes of the resulting PDF will be based on the page boxes of the incoming files and information in the JDF

10.7.2 Always Use JDF Root Node

If this option is on, the root node of the JDF file will be used, even when the type of this node is different. Nexus uses the Imposition Resource found in the JDF file. This Imposition Resource can only be found if the type of the node in the JDF file is correct. If it's not correct (e.g. for JDF files coming from older systems) the Imposition Resource will not be found. Switching this option on will force Nexus to use the Root Node, regardless of the type of this Node.

10.7.3 Apply Color Mapping

In Preps, you have the possibility to define Color Mapping, e.g. allowing to remap a blue spot color to cyan, or to define CMYK values for spot colors. If the Apply Color Mapping option is on, this mapping will be used when resolving the JDF. If the option is off, any color mapping defined in the JDF will be ignored.

10.7.4 Set Web Growth Parameters

If the Set Web Growth Parameters option is on, Web growth parameters as defined in the JDF will be used in the Rasterize Separations activity (see below). If the option is off, any web growth parameters defined in the JDF will be ignored.

10.7.5 Define Plate Size

If the Define Plate Size option is on, the plate size found in the JDF file will be disregarded, using the Plate Size, Plate Gripper Location and Space as defined underneath.

10.7.6 TrimBox Align Mode

In the JDF file, the placed files are defined by a MediaBox (in absolute values) and a TrimBox (including transformation information). If the TrimBox in the JDF file does not match the TrimBox defined in the PDF, the TrimBox Align Mode defines how to position the PDF files:

- **Center**
  The Center of the placed PDF file will be placed on the center of the TrimBox defined in the JDF. This can be used for most common JDF files.

- **No Alignment**
  The bottom left corner of the PDF is placed on the lower left corner of the TrimBox. No alignment is done.

- **Ignore TrimBox information**
  The PDF is placed using the MediaBox defined in the JDF file. This can be used for JDFs that do not contain correct TrimBox information.

10.7.7 PDF Location

The PDF Location indicates where Nexus should look for the individual PDF files. When set to "Aside original JDF file", Nexus will look in the same folder as where the original JDF file was (before bringing it into Nexus). When set to "In Job Folder", Nexus will search the Job Folder. When set to "Original Location", Nexus will search at the location as defined in the JDF file.

10.7.8 Folder Mapping

The JDF to PDF activity now contains Folder Mapping, which will be used if the PDF Location is set to "Original Location".

Every path in the JDF is compared against the list of From's in the list, from the left to the right. Therefore it is important to copy the full path from the JDF when setting up folder mappings, starting with file://. In case of a match, the matching part is replaced with the corresponding To field.

- **Example:**
  In JDF file:

  "file://192.168.0.140/Macintosh_HD/TestFiles/file.PDF"

  The PDF can be accessed at:

  "file:///Nexus_FileServer/TestFiles/file.PDF"

  Configuration:

  | From: | "file://192.168.0.140/Macintosh_HD/TestFiles/" |
  | To: | "file:///Nexus_FileServer/TestFiles/" |

10.7.9 Page Label

In the JDF to PDF activity, a File Naming Template has been added to define the Page Labels.In this File Naming Template some additional parameters are available.

- **Signature Name**
  the Signature Name from the JDF

- **Sheet Name**
  the Sheet Name from the JDF.

- **Surface**
  the Surface (Front or Back)

- **Surface Index**
  the Signature's Surface Index. For example the Surface Index of the 1st Signature is "1".

- **Surface Code**
  the Surface code can be A (for Front) or B (for back).

For example, to give the format "Front:1" to your Page Labels, use the naming elements Surface ("Front"), Fixed Text =":" and Surface Index ("1" for the 1st Page Label).

Default this page label is set on: <Surface>:<SurfaceIndex><SurfaceCode> (e.g.: Front:1A)

10.8. Separate

This activity converts a composite PDF file into a separated, multipage grayscale PDF file.

10.8.1 Page Sorting

Defines the sequence of pages when separating a multipage file. If set to Separations First, the file will start with all separations of the first page, then all separations of the second, etc. If set to Pages First, the file will start with all pages in the first separation, then all pages in the second separation, etc.

10.8.2 Skip Empty Separations

Defines whether empty separations should be included or skipped.

10.8.3 Separation Color

Separations can be set to grayscale (Normal), inverted, or colored grayscales.

10.8.4 Include Separations

The Include Separations allows to define names of separations that have to be included. If separation names are entered in the Include Separation fields, those separations will be included, and all others will be excluded, regardless of the setting of the Exclude Separation fields (see below). The Include Separation field can take the * character. This will be handled as a wildcard, to match any separation. Multiple separations can be defined by clicking the "+" button. Each input line can only contain one separation name. Include Separations is case sensitive.

10.8.5 Exclude Separations

The Exclude Separations allows to define names of separations that have to be excluded from output. Separations in the Exclude field will not be in the output, unless they are found in the Include Separations field. The Exclude field can take a wildcard. Multiple separations can be defined by clicking the "+" button. Each input line can only contain one separation. The list is case sensitive.

10.8.6 Default CMYK, RGB, Gray Profile

Default Profiles will be used in case Nexus has to perform color conversions without having the calibrated color information. E.g. when converting an object in DeviceRGB to DeviceCMYK.

10.8.7 Output Color Profile

Defines the output profile to be used when separating the PDF file.

10.8.8 Fail When Converting Color Spaces

When enabled, the activity will fail in cases where color spaces can't be converted 100% accurately in order to create the output, e.g. in blend modes that are specified in CalibratedRGB when generating CMYK Output. When the colorspace can be converted 100% accurately, the activity will not fail.

10.8.9 Generate Slugline

When enabled, a line of text will be added to the bottom of every separation, indicating job name, page and separation name.

10.8.10 Special Ink Handling

This parameter allows to set how "special inks" as defined in the Ink Collection (see 1.8.2 Librarian on page 32) should be handled. "Disabled" means that Special Inks will not be treated differently. There is also the possibility to ignore Technical Inks, or to ignore Technical and Varnish Inks.

10.8.11 Ink Collection

This sets the name of the Collection to be used. For more information on Collections, see 1.8.2 Librarian on page 32. When left empty, the Default Collection as defined in Librarian will be used.

10.9. PDF Flatten

The PDF Flatten activity allows to replace objects using some specific features (like transparencies) by regular objects giving the same result on print, but without those features (flattening).

10.9.1 New Workflow

When creating a new Workflow using the predefined workflows (Basic, Autotrap,...), an option will be available to use the PDF Flattener.

When using this option, the PDF Flatten activity will be used underneath the Interpret PS/PDF and Merge OPPO activity.
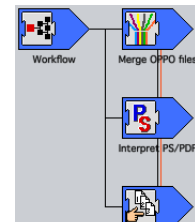
10.9.2 PDF Version

Allows to make the choice between PDF 1.3 or 1.4. When selecting PDF 1.3, all 1.4 features will be flattened. The Version also influences the result of Delete Original settings. See below for more details.

10.9.3 Blends, Overprints, Layers

- **Flatten Non-Separable Blend Modes**

    If the PDF output version is PDF 1.3, all blend modes will be flattened. For all other PDF versions, you can specify whether you want non-separable blend modes to be flattened.

    A blend is a mathematical function calculated between two objects, a source object and a backdrop object. Flattening blends means that you will calculate the function between those two ob-

jects. A separable blend function is a blend that won't affect other seps (except for the blended one) after flattening. This means that a separable blend function is recalculated for each separation and therefore will only affect this separation. E.g. a separable blend, containing CMYK: the cyan of the blend will only affect the cyan of the backdrop, the magenta will only be mixed with the magenta of the backdrop, etc.

A non separable blend function calculates the entire color in one pass, which means that for calculating the blend, all seps of the objects are taken into account (and also converted into HSL). So a change in 1 separation will therefore affect all other colors.

A non-separable blend is NOT calculated for spot colors. When this occurs, the spot separations are treated as normal knockout separations. Acrobat previews these blends correctly, but Illustrator doesn't. Non-separable blends are Color, Luminosity, Saturation and Hue.

- **Split DeviceN**

  Allows to decide if DeviceN is allowed or not. Device N defines colorspaces containing more than 1 color, of which at least 1 is a spot color (e.g. CMYK + spot color, or 2 spot colors) If DeviceN is set to split, objects using DeviceN will be separated into 2 separate objects. If Split DeviceN is on, Resolve Overprint will always be considered off.

- **Resolve Overprints**

  This option defines whether the Overprint comment should be used. As some PDF viewers do not preview overprints, it might be advisable to turn Resolve Overprint on in order to get correct preview. Also some older RIPs can have difficulties calculating overprints on transparent objects. If Split DeviceN is switched on, Resolve Overprint is always disabled.

- **Convert Shadings**

  Switch this parameter on to convert shadings into images, using the specified flattening resolution.

- **Convert PS Blends**

  PostScript-style blends (or "PS blends") are blends made of a succession of paths with progressive variations of size/location and color between them.

  Switch this parameter on to convert PostScript-style blends into images, using the specified flattening resolution.

  This makes the file simpler and allows faster processing.

- **Remove Non-Printable Layers**

  From PDF 1.5, you can mark layers as "Non Printing". When flattening to earlier PDF versions, use this parameter to define how to handle Non Printing layers.

  Remove Non-Printable Layers on: this removes the Non Printing layers when flattening the file.

  Remove Non-Printable Layers off: this keeps the Non Printing layers, but they become printable (only when flattening to an earlier PDF version than PDF 1.5).

10.9.4 Inks

- **Remove Technical And Varnish Inks**

  This removes Technical and Varnish inks from the file when flattening.

- **Knockout Opaque Inks**

  Switch this parameter on to make objects using opaque inks knockout.

- **Ink Collection**

  By defining an Ink Collection, you set Nexus to use an Ink Collection. Ink Collections are used to convert inks.

  For an elaborate explanation on the use of Collections, we refer to the Librarian documentation.

- **Cut Out White Linework**

  Switch this parameter on to convert white lineart objects into clipping paths. This can be useful when using versioning.

- **Cut Out White Text**

  Switch this parameter on to convert white text objects into clipping paths. This can be useful when using versioning.

10.9.5 Flattening Resolution

In order to flatten a file, Nexus may need to generate images. These images will be generated at the resolution entered here.

10.9.6 Completely Resample Images

If parts of an image require flattening (e.g. a blend partially over an image), these parts will be in a new image, at the resolution defined in the Flattening Resolution. As only a part of the image is resampled, there might be a change of resolution, and pixels may not align anymore, causing a pixel shift and a visual line.

If the option is switched on, a contone that needs to be resampled partially, will get resampled completely to the same resolution and grid in order to avoid pixel shifts.

10.9.7 Delete All Original Objects

If switched off, this will keep the original objects underneath the flattened objects. However, if the original object is a PDF 1.4 object and the flatten style is PDF 1.3, the original object won't be kept anyhow. Keeping Original Objects can be useful for editing. If, e.g. you have some text and vector objects on top of a vector background, the background is cut into pieces after flattening. If Delete Originals is off, the complete background object will be kept in the file, which could make the editing of the file easier.

10.9.8 Save Incremental

The option defines whether to save the file optimized with all changes, or to save it Incremental, adding all changes to the existing file.

Note:

Unlike other PDF Workflow activities, the PDF Flatten activity will NOT error on files other than PDF files. These files will be passed on directly to the next activity.

10.10. Equinox PDF to PDF

The Equinox PDF to PDF activity allows to do Equinox conversion on a PDF file. For more information on Equinox conversion, we refer to the Equinox documentation.

10.11. Generate OPI

The OPI activity will create a lowres PDF of the complete page. The content of the PDF file is in the lowres PDF converted to an image. The output file will respect all page box information of the original file. The resolution and the output file name of the OPI image can be defined. You can define Antialiasing, to improve the quality of eg. small text.

A typical setup would consist of two parts:

- Page workflow with Generate OPI:
  First prepare the single pages and generate a low res

- Resolve OPI and output to RIP:
  Make an Imposition with the low res files (e.g. in Dynastrip, Preps, ...)
  Resolve the OPI and send it to a Rasterize activity
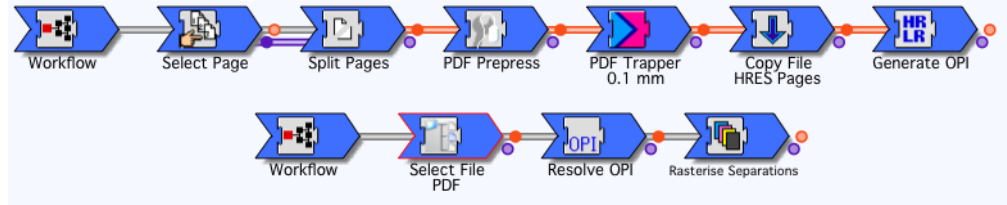
10.12. Resolve OPI

The Resolve OPI activity allows changing the referenced external documents links. The activity can be used to make the external documents internal, or to update and/or reroute all references.

10.12.1 Output

- **Incremental Save**

  Defines to save the file optimized with all changes, or to save it Incremental, adding all changes to the existing file.

10.12.2 Options

- **Update Links Mode**

  If this is set to Only Update Links, only the links will be updated, based on settings of Root Folder, extension and folder remapping.

  If set to "Update images, keep Links", the images will be embedded (resulting in "fat" PDF), but the OPI links will be kept.

  if set to "Update images, remove Links", the images will be embedded (resulting in "fat" PDF), and the OPI links will be removed.

- **Fail If No Links Found**

  If this option is on, files without any OPI comments will fail.

- **Placed PDF Page Box**

  This option allows to select the page box that will be used in OPI resolving. By default, this is set to the Cropbox. In some cases (e.g. PDF files from InDesign), the OPI comments are in a different Page Box.

10.12.3 Folders

- **Root Folders**

  Defines where Nexus has to search for the referenced files. The defined Root Folder(s) and all underlying folders will be searched. The + button opens a browse dialog, allowing to select the Root Folder. The - button allows to remove a selected path. Multiple Root Folders can be defined.

- **Exclude Folders**

  When searching through the Root Folder, folders with a name as entered in Exclude folder(s) will not be searched.

  This can be used if all images can be found on the same volume, with the possibility to exclude all folders containing lores files.

10.12.4 Mappings

- **Map Extensions**

  The Map Extensions can be used to replace the extension of the linked file. This can for example be used to place image.HR instead of image.LR described in the link.

  The "From" field contains the original extension. If left blank, the To will be applied to all linked files.

  The "To" field is a comma separated list of the extension to be used as replacement for the supplied extension. If multiple extensions are entered, Nexus will search for a file matching one of them. In this list, the back slash can be used to preserve a character. This means, if you want to enter a comma in an extension, this comma would normally be interpreted as separator. By putting a back slash in front of it, the comma will be seen as regular character instead of separator.

- **Absolute Folders**

  Absolute Folder Mapping allows to replace a part of the path in the files to be found. The "From" field should contain the first part of the original path, to where it should be replaced. It has to be entered manually. The "To" field can be defined using the Browse button, which opens a browser dialog, allowing to select the "To" Folder. The Cross button will remove a path selected earlier.

  The File System Path Format allows to set what Operating System the OPI server is using, in order to use the correct path structure and syntax.

  Example:
  From: file:///CD_Images/Images/
  To: file:///HD/Images/Customers/

This means a file that was on the CD "CD_Images" in the folder "Images" will now be searched on the HD, in the folder Images/ Customers.

If the OPI link is:

CD_Images::Images:Customer1:Image16.jpg

Nexus will search for:

HD::Images:Customers:Customer1:Image16.jpg

- **Relative Folders**

  Relative Folder Mapping allows to make a Relative change to the path: the entered string will be added to the path of the OPI link, in between the path and the filename. It is possible to go a level up by entering "../"

  Example:

  if the original path is HD::Users:Operator1:Lowres:Image.tif

  and Relative Folder Mapping is: .. /Hires/

  the resulting path will be HD::Users:Operator1:Hires:Image.tif

10.12.5 Distiller

If the (remapped) OPI refers to a PostScript file, this file will be distilled before entering it in the PDF file. The settings to be made for the Distiller are the Distiller hot folder and time out.

10.13. Preview Generator

The Preview Generator activity has the same functionality as the Preview Generator stand alone application. It allows adding a Separated Preview to a PDF file. This separated preview allows to preview a placed PDF file into its separations. This separated preview can be included by one of the other applications from EskoArtwork (Nexus, ArtPro,...) or by the Preview Generator, and can only be retrieved by one of EskoArtwork's applications.

10.13.1 Resolution

This sets the resolution of the preview to be generated. It can be set between 50 and 300 dpi. The default resolution is 72dpi. The Preview is calculated based on the Media Box.

10.13.2 Use Anti Aliasing

If this option is enabled, Anti Aliasing will be applied onto the preview, resulting in a smoother output.

10.13.3 Add Preview To

The Add Preview to setting, allows to define whether a preview should be added for every page in the PDF document, for the First page only, or if the preview should be added to the Resource.

When set to First Page Only, only a preview for the first page is added or changed. The preview for all other pages remain empty, or will be showing the thumbnail when available.

When adding a preview to the Resources instead of embed it in the PDF file, the actual file doesn't change. As the Resource fork of a file can only contain one preview, it will be the preview of the first page. If the Preview has to be added to the resources, it is possible that the Preview Generator has to downsample the preview below the requested resolution, because of the size limitation of the resource fork.

10.13.4 If the PDF is Certified

If the PDF is Certified, embedding a preview in the PDF file would affect the certified status. The actual Certified mode is not removed, but PitStop will generate a warning stating that the Certified PDF has been changed outside the Certified PDF Workflow.

Adding a preview to the resources doesn't affect the certified status. Therefor, the "Add Preview To" setting can be overwritten for Certified PDF files. If set to „Resource", the preview of the first page will be added to the resource fork. When set to „Use Default", Certified PDF files will be treated the same as other PDF files, as defined in „Add Preview To".|

10.13.5 If Preview available

This option defines if the file already contains a preview, if it should be overwritten or not. An RGB preview will never be replaced, nor will it be taken into account for the "If Preview available" option.

If the preview is set to be added to the resources, only the resources are checked for a possible preview, and if the preview is to be added to the file, only the file is checked.

10.14. PDF Trapper

The PDF trapper adds trapping to the input PDF file.

10.14.1 General settings

- **Create Traps**
  Choose how to create the traps in the artwork:
  "Blended": this creates traps using the "darken" blend mode (the trap only contains the color that gets spread into the other).
  "Opaque": this creates opaque traps, with all the necessary colors contained in the traps.

- **Allow DeviceN in Created Traps**

  This parameter is switched on by default. It creates certain traps (e.g. between 2 spot color gradations) in the DeviceN color space. Switch it off if you don't want to create traps in the DeviceN color space.

- **Always Create Trap Layer**

  This parameter is switched on by default. It creates a new layer for traps. If the original file contains no layer, it also creates a content layer.

- **Save Incremental**

  Defines if the trapped file will be an optimized re-save or saved incrementally.

- **Ink Collection**

  Select the Librarian Collection that contains a definition of the Technical Ink(s) and Varnish Ink(s) your job is using.

  If you don't select any collection, Nexus will look in the default Librarian collection.

10.14.2 Trap Distance

- **Trap Distance**

  Enter the trap width in the unit you defined in the Preferences. The default width is 0.1 mm.

- **Black Threshold**

  This parameter defines how much black ink an object should contain to be considered black, and use a different ("Black") trapping distance. Enter a percentage between 70 and 100 (the default value is 85%).

- **Into Black Inks**

  Switch this option on to define a different trapping distance for black objects. Black objects are objects with a percentage of black ink as defined in the "Black Threshold" parameter. Leave it off to use the general trapping distance you set in the "Trap Distance" parameter.

- **Into Spot Inks**

  Switch this option on to define a different trapping distance for spot color objects. Leave it off to use the general trapping distance you set in the "Trap Distance" parameter.

- **Into Images**

  Switch this parameter on to use a different trapping distance for image objects. Leave it off to use the general trapping distance you set in the "Trap Distance" parameter.

- **Center Trap Accuracy**

  This parameter allows you to define the accuracy needed to create center traps, ranging from "Very Low" to "Very High".

  A higher accuracy calculates the butting of two traps to the center more precisely. A lower accuracy improves performance.

10.14.3 Direction

- **Single Ink Difference**

  "Ink Difference" parameters measure the difference between 2 inks (i.e. between the percentages of different separations in each ink), to determine if they should be trapped or not.

  The inks will be trapped only if the ink difference between them is equal to or above the ink difference percentages you specify for light and dark inks (see below), and the percentage calculated for mid tone inks. These parameters prevent the activity from trapping gradations with themselves.

  The "Single Ink Difference" option determines how to check the ink difference.

  Switch this parameter on to trap objects when there is a significant ink difference in 1 direction and any difference in the other direction.
  E.g.: 1st ink: C 5% M 10% Y 50% K 15% (+11% K)
  2nd ink: C 5% M 10% Y 52% K 4% (+2% Y)

  Leave it off to trap objects only when there is a significant ink difference in both directions.
  E.g.: 1st ink: C 5% M 10% Y 50% K 15% (+11% K)
  2nd ink: C 5% M 10% Y 85% K 4% (+35% Y)

- **Light Ink Difference**

  Light inks are inks with a luminance value above 70%.

  This parameter sets the minimum difference necessary between 2 light inks to trap them with each other.

  The default minimum difference for light inks is 30%.

- **Dark Ink Difference**

  Dark inks are inks with a luminance value below 30%.

  This parameter sets the minimum difference necessary between 2 dark inks to trap them with each other.

  The default minimum difference for dark inks is 10%.

  Note: For inks in between light and dark (i.e. with a luminance value between 30 and 70%), the minimum ink difference for trapping is calculated proportionally.

  E.g.: if the minimum ink difference for your light ink (that has a 75% luminance) is set to 30%, and the minimum ink difference

for your dark ink (that has a 25% luminance) is set to 10%, then the minimum ink difference for your mid tone ink (that has a 50% luminance) will be 20%.

- **Always Trap Toward Images**

  Switch this option on to always trap flat colors and shadings towards images.

- **Always Trap From Images**

  Switch this option on to always trap images towards flat colors and shadings.

- **Image To Image**

  Switch this option on if you want to create traps between images.

- **Keep Away Mode**

  Use the Keep Away Mode to create "keep aways" underneath rich dark paints (such as rich black, e.g. 100%K + 50% C).

  For a color to be considered a rich dark paint, 2 conditions must be satisfied: the color of the darkest separation must be dark enough (set by the Keep Away Ink Darkness), and support colors must be present.

- *Keep Away Mode: No Keep Away*

  Obviously, if set to No Keep Away, no special actions are taken.

- *Keep Away Mode: Keep Away*

  "Keep Away" traps will be made on pure rich paints only, i.e. if the paint has more than 99% ink coverage in the darkest separation (matching the Keep Away Ink Darkness). The normal trap distance is used for the keep aways.

- *Keep Away Mode: Keep Away With Sharpening*

  "Keep Away" traps will be made on all rich paints, if

  - the darkest separation matches the Keep Away Ink Darkness
  - the percentage in the dark separation exceeds the Minimum Dark Ink Coverage value
  - the total ink coverage exceeds the Minimum Total Ink coverage value.

  The normal trap distance is used for the keep aways. An additional "Sharpen" trap is added around the keep away, to purify the impure rich paint.

- **Keep Away Ink Darkness**

  This parameter specifies a darkness threshold for the dark separation for Rich Black and Rich Spot Colors objects. If the dark separation is as dark or darker than this threshold, the activity will

create keep aways on the underlying colors. If this treshold is set to 100%, keep aways are only performed on black paints but never on non-black spot paints.

The default threshold is 85%.

- **Handle Small Objects As One**

  This parameter defines how to trap small objects of the same color, that are close to each other and on the same background.

  Switch it on to always trap all these objects in the same direction. Leave it off to perform regular trapping on them.

- **Maximum Size For Small Objects**

  This parameter is available when you switch "Handle Small Objects As One" on.

  It determines the maximum size an object can have in either dimension to be treated as a "small object" by the "Handle Small Objects As One" parameter.

  Enter the size in a percentage of the trapping distance. For example, the default size of 2500% means "25 times the trapping distance". The size used is typically over 10 times the trapping distance. The distance between the objects must be smaller than the Maximum Size for them to be trapped "As One".

- **Use Trapping Pairs**

  Switch this parameter on if you want to use Trapping Pairs from Librarian. For more information on Librarian, see the Librarian documentation.

- **Trapping Pairs Collection**

  This parameter is available when you switch "Use Trapping Pairs" on. Select the Librarian Collection that contains the Trapping Pairs you want to use.

10.14.4 Input

- **Detect Small Gaps**

  Switch this parameter on to treat "nearly touching" objects as if they were touching.

- **Vectorise Opacity Masks**

  Switch this parameter on to optimize trapping for opacity masks. When an image is partly transparent on top of a background, this will trap the inside of the image with the background where needed, not only the border of the image.

  Note: Nexus will not trap the completely transparent parts of the image.

- **Ignore Image Masks**

  Switch this parameter on to ignore image masks when trapping.

Note: The Ignore Image Masks option only applies to stencil masks. Stencil masks are generated for example when you place a colorized 1-bit image in Illustrator. They can be very complex and slow to trap.

- **Ignore Black Overprinting Text**

  Switch this parameter on to ignore black text in overprint when trapping.

- **Ignore Non-Printable Layers**

  Switch this parameter on to ignore layers set to "Non-Printable" when trapping.

  If you switch it off Nexus will trap non-printable layers.

- **Ignore Technical Inks**

  Switch this parameter on to ignore objects in Technical Ink when trapping. Technical and Varnish inks have to be defined in the defined ink collection.

  If you switch it off Nexus will trap objects in Technical Ink.

- **Ignore Varnish Inks**

  Switch this parameter on to ignore objects in Varnish Ink when trapping. Technical and Varnish inks have to be defined in the defined ink collection.

  If you switch it off Nexus will trap objects in Varnish Ink.

10.14.5 Special Effects

- **Preserve Consistent Filling**

  When creating traps, a very small overlap is created, to avoid gaps between the trap and the original object. This is important when trapping text, as the Trapper needs to vectorize the text internaly to calculate the traps, so very small rounding errors may occur. Therefore this overlap is created (1/12000 inch)

  However, this may cause trapped objects to become visually smaller after RIPping, mainly for small text. To avoid this, the Preserve Consistent Filling option can be switched on. It will create a new object on top of the overlap, containing the paint of the underlying color. This option should only be switched on if the described problem occurs.

- **Add White Frame (Shirofuchi)**

  Switch this parameter on if you want to add a "Shirofuchi" outline to your text. This outline is made of the flat paint or combination of flat paints under the text.

- **Shirofuchi Maximum Size**

  Enter the maximum size a Shirofuchi object can have in either dimension. Enter the size in multiples of the trapping distance. For example, the default size of 25 means "25 times the trapping distance". The size used is typically over 10 times the trapping distance.

- **Shirofuchi Distance**

  Enter the maximum width of the Shirofuchi outline around the text.

- **Keep Away Opaque White Inks**

  Switch this on to create keep aways on opaque white inks.

- **Add an Opaque White Underprint**

  Switch this parameter on to add an opaque white underprint (with keep aways) to your whole file.

- **White Ink Name**

  Enter the name of the opaque white separation.

- **Underprint Choke Distance**

  Defines the distance for the keep aways underneath the opaque white.

- **Add Rich Black**

  Switch this on to convert black objects into Rich Black (adding Cyan, Magenta or Yellow).

- **Add % Cyan, Magenta, Yellow**

  Enter the percentage of Cyan, Magenta and Yellow you want to add to black to make Rich Black.

  Note:If the resulting Rich Black is equal to or over the darkness threshold (see Keep Away Ink Darkness on page 395), keep aways will be applied to the Cyan, Magenta or Yellow object.

Note: For performance reasons, the PDF Trapper will cache ink properties and trapping pairs from Librarian. Because of this, changes made to trapping pairs and ink properties in Librarian will not be taken in account automatically. For these changes to have effect, the PDF Trapper module needs to be restarted.

10.15. PDF PowerTrapper

PDF PowerTrapper works in the same way as Nexus Processor PowerTrapper. For all options, see 8.39. PowerTrapper on page 269.

The only difference is that in the PDF PowerTrapper you don't have the option to apply trapping only on the selection, as there is no selection possible in a PDF file.

10.16. Rasterize Activities

The activities in the PDF RIP are the same as their equivalents in the Nexus Basic RIP. Replace "Rasterize" with "Assemble" to find the equivalent activities. We refer to these sections for a detailed explanation of these activities.
The biggest difference is of course the fact that the Rasterize activities take PDF files as input files.

10.16.1 More Options The settings of the Rasterize activities are the same as their PostScript equivalents. In the "More Options" dialog however, there are some extra settings.

- **Overprint**

  Disable PDF Overprints and Always Overprint Black define the handling of overprints.

- **Fail if missing fonts**

  Fail if Missing fonts set the workflow to fail if the PDF file contains missing fonts.

- **Optional Content Support**

  Optional Content Support is an option that defines how to handle "Optional Content": in PDF 1.5 it is possible to define content of the file to be printable or non printable. If the Optional Content Support option is on, only content defined as "printable" will be used. Otherwise, the settings will be ignored.

10.16.2 Color Management

In order to have Adobe compatible color conversions, using black point compensation, Adobe CMM is supported in the PDF Rip. For this, the Adobe CMM engine already has to be installed on the server. Adobe CMM is the Color Management engine provided by Adobe, and used in all Adobe applications. It can be obtained from the Adobe Website.

10.16.3 Screening

The Screening popup in the Rasterize Separations dialog is the same as for the Assembler. Of course, the option "From PPD" is not available.

10.16.4 RIP Single Separation

When RIP Single Separation is enabled in the More Options of the Rasterize Separations activity, the PDF Rasterize Separations activity will work in the same way as the Rasterize Separations activity in Nexus Rip: every separation will be rasterized in a separate "activity" in the branch, instead of one activity rasterising all separations.

The main advantage is that in single separation mode the user can retry individual separations the way it was done with Nexus Rip.

Another advantage is that single separation mode allows the user to define Web growth (see 10.16.5 Web Growth Compensation on page 400).

PDF pages are normally composite, so to produce separations individually the RIP has to process the whole page multiple times. This will lower the overall performance of the RIP, but in most cases the first plate will be ready sooner, so it is possible that an overall performance gain is established. The extent of any performance changes will depend on the nature of the PDF file and the workflow.

10.16.5 Web Growth Compensation

Web growth, i.e. the stretching of the substrate (paper) between the different printing stations, caused by the influence of water and ink in combination with the huge tension applied on the web, can cause registration errors and loss of quality. This can be compensated using Web Growth Compensation.

Web Growth Compensation can be applied in the Rasterize Separation activity (after switching "Enable Web Growth" in the More Options), or the parameters can be taken from the JDF (see 10.7. JDF to PDF on page 381)

After switching on "Enable Web Growth", you can enter scaling factors to specify web growth compensation for each separation.

10.16.6 Enable Step and Repeat Optimisation

The PDF RIP has been extended in Nexus 9.1 so that it can recognise when the same PDF is used multiple times in a PDF generated by ArtPro. If it finds such a case, it will rip the PDF once and apply it multiple times, which can greatly improve ripping speed for stepped jobs. A speed optimisation has been done for Nexus 9.5.

• *Limitations:*

Only stepped files that have been generated by ArtPro can be ripped using this improvement

The feature is not available if:

- Antialiasing is switched on in the PDF RIP
- The ouput will be DCS that contains a preview
- The output is a dotproof
- The RIP is set to produce seamless output
- Any other option that causes the 1up data to be scaled, or otherwise changed.

10.16.7 Seamless output

Nexus allows to output seamless screened files with the PDF RIP if Paragon Screening is used (except for Paragon Organic). For seamless output, the Seamless option needs to be turned on in the PDF RIP. The Convert Screened TIFF activity is not needed for seamless output.

The Rasterize Separation's Seamless drop down has 5 options: these flavors have influence on the pad pixels and pad lines of the TIFF that is generated. Generic and CDI output don't pad the output. Lead, Stork and Generic With Output will pad the output to the nearest 32 pixel boundary.

10.17. PressLink

The PressLink activity creates CIP3 files from the input file. You can then send these CIP3 files to an appropriate press control system.

10.17.1 PressLink Parameters

- **Preview Resolution**
  Enter a resolution for the preview included in the CIP3 file (default is 72ppi).

- **Antialias Ratio**
  This applies antialiasing to the preview.
  You can choose "No antialiasing" or an antialiasing factor from 2 to 8 (default is 2).

- **Strip Optional Content**
  This parameter handles PDF 1.5 optional content (e.g. Non-Printing layers).

- "Strip Optional Content" on (default): the activity doesn't output PDF 1.5 optional content.
- "Strip Optional Content" off: the activity keeps PDF 1.5 optional content in the output.

- **Compression**

  Choose whether to compress the preview image included in the CIP3 file ("Packbits") or not ("None").

- **Encoding**

  Choose the encoding to apply to the preview image: Binary, ASCII 85 or ASCII Hex.

- **Orientation**

  Select the orientation to apply to the CIP3 file's pages: Normal, or Rotated over 90, 180 or 270°

- **File Mode**

  Select the number of pages per CIP3 file: Single, Double or Multiple Pages. When outputting a double page or multipage file, you should select how to label the pages (see Side Control below).

- **Side Control**

  This is available if you selected "Double Page" or "Multiple Pages" in File Mode.

  Select how to label your file's pages:

  - "Front": the activity marks all pages as "Front".
  - "Back": the activity marks all pages as "Back".
  - "Alternate": the activity marks odd pages as "Front", and even pages as "Back".

- **Error if No Output**

  Switch this on to fail the job when the file is empty or no output is generated.

- **Output Name, Job Name, Sheet Name**

  With these you can define the name of the output CIP3 file (".ppf"), the name of the job inside the CIP3 file, and the name for the sheets, using the File Naming Template: see3.6. File Naming Template on page 132).

- **Ink Collection**

  Select the Librarian Collection that contains a definition of the Technical Ink(s) and Varnish Ink(s) your job is using.

  If you don't select any collection, Nexus will look in the default Librarian collection.

Chapter 11. Screening & Calibration

11.1. Screening principles

11.1.1 Nexus screening - an introduction

NexusRIP provides the user with a wide variety of available screening technology, ensuring that the RIP may not only be used in the traditional commercial offset environments, but also in the more demanding packaging and label market. Nexus also offers special screening and calibration techniques and settings for flexo printing such as FlexoCal and Platecell Patterning.

As well as conventional PostScript Screening, Nexus offers Esko screening, Paragon AM and FM (2nd generation) screening, Concentric and Organic screening. Nexus also offers Crosfield Quality Screening (CQS), PCC AM (Amplitude Modulated) Screening, FM (Frequency Modulated) Screening, Hybrid Screening and ABS (Agfa Balanced Screening). Screening algorithms may be applied to complete jobs or pages, or to individual elements of pages.

This section describes the differences between all these screening types and also covers how to select the appropriate parameters for each option. Depending on the customers needs there are many ways to define the required parameters, and a thorough basic knowledge is needed to use the powerful screening possibilities.

The different screening types, and how they work will therefore be discussed briefly. Keep in mind that many topics and settings are related to screening such as screening type, angles, line screen ruling, resolution, dot shape and calibration.

11.1.2 PostScript screening

Offers the capability of defining exactly how any object on a page should be screened for output in terms of ruling, angle and dot shape. This screening will normally be defined in the original application. This may be done using a PPD, or in the case of ArtPro, directly in the application. When a PPD is used, the necessary padlocks in the workflow must have been unlocked before writing the PPD.

Using PostScript screening, an entire plate will normally only be screened with just one set of parameters. An exception to that is the use of Object Based screening and Hybrid screening. When using Object Based Screening individual elements may receive different screening parameters. This allows for instance to specify different screening for images compared to vignettes. Of course, the appli-

cation generating the PS files must have the possibility to assign this screening on a per object basis. In the case of Hybrid screening, both conventional and FM screening will be combined on one single plate. The decision which screening is used will not be made on a per object base, but is dependant on the screen values. Typically the FM would only be applied in the Highlights.

When parameters are defined through the PPD, and PostScript Screening is enabled in the workflow setup, Nexus will make sure that the screening is been applied as close as possible to the users requests and may have to make slight adjustments to avoid moiré. Through NexusManager, these adjustments may be checked later. Screening information defined in PostScript through the use of a PPD, is thus normally used to select the most appropriate available screening parameter for the whole page.

Usually PostScript screening will be used to select available or standard screening types on the RIP, but from some applications special PostScript dots may be definable as well. These do not require the specified dot to be available on the RIP, but will be generated during the interpretation of the PostScript file. Typically, this screening technique results in a poorer quality dot, compared to built-in screening types on a RIP

On Nexus, these special dot shapes defined direct in the PostScript file (e.g. done by Preps) will usually be ignored and the default dot shape will be used, unless in order to generate an unsupported dot shape such as a line. This PS screening will only be supported for non-PSTI workflows, since the PostScript screening information is not stored in the PSTI file format. For all other workflows special dot shapes from ArtPro or QuarkXPress such as line or helio may be applied.

In the case that screening conditions have been locked in the particular workflow, all PostScript based settings will be overruled.

Unlocking as many padlocks as possible in the screening dialog box, will provide a lot of flexibility when applying the parameters through the PPD.

11.1.3 CQS Screening

- **The CQSScreens.db**

  The Crosfield Quality Screening is selected from a limited selection of available CQS screen sets. This set is included with each NexusRIP and is defined in a text file on the Rip called CQSscreens.db.

  This file is just mentioned for information, and should never be modified, doing so will result in errors in the screening. On the right is an example of a single screening combination in this database.


```
DotSize: 43.0306
AngleFamily: Nominal
Cyan:      1    2  -19   93
Magenta:   1   -2  -30   90
Yellow:    1   -1  -43   43
Black:     1    0  -11   41
```

- Dot size

  The Dot size in conjunction with the output resolution defines the nominal screen ruling of the screen set. The dot size equals the output resolution divided by the line screen ruling. (for instance a dot size of 16 equals a combination of 2400 dpi and 150 lpi)

- Angle Family

  CQS screening has different Angle Families, Within each family, standard angles are defined for each of the 4 process colors. Currently there are six standard families defined for CQS, being CQSNominal, CQS Flexo, CQS FlexoLowYellow, CQSPlus7.5, CQSYellow7.5 and CQSBlack83. The available nominal angles for each family are fixed and have following values:

CQSnominal CQSflexo

Cyan	165°	97,5°
Magenta	45°	157,5°
Yellow	90°	82,5°
Black	105°	37,5°
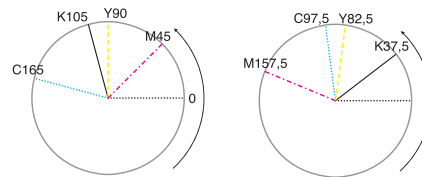
Note that in the CQSFlexo set, angles are 7,5° less than in the Nominal set and cyan, magenta and black assignments have been swapped by default.

CQSplus7,5 CQSyellow7,5

Cyan	172,5°	172,5°
Magenta	52,5°	52,5°
Yellow	97,5°	187,5°
Black	112,5°	112,5°
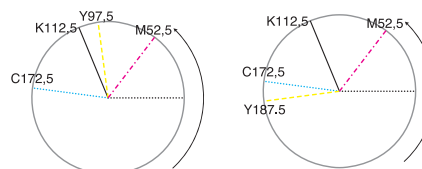
Note that in the CQSplus7,5 set, angles are 7,5° more than in the Nominal set but angles have not been swapped. The CQSyellow 7,5 is similar, but has a special value for the yellow

CQSflexolowyellowCQSblack83

Cyan	97,5°	112,5°
Magenta	157,5°	97,5°
Yellow	82,5°	52,5°
Black	37,5°	83°
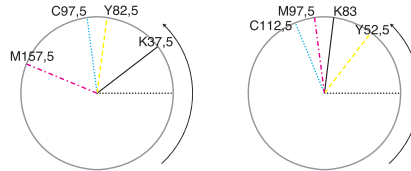
The CQSFlexo lowyellow angles are exactly the same as for CQSFlexo, but the yellow separation will be output at a slightly lower ruling. This to avoid moiré in some critical areas.

- KLMN values

The last four lines in each record of the CQSscreens.db show four numbers for each process color. These numbers are called KLMN values. These numbers define the angle and precise ruling for each separation.

- **Nominal vs. Actual Values**

- angles

The angle values derived from the CQS dbase for each Family are standard values. In practise, to ensure that moiré-free output is generated, CQS screening technology requires that the actual angles differ slightly from these nominal values.

- rulings

Similarly to the values of the angles, the list of the available standard rulings differs slightly from the predefined range, depending on the resolution (65, 85, 100, 110, 120, 133, 150, 175 and 200lpi). For some lower resolutions, there may be no frequencies available above 133 lpi. On some high resolution devices, rulings as fine as 400 lpi may be selectable.

If we select for instance a CQS Flexo dot at 2400 dpi and a 150 lpi nominal screen, the nominal values would be for all process colors a ruling of 150 lpi, and following angles: 97,5°, 157,5°, 82,5° and 37,5°.

The actual values however are:

Cyan:	155,28 lpi	97,44°
Magenta:	156,72 lpi	157,63°
Yellow:	155,28 lpi	82,56°
Black:	156,42 lpi	37,05°

The distinction between Nominal and Actual values to be displayed, can be set in the Screening dialog, using the "Nominal" option.

11.1.4 PCC Screening

- **Screen tiles**

  The PCC AM screening algorithm works completely different compared to the CQS screening just described. This screening references to a large database of screen tiles, stored in the NexusRIP folder, called PCC Screening.

  The selection of the most appropriate tile is based on the output resolution, the dot shape and the screen ruling.

- angle family

  PCC Screening has different Angle families as well, namely PCC Nominal, Flexo, Flexo1 and Flexo2. Selection of these family will automatically select the appropriate screening angles, being based on the screen tiles. Only the PCC Nominal Family allows different dot shapes to be selected, (round, elliptical, rsr)

  PCCNominalPCCFlexo

Cyan	15°	22,5°
Magenta	75°	82,5°
Yellow	0°	7,5°
Black	45°	52,5°
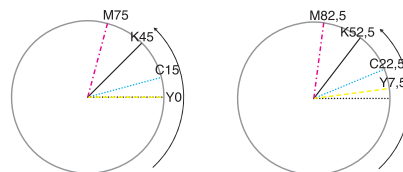
  PCCFlexo1PCCFlexo2

Cyan	22,5°	7,5°
Magenta	82,5°	67,5°
Yellow	67,5°	82,5°
Black	52,5°	37,5°
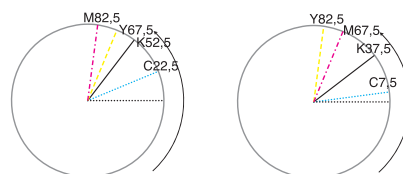
- flexomap.txt

  It is possible that the available screen angles are not answering the customer needs, especially for flexo printers. When using PCCScreening Flexo dot, some customization is possible by specifying custom ranges for the ruling or by flipping existing angles. Editing Flexomap.txt should only be done by qualified field engineers in order to avoid errors on NexusRIP.

11.1.5 Paragon Screening

- **Screen tiles**

  Paragon Screening works the same way as PCC Screening, using tiles (see above).

- angle family

  Paragon Screening has 3 screening families : Nominal, Flexo-7.5 and Flexo+7.5. Selecting one of them will select the appropriate screening angles, based on the screen tiles. Only the Paragon Nominal Family allows different dot shapes to be selected, Flexo is always round.

Paragon	Nominal
Cyan	165°
Magenta	45°
Yellow	90°
Black	105°
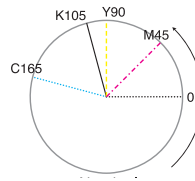
	ParagonFlexo-7.5	ParagonFlexo+7.5
Cyan	7,5°	22,5°
Magenta	67,5°	82,5°
Yellow	82,5°	7,5°
Black	37,5°	52,5°
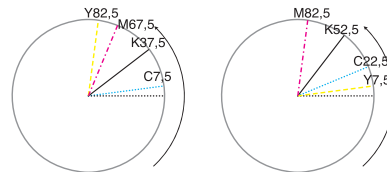
11.1.6 ABS Screening

Agfa Balanced Screening technology is an optional AM screening technology on a NexusRIP system and is licensed from Agfa. To be able to use this screening type on Nexus, a separate license is needed.

As for PCC Screening, this technology is based on the use of screen tiles, which are included on the Nexus CD in the folder PCCScreening. The ABS screening is an alternative for PCC and CQS screening, and may be advised to use where Agfa devices are connected to Nexus. Doing so will allow customers who are merging to a Nexus workflow to keep the Agfa screening they are used to.

However, the use of this screening is not limited to Agfa film- and plate setters and their typical resolutions. It is perfectly possible to drive a CreoScitex Dolev 800, using the ABSscreening at 2540 dpi. The ABS Screening results typically in excellent output quality on several plate setters.

The angles and dot shapes are limited, and there are no flexo dots and angles foreseen. The only available dot shapes are round and elliptical, the angles are strictly offset standard angles.

ABSNominal

Cyan	75°
Magenta	15°
Yellow	90°
Black	45°
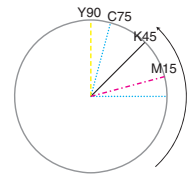
11.1.7 FM Screening

• **AM vs. FM**

Differently than with conventional AM screening techniques, FM screening technology does not change the dot size when the raster value changes. FM dots always maintain the exact same size which is depending on the resolution and the FM Scale. In highlight areas, the dots will be spread further apart, resulting in fewer dots (and not smaller dots). In darker areas, more FM dots will be used. Am screening will produce smaller dots
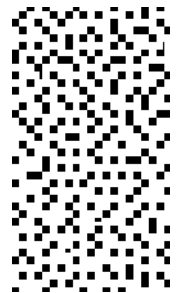
• **FM parameters**

Where conventional AM screening is defined by dot shape, angle and ruling, resulting in a typical structure, FM screening has no dot shape or ruling to be selected. The only variable is the dot scale, defining the size of the FM dots. This value is depending on the device resolution, as an FM dot is based on device pixels. For instance if a scale 2 dot is selected, this dot will be formed by

a 2*2 square pixels dot at device resolution. Such a dot at 2540dpi would result in a 20 micron dot, which may be too small for some printing processes. The usages of these dot scales actually replaces the line screen ruling for conventional screening. In the user interface, the ruling will be grayed out when selecting FM as screening family.

The FM screening is based on a single Screen Tile, available in the screening folder on NexusRIP. To avoid certain patterning, this screen tile will get rotated over 4 angles (0º, 90º, 180º and 270º) according to the color equivalent.

- **FM usage**

- separated output

  FM screening has different possible applications. Where output to film or plate setters is made, it may be used to avoid moiré or to achieve better results in the highlights. Small FM dots will also better retain gray levels.

- proofing

  Another typical application in NexusRIP, is the output to proofers. An FM111-scale1 dot will be selected automatically when outputting to the HP and is also the screening selection for any other low resolution proofing device that accepts these files. For dot-proof purposes, the FM screening is used to reproduce the correct AM colors. (Dotproofing itself uses AM screening)

- hybrid

  FM screening will be used for the highlights and/or shadow areas when using Hybrid screening, discussed in next paragraph.

- **Paragon Organic : 2nd Generation FM**

  Paragon Organic is a 2nd generation FM screening. Like other FM screens, the raster value is changed by changing the frequency of the dots. However, unlike regular FM, where these dots are placed completely random, the dots are combined into irregular, organic-like shapes called "worms". (see example underneath.

- Ruling

  The Ruling is the only parameter to be set. It allows to define the thickness of the worms.

If the ruling is set to the same as the device resolution, the worms will be 1 device pixel wide. If it is set to half the resolution, the worms will be 2 device pixels wide. It is also possible to set it at 1/3 of the resolution, to have worms with a thickness of 3 pixels.

Worms with a thickness of 1 pixel give the best visible result, but might be difficult to get on plate or on paper. In that case, you can select half the resolution as Ruling.

11.1.8 Hybrid Screening

• **Classic Hybrid**

Classic Hybrid screening is an optional screening technology in NexusRIP. It is not based on another type of screen tiles or a screens database, but it combines both AM and stochastic FM screening on one job or plate. (stochastic means a non-uniform spacing has been applied in between the FM dots)

Where stochastic FM screening provides excellent highlight reproduction, it may result in grainy effects when applied on complete images. Conventional AM screening is overall much smoother, but is not capable of reproducing highlights very well, especially for flexo applications. Hybrid combines the best of both worlds, by applying FM screening in the highlights and AM for the rest of the scale. As the third picture shows you, a simple combination is not enough, since this results in a clearly visible "break line". Therefore the classic hybrid screening provides in a transition area, where both AM and FM are used.

Stochastic FM

Conventional AM

AM + FM combined

Classic Hybrid

When setting up Classic Hybrid screening in the screening window, the desired screening family for AM should be selected, as well as the Scale to apply to the FM dots.

The most important parameters for Hybrid are: AM Mindot, FM Mindot, Start transition zone, end transition zone. These are all combined in 11.2.7 Set / Change Hybrid on page 417.

- **Quantum Hybrid**

  Quantum Hybrid is a special screening technique, based on AM screening, where stochastic screening is achieved by deletion of AM dots in the highlights.

  The quantum point defines at which value the deletion of AM dots can start to achieve lower graygray levels. Quantum Hybrid can also be defined in the Screening dialog. See 11.2.7 Set / Change Hybrid on page 417.
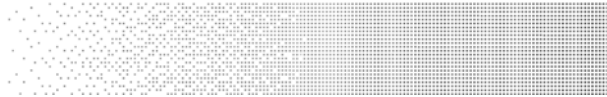
- **Autoblend Hybrid**

  Autoblend Hybrid is a special screening technique, whereas the transition point is calculated by Nexus, based on the AM screening and the FM dot size. The transition point will be calculated by finding the percentage where the size and frequency of dots is the same for the AM and the FM screen. Above this percentage, AM screening is used, below it will be FM screen.

- **Radiant Hybrid**

  Radiant Hybrid is the same as Autoblend, but whereas Autoblend only takes place in the highlights, Radiant also effects the shadows.

11.1.9 Esko Screening

The PDF and Basic RIP both support screening with Esko screening technologies. This includes support for the standard screens plus Groovy screens, Samba screening and PerfectHighlights. Object based screening is only supported in the PDF RIP and not in the Basic RIP.

Note: Esko screens are licensed. Just because they are installed and show up in the menu does not mean they can be used. If the user does not have the license for the specific screen technology, there will be a license error in the RIP.

- **Enabling Esko screening in Nexus**

  Nexus needs to have access to Esko screens that have been set up using ScreenManager. This is easily done using the following steps:

  1. Shut down Nexus

  2. Locate the folder containing Esko screens (eg. static screens installed from the Esko DVD or made by ScreenManager). By default these are in C:/Esko/bg_data_screens_v010, although the location can be configured with the Esko installer.

  3. Copy this folder to the Nexus folder or make a short-cut and copy that. The copied folder should sit at the same level as the PCC Screening folder

  4. Rename the copy (or alias) to "Esko Screening"

  5. Restart Nexus and connect to it using NexusManager

In the RIP dialog where the screening is set up there should now be an "Esko" entry in the Screening Family menu. If you choose Esko, the screen dot menu will present a choice of screens made by Screen Manager which can be chosen in the normal way.

- **Differences between Esko screening and Paragon screening**

  Esko and Paragon screens use a different system for measuring screen angles. Therefore, an option allows the user to select whether Esko angles or Paragon angles are preferred. See below for more information.

  Esko screens have the option to set a different ruling for the Yellow separation (or even for using a stochastic screen), which is available as an extra control in the screening dialog.

  PlateCell and Hybrid options are not available for Esko screens. Similar screening features can be set up using ScreenManager and are incorporated into the Esko screen tile itself.

- **Esko Angle System**

  For Nexus screens, the 0 degree angle is at east, and angles are measured counterclockwise. In FlexRIP, Esko screens are measured with 0 degree at east, measuring clockwise. By enabling Esko Angle System, the angles are measured the Esko FlexRIP way (on the right) instead of the Nexus way (on the left)
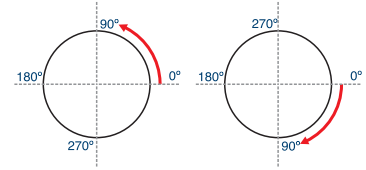
- **Change yellow ruling**

  This option allows the user to set a slightly different ruling for the yellow separation. If you choose the option, you are then able to choose a percentage difference, either higher or lower, for the yellow ruling. It is a manual method for doing what Paragon screens do automatically.

11.2. Screening Setup in the Assembler

The Assembler dialog (used in every activity that involves screening) allows the user to set all screening parameters.
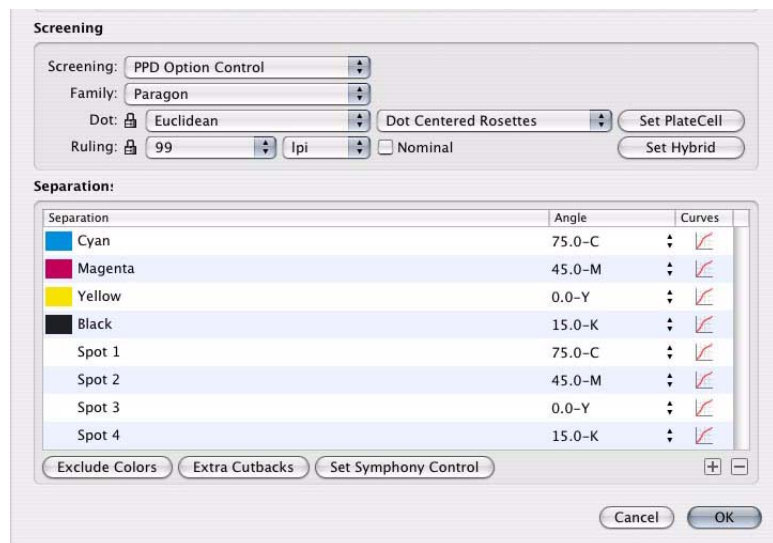
11.2.1 Screening Pop-up

The Screening pop-up allows the user to define what controls need to be taken from the PS file, and what settings should be kept from the dialog.

- **PPD Option Control**

  The settings with an open padlock are controllable through the PPD

- **Full Control in PS**

  All settings are made in the PS file, thus cannot be set in the dialog. Nexus 9.5 has been optimised to increase the output speed of ArtPro PS or PDF files containing object based screening.

- **Ruling / Angle / Angle/ruling control in PS**

  Only the Ruling or the Angle or both, are controlled from the PS, the other settings will be set in the Assembler dialog.

- **Unscreened**

  When set to Unscreened, an 8bit output will be generated. Please note that unscreened data can be calibrated using a SymphonyCalibrator curve. The option Calibrate Unscreened Output is available.

- **Define Default Screen**

  When using PS control, it is possible to set a default screen, i.e. settings to be used if the settings can't be found in the PS file.

Recent changes have resulted in the handling of the 'Define Default Screen' checkbox being more rigourusly which may result in altered behaviour for some jobs. The changes only affect the behaviour when 'Define Default Screen' is unchecked and 'Full Control in PDF' is selected from the Screening popup. Jobs will now fail if they do not contain any object based screening information and no default screen has been specified. Jobs using OBS but containing objects without screening information will be processed and the first object screen in the job will be used as the default. To ensure predictable results it is best to define a default screen.

11.2.2 Family

When defining the screening in the workflow, the family is the first selection to make.

Having selected a family, the angles in that family are shown in the four pop-ups below, where their default assignment to the four process colors is shown. Each family has typically its own specific angles.

Depending on the selected family, other pop-ups such as the ruling and dot shape will show other values. With ABS screening, for example, only round and elliptical dots are available. If FM (i.e. stochastic) is chosen as the family, the same screening pattern is used for all process colors, but the pattern is rotated progressively through 90 degrees.

11.2.3 Dot Shape

This defines the shape of the dot that is used, which may be restricted by the selected angle family. In the case of CQS families, for example, there are 4 possible elliptical dot shapes, whereas for PCC and ABS there is but one elliptical dot shape. If FM is selected as the family, the dot shape popup shows fm111 and is disabled. The four samples show us some different CQS nominal dot shapes in a 50% area (elp-10, elp-40, round and square).
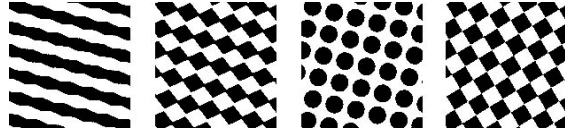
The available dots depending on the families are as follows:

Paragon :   euclidean, ellipse35, diamond35

Paragon -7.5 / +7.5 :   round

CQS :   round / square / euclidean /
               elliptical 10, 20 , 30, 40

CQS Nominal : Same as CQS + Gravure and Pincushion

PCCNominal: round / euclidean / chain

PCCFlexo: round

ABSNominal: round / elliptical

FM: FM111

11.2.4 Ruling

Having selected a Family and Dot shape, the Ruling popup shows all of the available line rulings at the resolution defined in the separation editor. Lower rulings are available at lower resolutions and some angle families offer lower (and higher) rulings than others. The values in this popup are actual rulings. If the Nominal option is switched on, you can choose Nominal values for the Ruling.

11.2.5 FM Size

When FM is defined as the Family or Classic Hybrid is selected, the size of the FM dot can be chosen next to FM Size. The available values are based on the defined Resolution. The first value is a scale factor 1, meaning the FM dot has the size of 1 dot on the ImageSetter. Next values are scale 2, scale 3, etc. For all AM screening technologies, this popup will be disabled.

The fundamental size of the FM dot is 1 pixel at device resolution (e.g. 10 microns at 2540 dpi).

Note that the area of the dot increases with the square of the scale factor and the resulting dots are always square in shape. A scale 3 dot will always result in a 3*3 device pixels FM dot.

Scale 2 @ 1270dpi   Scale 2 @ 2540dpi   Scale 3 @ 2540dpi
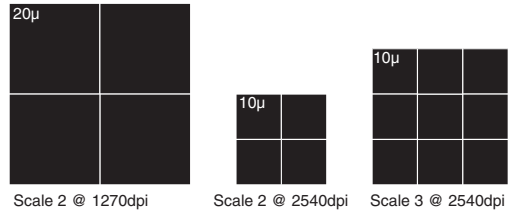
11.2.6 Dot Centered / Hole Centered Rosettes

For the FM Paragon screens, the Rosette Structure allows to choose between Dot Centered and Hole Centered Rosette. As the name says, a Dot Centered Rosette (left) is built up around a dot, a Hole Centered Rosette (right) around a hole. See the examples underneath.
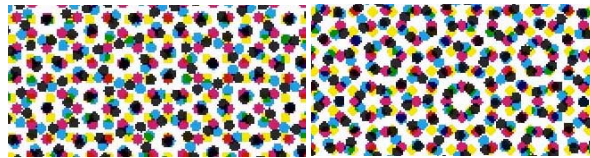
11.2.7 Set / Change Hybrid

Unlike in earlier versions, Hybrid settings can now be made in the Screening dialog. Once a Hybrid screen is defined, the "Set Hybrid" button changes to "Change Hybrid". Setting Hybrid screening when an OptiMin is defined, will generate a warning and turn off the Opti-Min.

- **Hybrid Classic**
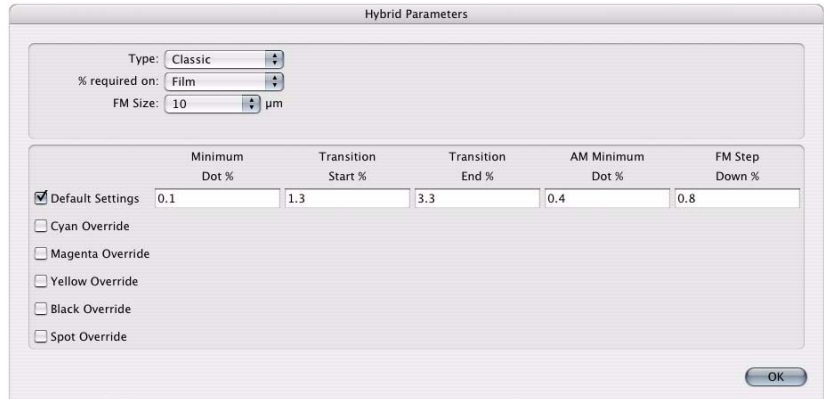
The Classic Hybrid allows the user to set all parameters : FM Minimum dot, AM start, FM end, AM minimum dot and FM Step Down.

The Minimum Dot allows the user to set what % is the minimum to be used in the FM region. Below that percentage, points will be dropped.

The settings can be made for Default, or an override can be defined for C, M, Y, K or Spot colors.

It is advisable to always use the required percentage on Film or Plate.

- **Hybrid Quantum**
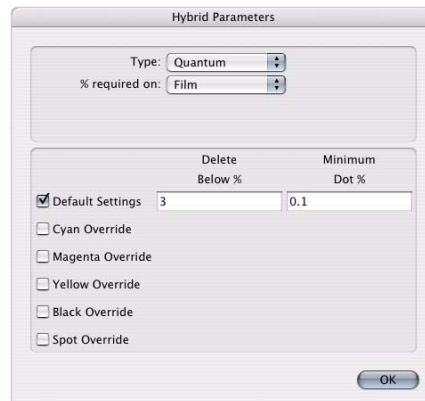
Quantum Hybrid only needs the setting "Delete Below", indicating the dot % below which AM dots are dropped out randomly.

The Minimum Dot allows to set what % is minimum to be used in the FM region. Below that percentage, points will be dropped.

The settings can be made for Default, or an override can be defined for C, M, Y, K or Spot colors.

It is advisable to always use the required percentage on Film or Plate. Nexus will automatically interpolate classic hybrid % depending on the calibration file.

• **Hybrid Autoblend**
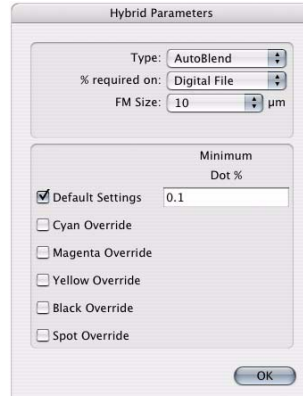
Autoblend is a Hybrid screening where Nexus will calculate the transition point, based on the FM dot size and the AM ruling and resolution. The FM dot can be set here too, but this is the same setting as in the Assemble dialog.

The Minimum Dot allows to set what % is minimum to be used in the FM region. Below that percentage, points will be dropped.

The settings can be made for Default, or an override can be defined for C, M, Y, K or Spot colors.

11.2.8 Set / Change Platecell

PlateCell Patterning is a special optional screening technology for flexo that applies a patterning technique to 100% image areas in the job. The obtained result may be compared with a conventional anilox been used.

PlateCell Patterning makes use of special screen tiles, included in the NexusRIP software. These are added in the solids at a very high line screen. It has many benefits for flexo printing such as better solids, less halo, open reverses and sharper type.

Also, because of the grainy plate surface, a thin uniform ink film is possible (comparable to offset plates) which will eventually result in a considerable ink saving.

Different PlateCell Patterns are available through the screening window. A print test is required before deciding which Pattern offers the best results with specific plate material and presses.
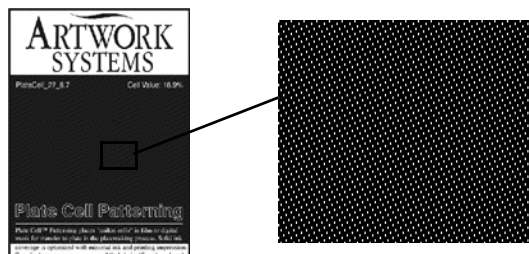
This is one of the available patterns available on the test targets on the Nexus CD. It has been screened and shows a patterning in the solids. This will result in a grainy plate and thus a better ink coverage in print.

Platecell settings can be made in the Screening dialog. Once a Platecell is defined, the "Set Platecell" button changes to "Change Platecell"
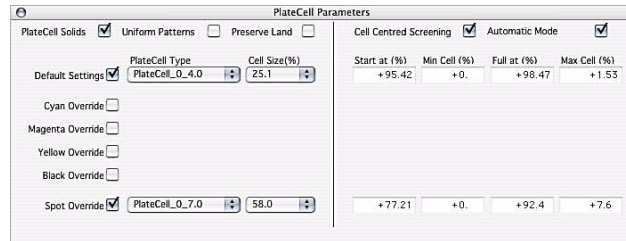
- **PlateCell Type**

  The PlateCell Type allows to define the angle and size of the grid in which the PlateCells need to be applied. The first number in the Platecell type defines the angle, the second defines the scaling factor: if set to 4, the grid will be 4 by 4 device pixels.

- **Cell Size (%)**

  The Cell Size allows to define how big the "hole" in the solid should be. The available values depend on the grid size defined in the PlateCell Type : if the grid is e.g. 4 x 4 pixels, a row vertical and horizontal needs to be kept, so there are 3 possibilities (3 x 3 available device pixels, see image on the right).

Land

Cell, 6 of the 9 available pixels
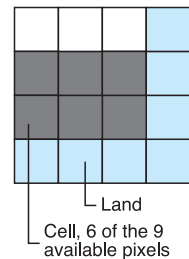
- **PlateCell solids**

  Nexus applies PlateCell patterning on 100% paint.

- **Uniform patterns**

  The patterns should be symmetric in horizontal and vertical direction. This option reduces available cell size %. In the above example of a 4 x 4 grid, this allows cells of 1, 2, 4, 6 or 9 pixels, i.e. 1 x 1, 1 x 2, 2 x 2, 2 x 3 and 3 x 3 pixels

• **Preserve land**

  For the highest cell size, the pattern will be surrounded by one pixel. This option reduces available cell size %. In the example of a 4 x 4 grid, only 2 x 2 pixels are available for the cell.

Land

Cell, 2 of the 4 available pixels
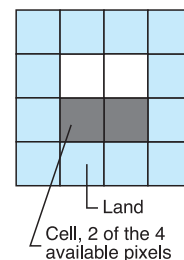
• **Cell centered screening**

  Allows to make PlateCell patterns in halftone dots. We suggest to enable automatic mode. In this case, NexusManager or ArtPro will automatically calculate start and end percentages, the minimum and maximum cell percentage. Of course, these values depend on the PlateCell type and cell size.

  The settings can be made for Default, or an override can be defined for C, M, Y, K or Spot colors.

11.3. Calibration

Calibration in Nexus can be found at 2 levels: Symphony Calibrator, the application to set up calibration curves, and the dialogs in Nexus where the calibration is defined.

Whereas in 7.5 one single cal file was used, containing all calibration information. In 8.0 and higher, a calibration curve contains data for one single step or device (film, plate,...) and the calibration curves are combined in Nexus, in the assembler.

11.3.1 Calibration in Nexus

The Calibration part of the Assembler contains 4 sections : Prepress, Press and OptiMin in the calibration dialog, and the separation settings in the Assembler dialog.

- **Using 7.5 FastCalibrator curves in Nexus**
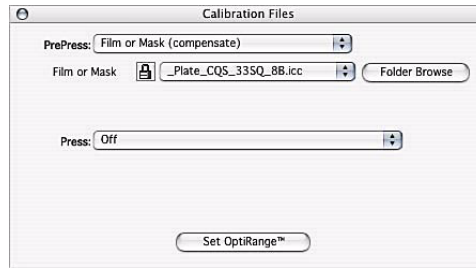
You can still use (combined) Flexo calibrator files in Nexus. If you want to do so, without using ArtPro, you should set calibration for prepress to "Film or Mask (compensate)" and select the FastCal file there. Leave all other options blank. When using ArtPro, you can use Nexus Screening. See the next Part (Calibration in Art-Pro).

- **PrePress**

The PrePress Calibration has 5 modes :
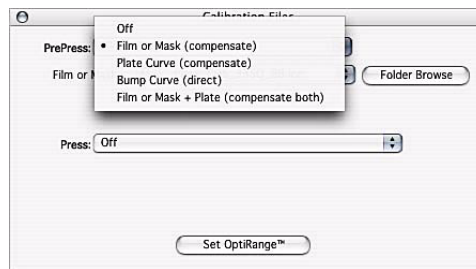
- Off

No Calibration

- Film or Mask

One single compensation curve for Film or Mask

- Plate Curve

One single compensation curve for Plate

- Bump Curve

To apply one single direct curve

- Film or Mask + Plate

Two single curves can be combined: one for Film or Mask, one for Plate. Both curves will be compensate. Two dropdown lists will be shown where 2 curves can be selected.

- **Press**

  For press, you have 7 modes:
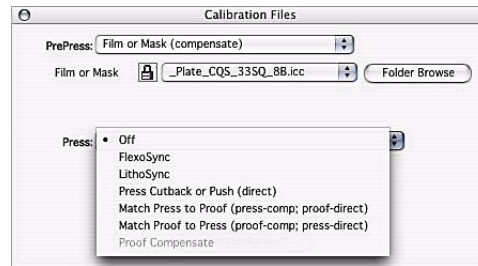
- Off

  No Calibration

- FlexoSync

  FlexoSync is the recent version of Flexo-Cal. In the curves dropdown, you can choose Linear, or one of the FlexoSync curves. The number after FlexoSync indicates to what value the 50% is reduced. FlexoSync 41 e.g. is to be used when the 50% is reduced to 41%
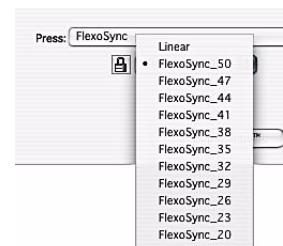
  FlexoSync 50 correspond to Flexocal A, FlexoSync 45 to Flexocal B, etc.

  For an elaborate explanation on FlexoCal, we refer to the Flexocal documentation

- LithoSync

  This is the new version of LithoCal. The correspondence is the same as for FlexoSync.

- Press Cutback or Push

  This allows to set a direct curve for the Press.

- Match Press to Proof

  Allows matching the press to the proof, by applying a compensate curve to the press, and a direct curve on the proof.

- Match Proof to Press

  Allows matching the proof to the press, by applying a compensate curve to the proof, and a direct curve on the press.

- Proof compensate

  Allows to set a compensation curve for a proofer. This option is only available for proofing activities.

• **OptiRange**
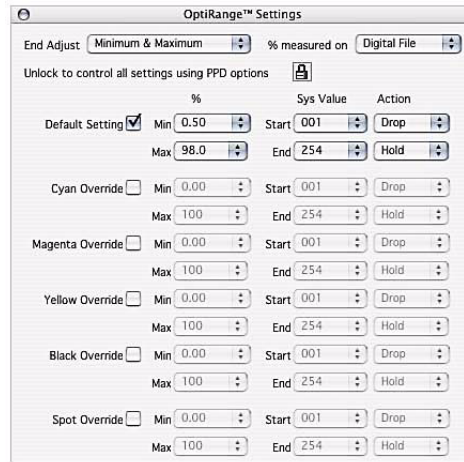
The OptiRange option is based on the OptiMin option in FastCalibrator in Nexus 7.5. It allows to apply a minimum and maximum dot on the calibration curves to avoid loosing dots on flexo plates. The option is mostly used by FlexoCal users.

The settings can be made for Default, or an override can be defined for C, M, Y, K or Spot colors.

• End Adjust

You can adjust the minimum dot, maximum dot, or both. According to the settings here, the appropriate fields below will be made available or disabled.

• % measured on

This option defines if the values set below should be the values on the digital file (before applying calibration) or the values on the film or plate.

• Min % / Max %

The Min or Max percentage is the Minimum or Maximum dot percentage desired.

• Sys Value

The Sys Value is the gray value where the minimum dot has to start, or the maximum dot has to end. A value between 0 and 10 can be chosen for minimum, and between 235 and 255. This option works in system values, which equals approx. 0.4 % (100% / 256 sys val = ± 0.4%)

• Action

The Action defines what to do with values before the minimum system value or above the maximum system value.

If set to Drop, values below the minimum system value will be set to 0%, so they will be dropped out. Of course, if the minimum system value is 1, no system values will be dropped.

If set to Clear, system values above the maximum system value will be brought up to 100%.

If set to Hold, system values below minimum (or above maximum) system values will be kept at the min (or max) percentage.

- Examples

The examples are based on the Minimum dots, but at the Max end, it works the same way.

Example 1

Min % = 5%

Sys value = 010

action = Drop

The curve has been bend so that the curve goes through the defined Min Point / sys val point.

Below the sys val, everything is dropped down to 0% (loss of gray levels)

Example 2

Min % = 5%

Sys value = 010

action = Hold

The curve has been bend so that the curve goes through the defined Min Point / sys val point.

Below the sys val, everything is brought up to the 5% minimum (including sys val 0 !)(loss of gray levels)

Example 3

Min % = 5%

Sys value = 001

action = Drop

The curve has been bend so that the curve goes through the defined Min Point / sys val point.

In this case (as the sys value is set to 001), no gray levels are lost.

11.3.2 Separation setup

In the Assembler dialog, you can make settings for the individual separations and for spot colors

- **Extra Cutbacks**

  The Extra Cutbacks button allows to define the folder in which the Extra Cutback curves can be found. These curves will be available in the dropdown menus underneath, but this folder is also important for files coming from ArtPro (see next section)

- **Separations (CMYK)**

  For CMYK, you can set the angle (between 0° and 90° for round and diamond dots, etc. and between 0° and 180° for elliptical, etc.) The available angles depend on the dot shape.

  Next to the dot shape, you can select an Extra Cutback Curve. This is an additional curve for that separation, that will be calculated on top of the other curves. The curve will NOT replace other curves !

- **Spot colors**

  The angle and Extra Cutback curve for spot colors can be set using the dropdown menus, and the list on the right. By default there are 4 lines in that list, representing spot color 1, 2, 3 and 4. The 5th spotcolor will get the settings of the first line, etc.

  By clicking the Delete button, the selected line will be removed, by clicking Add Spot, an extra line will be added.

  When selecting a line in the list, the settings will be shown next to "Spot", and its settings can be changed using the dropdown menus. The settings will be changed in the selected line as well.

- **Curves**

  The Curves button (with the v mark) allows to give a graphical representation of the curves, including a full table of the system values and the corresponding values. You can see the combined curve, or the individual curves.

11.3.3 Calibration in ArtPro

- **Nexus**

  When setting the Calibration in ArtPro, you can still use the "7.5" method, using a single Fastcalibrator file, by setting the screening in the "Nexus" tab of the screening. In that case, the Assembler should be set to Full Control in PostScript, and the calibration should be left empty.

  Do NOT use Symphony Calibrator calibration files in the Nexus tab!

- **Nexus Extended**

  When using the Extended Nexus, calibration should be set in the Assembler.

In The Nexus Extended, you can set screening, ruling, angles (also for all spot colors) and an Extra Cutback per separation. This works the same as selecting an Extra Cutback in the Assembler dialog.

The Extra Cutback dropdown contains "Linear", and all Flexo-Sync and LithoSync curves. The dropdown will also contain all names defined in the Extra Cutback Curves section in the Preferences (see below).

When sending this info to Nexus, only the text string with the names of the curves will be taken. In the Assembler, Nexus will search in the Extra Cutbacks folder for a file with the exact name as that text string.

- **Output**

  The Nexus Extended info will be included in every PostScript file created from ArtPro.

  In the Export PDF dialog, there is a option "Extended Nexus" If this option is on, the Extended Nexus info will be saved in the PDF file.

- **Extra Cutback Curves**

  As explained above, you can set Extra Cutback Curves in the Preferences in ArtPro, in the General Tab, using the Extra Cutback Curves button.

  In the Extra Cutback Curves, you see a list of the already defined Extra Cutback Curves. You can add a curve by clicking the Add button, and browse to the Curve you want to add. By clicking the Add Folder button, you can select a folder, and all the curves in that folder will be added. All curves in subfolders will be added as well, so do not select a folder (or HD) containing hundreds of curves!

  By selecting a curve in the list, and clicking the "Delete" button you can remove a curve from the list. By clicking the Delete All button, all curves will be removed from the list.

  When changing the Extra Cutback Curves list while the Screen dialog is open will not change the dropdown menu immediately. Just close the Screen Dialog and open it again to see the Curves in the Dropdown.

  The text file containing the names of the Extra Cutback Curves is saved in the System Preferences folder of ArtPro.

11.3.4 Symphony Calibrator

A full explanation on Symphony Calibrator can be found in the Symphony Calibrator manual, which can be found in the Download Center and in the Symphony Calibrator folder after installation.

Chapter 12. Color Management

12.1. General

12.1.1 What is color management?

Color management is a technique used on color in documents to ensure that consistent color is reproduced throughout the print production cycle. Managing color hence means to make sure color is reproduced in the same way for each device the system is outputting to.

Each device (scanner, monitor, printer, printing press…) has its own color capabilities (color gamut, color space, etc.…). As an example, the color that can be reproduced on e.g. a dye sublimation proofer is completely different from the color that can be reproduced on e.g. a sheet offset press.

A color management system is a collection of software tools to reconcile the differences between these different devices, to produce consistent color and to make color portable, reliable and predictable…

As each device reproduces color differently… (monitor RGB, scanner RGB, color printer CMYK, press CMYK (SWOP, Toyo,…), etc.…) this collection of software tools needs to make sure color is communicated reliably between different devices and operating systems, and that differences between the devices are compensated for. The solution to compensate for these differences is to communicate color in a device-independent manner.

12.1.2 The color gamut…

The color space of each device has its own color gamut, meaning the range of colors it can reproduce. Depending on the basic colors that are used (e.g. mixed), differences in gamut will obviously occur. In the graphical world, the two main color space are RGB, which is an additive color space, and CMYK, which is a subtractive color space.

- RGB = additive color space

The red, green and blue light are combined to create colors, and combining full intensities of all three makes white…
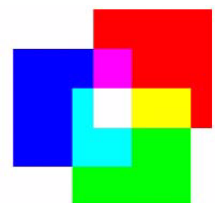
- CMYK = subtractive color space,

C, M, Y, and K are combined to create colors, the transparent inks filter the white light that reflects back from the paper and subtracts some of the R, G and B from the spectrum. The combination of CMY theoretically gives black, but in practice a muddy brown, therefore black is added.
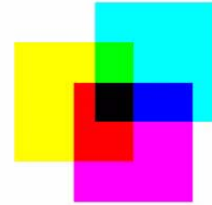
Each color space (RGB, CMYK, …) have their own range of reproducible color (= color gamut). Moreover, RGB gamuts vary widely between devices (scanner, monitor, …) RGB monitors can display more colors than can be matched in print and some CMYK colors cannot be matched on screen.
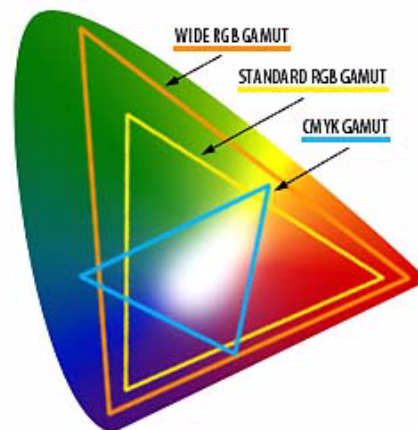
This means that wider RGB gamuts will give more problems when outputting to press. When colors are e.g. scanned, which is typically an RGB process, and when they are outside the CMYK gamut of the output device, they will need to be mapped to the closest color in the CMYK gamut of the device that will be used for printing. This actually means the color will be compressed to the CMYK gamut and hence there will be a loss in quality. The goal of color management is to make sure the mapping of colors happens in a consistent, reproducible and predictable manner.

12.1.3 Device Independent Color

As explained above, color varies depending on the device that produces it (monitor, proofer, …)… e.g. each device speaks its own color language….

Imagine four people in a room speaking Swahili, French, Mandarin, and German… To communicate between all of them, they do not necessarily need to learn each others language, if all of them would learn to speak a "neutral" language, they only need to translate from their own language to the neutral language and back.

Color management works very much in the same way, using a device-independent color model as the neutral color language by which all color information is referenced.

The particular neutral color model used is CIELAB (1976, Commission International de l'Eclairage), based on how the human eye perceives color….

Some color models:

RGB (CMY), Red, Green, Blue or Cyan, Magenta Yellow (are closely related color models, primary colors of each form the secondary colors of the other),

HSB / HSL, variations of a similar color model based on hue, saturation and brightness, or hue, saturation an lightness,

CIELAB, CIEXYZ, CIELUV, for measuring colors and distinguishing between colors, CIELAB is often used in color management... In the case the color is defined by an "L" axis, which differentiates between light and dark, an "a" axis, which differentiates between red and green, and a 'b" axis, which differentiates between yellow and blue.
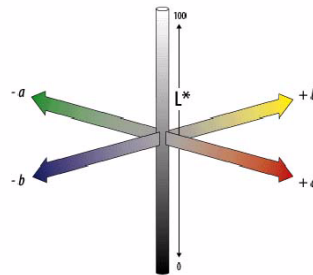
In a color management system, images (or color) are edited in a device independent color space that is larger than the color space of the output device or input device (monitor, proofer, press).

Images can be saved with profiles describing the characteristics of the output device and how to transform the image to and from the independent color space - these are images with "tagged" profiles…

Thus image files become portable and can be repurposed for output on widely differing devices...

12.1.4 ICC Based Color Management

ICC stands for the "International Color Consortium" which is the organization that has put the color management standard together.

An ICC color management system has 3 major components:

• Device independent color space (Reference Color Space)

sometimes also referred to as Profile Connection Space

- Device profiles

these define the color characteristics of the different devices (also referred to as ICC profiles)

- Color Management Module (CMM)

This is the module that interprets device profiles and transforms color between devices and the Reference Color Space based on the profiles.

The specifics of ICC determine that color space transformations are the responsibility of the operating system (ColorSync, Windows ICM) and that applications should not replicate color management transforms.

Actually, the device profiles or ICC profiles (containing information on color behavior of output devices) will provide the data to carry out the transforms, while the operating system will allow an application to call the CMM (color management module) to actually transform the color. Depending on the operating system, several CMM's are typically available to calculate the transforms (Apple CMM, Heidelberg CMM, Agfa's CMM, Imation, Kodak, etc....).

The device profile or ICC profile enables the color management module to convert between the device's native color space and a device-independent color space (e.g. CIELAB). These profiles can be embedded with image files, which will provide the necessary color information on how the image's color was produced.
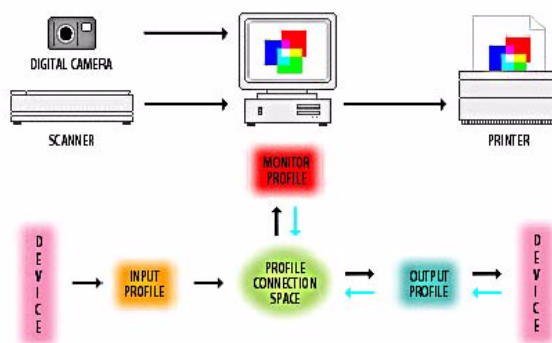
There are three classifications of device profiles:

- Input profiles

for scanners, digital cameras, etc...., known as source profiles.

- Display profiles

- Output profiles

for printers, copiers, film, recorders, printing presses, etc.... known as destination profiles.

Profiles can be delivered by manufacturer of devices to describe the "generic color behavior" of that device (e.g. proofer), or generated for a specific device using Color Profiling Software and a color target (Imation, ProfileMaker, Colorblind, etc....)

Using this profiling software and a spectrophotometer, the Lab values for every swatch of the output of a target (as shown in the snapshot) are measured, and compared with the optimal values. This data will then be computed into an ICC profile that describes the color behavior of that specific device the target was output on.

12.2. Nexus Color Management Implementation.

In Nexus 9.0, an elaborate ICC based color management system is implemented which allows to apply color management throughout the whole production cycle: on import, on screen using ArtPro, on proofing device, and on output. This is true for as well NexusImport, NexusProcessor and NexusRIP. To execute color management, Nexus on Windows makes use of Windows ICM implemented with Windows 2003, or ColorSync. Nexus on OS X uses ColorSync. In ArtPro, e.g. to display with color management, ColorSync is used. The Nexus PDF RIP activities can also use the Adobe CMM. Adobe CMM is the Color Management engine provided by Adobe, and used in all Adobe applications. It can be obtained from the Adobe Website.

The principle of color management is actually quite simple. The goal is to achieve consistent color on every device that is used in the workflow. Each device has an associated color space (e.g. RGB, CMYK,...), not only in general but equally for each device specifically (e.g. camera 1, scanner 2, printer 3, proofer 4,...). An ICC profile, associated with the color space of the device, then describes what the optimal way is of converting the color of the device into or from a neutral color space, often referred to as XYZ or Lab. if every color space has its associated profile, then it is possible to consistently convert color from one color space to another by passing through the XYZ color space, as illustrated by the diagram. With the new color management system in Nexus, this type of conversion can be

applied on any type of image or color being imported into Nexus, output to the screen on ArtPro, output to a proofer, or to an output device.
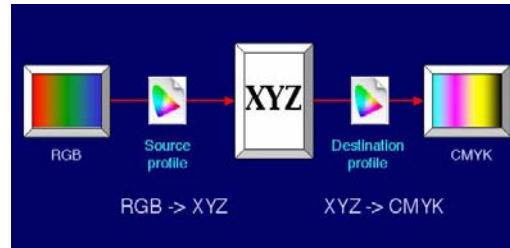
Since Nexus does not internally work on XYZ or Lab, but rather on CMYK, an internal CMYK working space is employed, which is used to convert all the images (or color) to when imported into the Nexus (either on NexusImport, Processor or RIP) environment. Note that with NexusImport or Processor, this is actually the ArtPro file format.
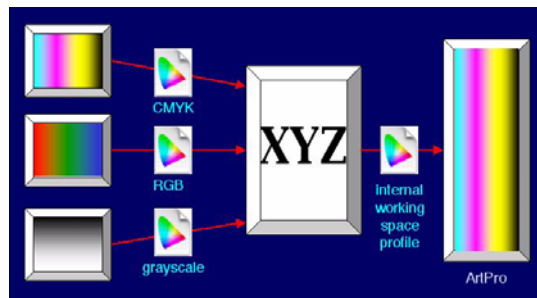
The diagram above displays the process of images or even any line art when imported or placed into the system, each time the associated color profile is used, while a working space profile is used for conversion into the internal CMYK working space. Thus, when importing or placing pictures into Nexus, the color spaces are automatically taken into account to convert CMYK, RGB and grayscale into the internal working space, which could already be set to the press profile. As already explained earlier, Nexus does not contain a color management module and does not generate ICC profiles. When appropriate, it calls the Windows ICM color management module with the appropriate (selected) profile to obtain the color management transformations.

On output (and note that output could be a display, proofer or to separations) color can be converted from the internal working space to the proofing space or to the press space (which could be the same as the working space). This will hence produce consistent

color on output, and also allow to simulate Press color on the proofer, especially useful if the press can only reproduce a limited color gamut.
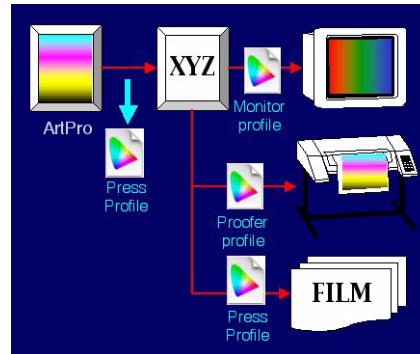
In the case of ArtPro, color can be converted from the internal working space to RGB on the color monitor, using the color profile of that specific monitor device. Furthermore it is possible to use soft proofing on screen, which will actually run the color through the press and proof profiles before displaying it on screen. This will simulate on screen how the document will be proofed. The diagram above shows a schematic overview of the different outputs from the XYZ neutral color space. Note that, as described above, profiles can be combined to simulate the press output on the proof, or to simulate proof and press output on screen.

12.2.1 Color Management on Import / Processor

The color management on NexusImport and Processor is actually based on the ArtPro color management. In order to use color management on Import or Processor, one needs to define a color settings file in ArtPro, which will determine all the appropriate profiles to be further used in the NexusImport or Processor workflows.
As indicated in the color management menu, different tabs are available which will determine what profiles to select in every stage of the importing or output process. All the settings combined can then be save in a color settings file, which can be selected in the Importing or Open ArtPro file related activities in the workflow. In every activity in the workflow, it is then possible to override these settings with new settings to accommodate specific deviations for a specific workflow.

- **General settings:**
  mainly determines the internal CMYK working space profile, which could already be set to the press profile. Note that all images and color will be converted to the CMYK of this working space profile.

- **Import settings;**

  contain the settings for the ICC profiles to be used for images and colors, that are embedded in the PostScript or PDF file. Note that when the file itself contains embedded profiles, the embedded profiles will always be used to convert to the internal working space profile, even if the Enable Color Management checkbox is not set!

- **Place Picture settings:**

  contains the settings for images that are linked through OPI, but for CMYK images, will also color manage images which are embedded in the file.

- **Output settings:**

  when making separations or proofs, will determine which profiles to use. Note that when making separated output, the color profiles as defined here will only be used for the images in the file (including gradations), but NOT for line art! The values of the line art contained in the file will be put unmodified into the separated output, regardless if they have been color managed on import. (the color managed values are simply put into the output). For composite proofing output however, line art will be taken into account for color management. For PDF Export, no color management is performed at that point in time, nor are any profiles embedded at that stage, not unlike separated output, all values as they have been color managed on import are put into the file, for images as well as line art.

- **Display settings:**

  Only for ArtPro. This will determine how the color needs to be displayed on screen.

12.2.2 Color Management on Nexus RIP

Similar to the color management on Import and Processor, Nexus Basic RIP and Nexus PDF RIP equally supports color management when importing PostScript/PDF or when proofing to devices.

You have 4 options, both for CMYK as for RGB objects:

- No Conversion/PostScript Conversion: CMYK objects are treated as DeviceCMYK, RGB objects are converted to DeviceCMYK using standard PostScript Conversion. Profiles are ignored.

- Use Default Profile: use the default input profile defined in the Color Management dialog. Embedded profiles are ignored

- Use Embedded Profile: use the embedded profile if there is one, otherwise treat as DeviceCMYK or use PostScript Conversion

- Select Best Profile: use the embedded profile if there is one, otherwise apply the default input profile.

Nexus RIP converts the data to an internal rendering space (which could be the press profile), while an additional conversion could take place when sending the interpreted data to a proofing device, using the ICC color profile of the proofer, and the source ICC profile which has been used to generate the CMYK data internally.

12.3. Nexus Activities & Color Management

Following section will explain in detail the color management of each of the activities in NexusImport, Processor and RIP where color management can be used, and what each time the implications are of the different settings.

12.3.1 NexusImport and Processor activities

- **Importing Activity**

If a workflow starts with an importing activity, the color management settings can be enabled through the Color Settings "Color Management" button. This will open an additional menu where it is possible to select a color settings file, as previously saved by ArtPro. As opposed to ArtPro, this menu now only contains the Import PS tab and the Place Picture tab, but keep in mind that when the color management settings are enabled, these color management settings (including the Output setting) will be valid throughout the rest of the workflow, unless when values are overridden in specific activities later on in the workflow.

When one simply wants to use the profiles as defined in the Color settings file, it is not necessary to define any ICC profiles at this stage since they are all included in the Color settings file.

However, it is possible to override the settings as defined in the Color settings file by clicking the override button. The functionality for the Import PS tab and the Place Picture tab will now be identical to the functionality which was contained in the Color settings file, however one can now fill in different profiles for each of the color spaces in either the Import PS tab, or the Place Picture tab.

Equally note that the button "Enable Color Management" does not mean that there will never be color management performed if this option is not set. Therefore we prefer to refer to this option more as "Enable Color Managements Settings". When the option is not set, there will still be color management performed if there are embedded profiles in the incoming file. In this case a generic CMYK profile will be used as working space profile. Hence if a incoming PDF file contains embedded CMYK profiles (e.g. SWOP

20%), all line art and images will be changed accordingly! This may result in undesired line art modifications. Only when the incoming file contains no embedded profiles, and when the Enable Color Management option is not set will there be no color management applied to the file. This is similar to the way NexusRIP works.

• Import PS/PDF Tab
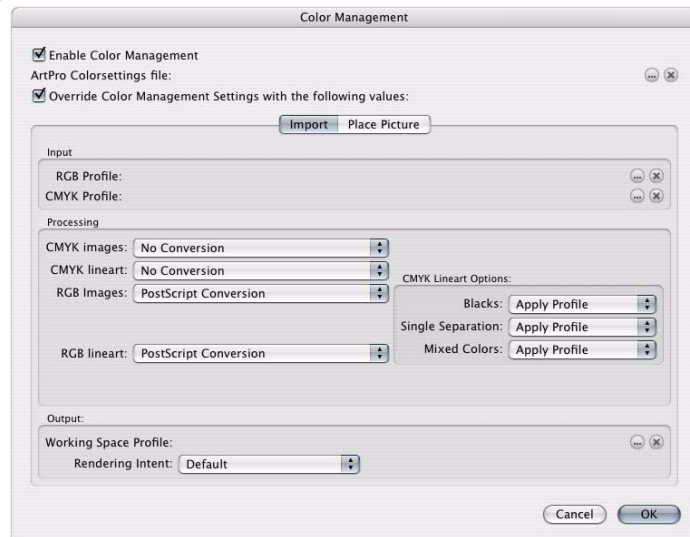
• Input:
On input, a *color profile* can be selected for RGB and for CMYK. This profile will be referred to as default profile.

• Processing:
The Processing part is divided into 4 parts: CMYK Images, CMYK lineart, RGB images and RGB lineart. For each of these, the user can define how ArtPro should process the colors.
For CMYK Images and lineart, there are 4 options:

No conversion: the CMYK colors are left unchanged.

Use Default Profile makes ArtPro to use the default profile.

Use Embedded Profile means an embedded profile will be used. If no embedded profile is found, no conversion is done.

Use Embedded or Default Profile means the embedded profile will be used when present, otherwise the default profile is used.

For RGB images and lineart, "no conversion" is not available. An option specific for RGB is *Use PostScript Conversion*: the conversion information stored in the PostScript File should be used. The *Use Default Profile* and *Use Embedded or Default Profile* options as for CMYK are also available.

• CMYK Lineart:

In this section, specific settings can be made on how to treat CMYK lineart. The settings can be made for 3 kinds of lineart: *Blacks* (colors only containing black or containing 100% black, regardless of the other separations), *Single Separation* (colors that consist of only one separation) or *Mixed Colors* (colors consisting of more than one separation). For each of these, you can apply the profile, preserve solids (leave 100% values unchanged), or preserve all (leave everything unchanged).

• Place Picture Tab.
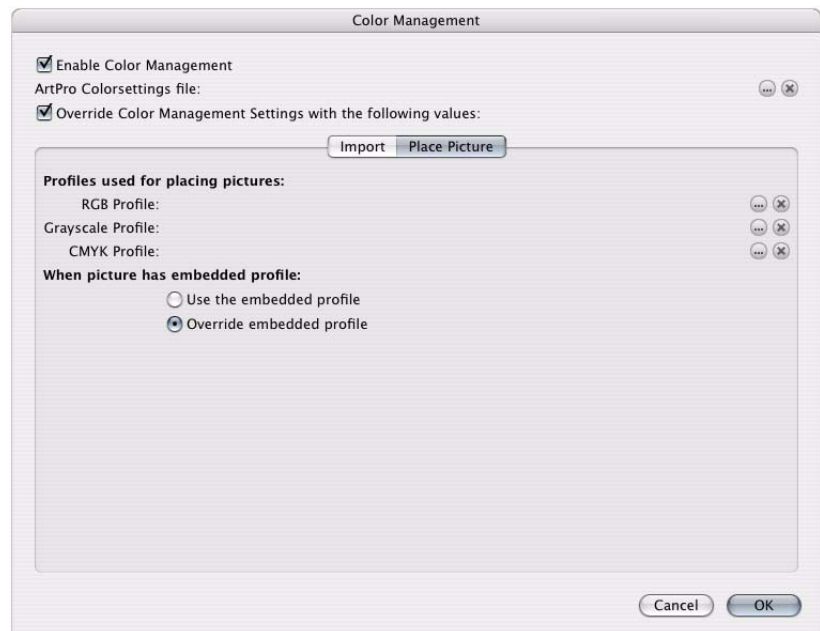
These settings are used each time a picture is "placed" in an ArtPro document during the process of import. This can be a picture linked through OPI, when OPI replacement is used, or a CMYK picture that is "placed" in the file after having been extracted from the document in which it was embedded.

Note that when an image is extracted from a file during import, it is ALWAYS converted to CMYK, either by use of a profile, or when no profiles have been set with a default conversion. So if images have been embedded in a PS or PDF file they will first go through the profile as described in the Import PS tab (either RGB or CMYK or the embedded profiles), and then through the profile as set for CMYK in this Place Picture Tab.

As an example, an embedded RGB picture would already have been converted to CMYK through the Import PS settings, hence if a CMYK profile was defined in the Place Picture tab, it would also be used for that converted picture, which may not be advisable in the workflow. Equally an embedded CMYK picture will equally go

through the two profiles if CMYK profiles would have been set for the Import PS tab and the Place Picture Tab.

As already indicated, even if no profiles at all would be set in the Import PS tab, the system would in any case use a default conversion for RGB to CMYK (provided there were no embedded profiles), hence for embedded RGB images the CMYK profile in Place Picture would be used instead of the RGB profile of course! Hence the RGB profile in the Place Picture tab is only used for RGB images which are not embedded, which is the case with OPI replacement. The CMYK profile will equally be used for CMYK images which are placed through OPI, provided the Override embedded profile option has been selected.

If OPI is used, one can select to use the embedded profile for the images on disk, or override the embedded profiles with the settings in the Place Picture Tab.

In any case, it is advisable to only use the Place Picture settings for Import with OPI replacement, and use the settings from the Import PS tab for images which are embedded in the file, provided they have no embedded profiles. When "Placing" a picture through OPI links, one can choose to override the embedded profile, this is however not the case when pictures are embedded in the PS or PDF file, then the embedded profiles are ALWAYS used, and only if there are no profiles in the file will the profiles as set in the Import PS tab be used.

• **Open ArtPro File Activity**

When opening an ArtPro file, one needs to define which color management settings will need to be used. Once again, these settings will be used throughout the rest of the workflow, unless when values are overridden in specific activities later on in the workflow. Clicking the color management settings button will allow to select the appropriate color settings file as defined in ArtPro.

When opening an ArtPro file with a different working space profile than defined in Nexus, the workflow will stop if this option is switched on.

Equally note that this functionality is available in EVERY activity which involves opening an ArtPro file, like ArtLink activities, Step and Repeat activities, etc....

- **Save ArtPro File Activity**
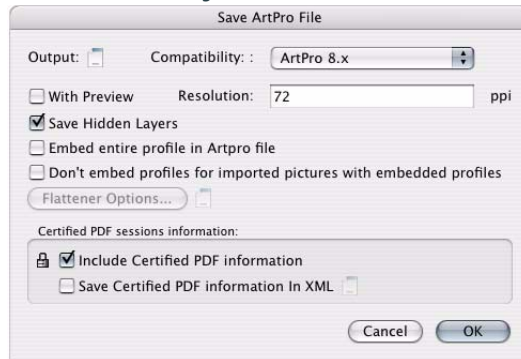
When saving an ArtPro file in a workflow, it is possible to embed the used profiles in the ArtPro file, to allow that ArtPro can open the file, and still perform correct color management with these profiles without having to install them on the system where the file is opened. In the case of linked images which have embedded profiles, it is possible to set the system not to include these profiles.

- **Print to File Activity**
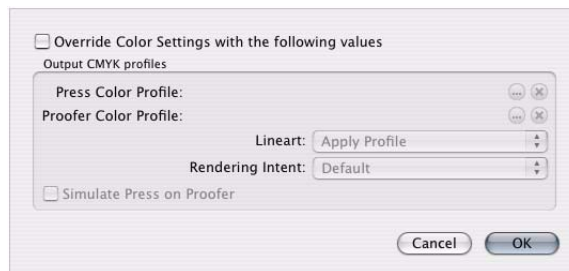
When using the Print to File activity for separation output or for color proofing output, the settings for color management will be used as defined in an earlier Importing activity or Open ArtPro file activity (or related activities like step and repeat)

Using the Color Management menu in the Print to File activity, it is possible to override the settings as defined in the color settings file which was previously selected in the workflow.

When overriding the settings, one can select the color profile which needs to be used to go on press (used when output separations), or the color profile to be used to go on proofer (used when output composite). For lineart, the choice can be made to apply the profile, preserve the solids, or leave all lineart unmodified, meaning the values as in the ArtPro file (which can be color managed during import) will be put in the PostScript file.

When the "Simulate Press on Proofer" option is selected, the color will go through the Press as well as the Proofer profile, to simulate the limitation of the gamut of the press on the proofer.

- Rendering Intent

  Each ICC color profile contains 4 different ways how color can be transformed through the colorspaces. The rendering intent setting will actually be determined by the purpose of the output.

  • default: use the default way as defined for the color management module

  • perceptual: this option tries to preserve the visual relationship between

  colors in a way that is perceived as natural to the human eye, although the color values themselves may change. This rendering intent is most suitable for photographic images

  • relative colorimetric: this rendering intent is identical to absolute colorimetric except for the following difference: relative colorimetric compares the white point of the source colorspace to that of the destination colorspace and shifts all the colors accordingly. Although the perceptual rendering intent as traditionally been the most common choice for photographic imagery, relative colorimetric can be a better choice for preserving color relationships without sacrificing color accuracy.

  • saturation: saturation aims to create vivid color at the expense of accurate color. It scales the source gamut to the destination gamut, but preserves relative saturation instead of hue. So when you scale through the used pictures dialog you can check which color profile is used for a selected picture the rendering intents have to be defined depending on the purpose of the output to a smaller color gamut, the hues may shift. This rendering intent is suitable for business graphics, where the exact relationship between colors is not as important as having bright saturated colors.

  • absolute colorimetric: leaves colors that fall inside the destination gamut unchanged. This rendering intent aims to maintain color accuracy at the expense of preserving relationships between colors. When translating to a smaller gamut, two colors that are different in the source space may be translated into the same color in the destination space. Absolute Colorimetric can be more accurate if the image's color profile contains correct white point information.

12.3.2 Nexus RIP activities

- **Interpret Activity**
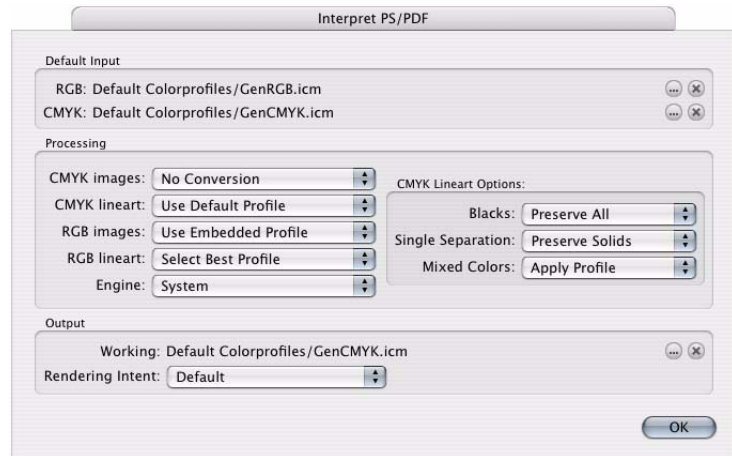
When interpreting PostScript or PDF in a NexusRIP workflow, one can equally determine to which ICC profiles need to be used for color management. In this case there are less settings since all image data is supposed to be embedded in the PostScript file or PDF file. Using the color profiles button in the Interpreter menu access is given to a new menu where one can set the profiles to be used.

The settings and options are exactly the same as for the Processor Import PS/PDF function, so we refer to that part for an elaborate explanation.

The rendering profile will equally be used for proofing PANTONE™ colors. In this case an Lab lookup table is used to determine what the appropriate CMYK color value is for proofing the PANTONE™, after which the rendering space profile will be used to convert it to CMYK. In a proofer step later on, an additional profile can be used to be applied for proofing output purposes, typically the ICC profile of the proofing device that is used.

When PostScript or PDF is interpreted by the system, it will use the defined profiles or embedded profiles to convert the colors (line art and images) to the rendering space (or generic CMYK space if no rendering space has been set), and these new colors will actually be present in the OPPO files to be worked with throughout the rest of the workflow.

When the PostScript has been generated by a NexusProcessor workflow where color management was applied, it is advisable not to set any color management in this Interpreter step since the data was already color managed by NexusProcessor. However, color profiles may then be set in proofer activities in NexusRIP to adapt color to the proofer. In this case one would set the Source

Profile the Press Profile used to output from NexusProcessor, and the Destination Profile to the appropriate ICC profile of the proofing device. Note that NexusProcessor does not actually tag any profiles to the PS file it generates, hence the Interpreter will not perform any automatic color management based on embedded profiles.

- **Assemble Proof Activity**

The Color Profiles button in the Proof activity allows to determine which profiles need to be used for proofing. In this case, a source profile and destination profile can be selected.

The source profile is typically set to the Rendering Profile as determined in the Interpreter activity, but can also be set to the Press profile as set by the Print to File activity in NexusProcessor, when files have been color managed through NexusProcessor instead.

The destination profile will typically be set to the ICC color profile of the proofer that has been selected.

- **Make PDF Proof Activity**

This is similar to the Make Proof Activity as above, but it is now equally possible to Tag the ICC profile to the PDF file which is generated, this will allow systems receiving this file to color manage the PDF further depending on the output which is required.

- **Make TIFF Proof**

This is again similar to the Make Proof activity as to the settings. Although when making separations, no color profiles can be applied in NexusRIP, it is however possible to use profiles when making TIFF separations for proofing purposes (e.g. to the Approval, etc....). Note however, that the Make TIFF Proof activity is CMYK only and limited in the resolutions settings it can output, e.g. 300dpi, 360dpi, 600dpi, 720dpi and 1440dpi, e.g. for plotter output.

Appendix 1 : User Keywords

Extra Template Keys offer the possibility to define "keys". These User Keys get a value (either default value, or from the Run File activity or from an XML file). When defining a workflow, these Keys can be used in any File Naming Template, which will then be replaced by the value for the file.

E.g.: In the User Keywords you define:
Key: "Cust"; Name: Customer

In the Run File you define for "Customer" the name of the Customer

In e.g. the File Copy activity, you can enter "Customer" in the File Name Template, which will be replaced by the actual name of the Customer.

- **Define User Keywords**

  Keywords can be defined using the User Keyword function in the Server menu. User Keywords are defined by a Key (a 4 char unique code), and a Name (by which it will be shown in the list). The Value entered here is the Default value, and will be used if no value is defined in the Run File or using XML
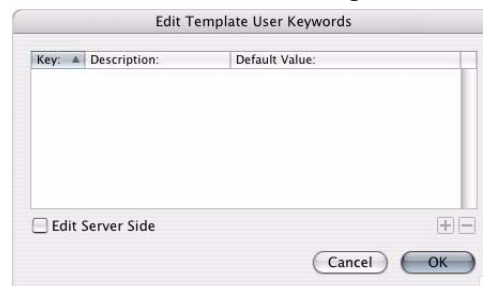
- *Edit Server Side*

  If the Edit Server Side option is on, the User Keywords are stored on the Nexus Server, and thus become available to all Nexus operators.

  When editing User Keywords on the server side, you can define XPath Xpressions.

- **Extra Template Keys in Run Job**

  All defined Keywords appear in the Run Job dialog, shown by their name. The Default value is shown, but can be modified here.

- **User Keywords and XML**

  See the NeXML TechNote (on the Download Center) for more details.

- **User Keywords and Shuttle**

  For jobs run through Shuttle, the User Keywords can be changed using the Update Keywords activity. For more information, see 5.19. Update Template Keywords on page 171 and Appendix 3 : Shuttle on page 450

- **File Naming Template**

  In the File Naming Template, under the Available Keys, you see the user defined keywords. By entering them in the Key Sequence, the values of the Keywords can be entered in the file names.

Appendix 2 : MIS Integration

2.1. MIS Integration Enabled

In the GUI tab of the Preferences, you can switch MIS Integration on or off.
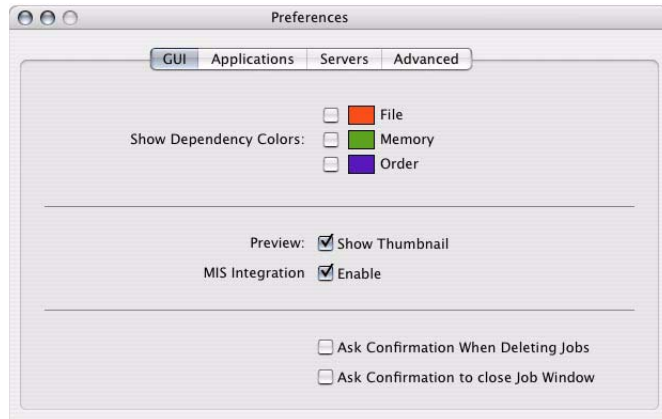
2.2. JMFServiceProvider

The JMFServiceProvider is the module that is in charge of managing the communication between Nexus and the MIS. It handles both sending messages to and receiving messages from the MIS.

Configuring the module is done in NexusManager. Go to the Modules tab, select the JMFServiceProvider module, and click on 'Edit Defaults'.
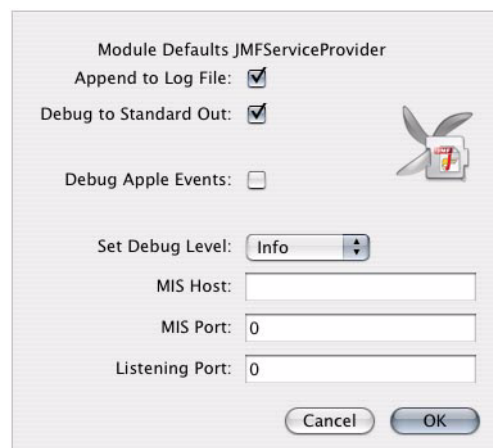
Three settings should be filled in. MIS Host is the IP or the fully quantified name of the MIS server should be entered, MIS Port is the port number the MIS server is listening on. The Local Port specifies the port the JMFServiceProvider should be listening on for messages originating from the MIS.

2.3. Running a MIS initiated job

As the MIS serves administration purposes, it does not know anything about what files are linked to what job. Therefore, as an operator starts a prepress job in Nexus, he should define what MIS job it concerns.

An MIS job is uniquely identified by means of a JobID, assigned by the MIS. Additionally, every job consists of a number of parts (e.g. a cover), each identified by a JobPartID. The combination of a JobID and a JobPartID uniquely identifies a prepress job.

The JMFServiceProvider holds a list of all open jobs that are ready to be pre-pressed.

Whenever the MIS creates a new job, it sends out a message notifying the JMFServiceProvider of the new job, allowing it to updates its internal list. To make sure all messages sent from the MIS are received, the JMFServiceProvider should permanently be active.

These JDF messages sent by the MIS contain JDF information, that even can contain NeXML parameters, controlling activities throughout the workflow.

To run a file / job, you can either use the Run File dialog, or start from the JDF Editor.

2.3.1 Run File

The Run File dialog gets the list of open jobs from the JMFService-Provider and shows them on screen. The operator simply selects the appropriate JobID and JobPartID and runs the job.
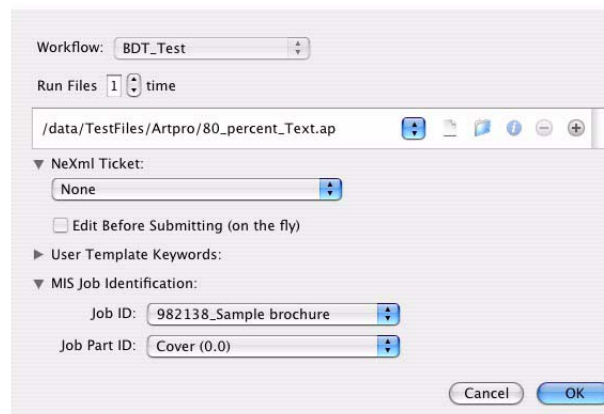
2.3.2 Using the JDF Editor

The JDF Editor allows to show the JDF files from jobs published by the MIS system and picked up by the JDFServiceProvidor.

All available information (job parts, job identification,...) will be parsed from the JDF and shown.

The Input files assigned to Job Parts, are shown in the Input Files tab. These can be assigned from the MIS system (in case the MIS system knows the file names to be used), or can be set in the JDF Editor, using the Browse, Add and Delete buttons.

NeXML Parameters can also be sent from the MIS system, or can be added to the JDF in the NeXML Parameters tab.

If the JDF Editor is closed, changes made to the JDF can be saved, changing the JDF file on the Server.

By clicking the "Submit" button, you can submit the selected job or job part to a workflow, and all its MIS identification will be sent along, for use further in the workflow.

2.4. JMF Signal Activity

Communicating back to the MIS is done by adding JMF Signal activities to the workflow.

The activity can send 3 types of signals, Proof approvals, Plate approvals and Audits.

2.4.1 Work Type

The work type indicates what kind of work is done.

• Original work: standard work that was originally planned for the job

• Altered work: work done to accommodate change made to the job at the request of the customer

• Rework: work done due to unforeseen problem with original work (bad plate, resource damaged, etc.)

2.4.2 Work Description

The work description defines the type of work in more detail. Possible values include:

• CustomerRequest: the customer requested change(s) to the job.

• InternalChange: change was made for production efficiency or other internal reason

• ResourceDamaged: resource needs to be created again to account for a damaged resource (damaged plate etc.)

• EquipmentMalfunction: equipment used to produce the resource malfunctioned, resource must be created again

• UserError: incorrect operation of equipment or incorrect creation of resource requires creating the resource again

• …

2.4.3 Proof Approval

A proof approval has one additional setting, the proof type. It indicates whether the proof represents a page or an imposition.
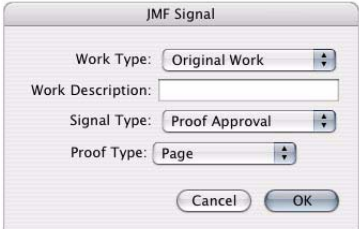
2.4.4 Plate Approval

For a plate approval, the user has to specify the material used. The MIS uses it to calculate costs and so forth. The material name should be known to the MIS (either by using predefined material names known to the MIS or by providing mappings that convert Nexus materials to MIS materials).
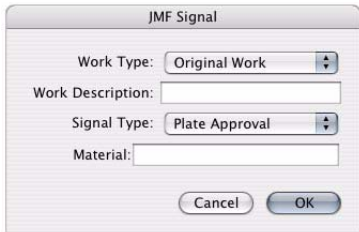
2.4.5 Audit

For Audit, no additional settings need to be made. It is meant to send a JDF file (containing information on start and end times of all activities, etc.) to the MIS system.

Therefor, the JMF Signal (Audit) activity should follow the JDF Export activity, with a file dependency to it.
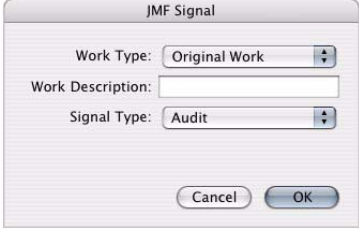
Appendix 3 : Shuttle

Shuttle Integration in ArtPro and Nexus allows the operator to initiate job processing and do (simple) job monitoring from his own workstation, from within ArtPro, Shuttle Stand Alone, Neo or Illustrator (using the Shuttle Plugin).

All information on how setting up and using Shuttle in these applications can be found in the Shuttle manual and the ArtPro documentation.

3.1. Setting up Nexus for Shuttle

3.1.1 Soap Server

The most important part of Shuttle Integration in Nexus, is the Soap Server module, which can be found in the Modules list.
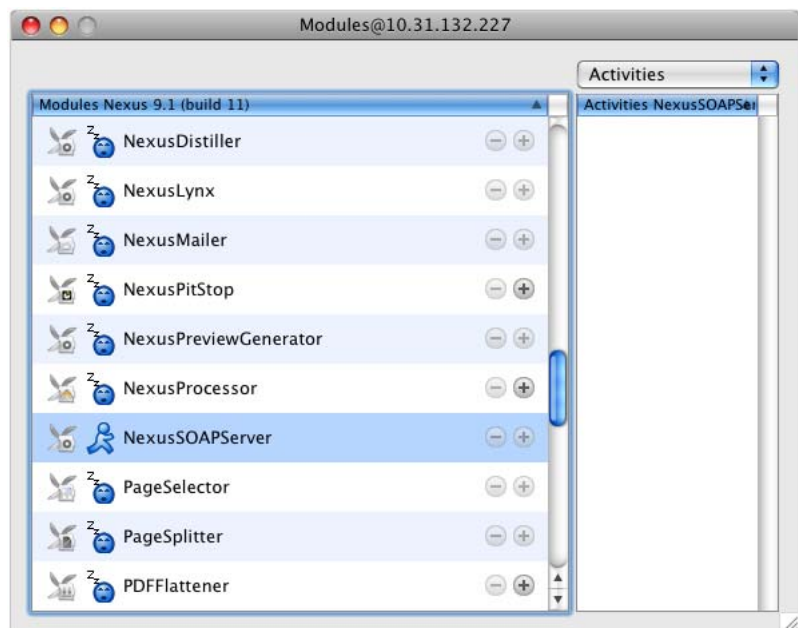
1. Open the Modules window

2. Double-click the NexusSoapServer module
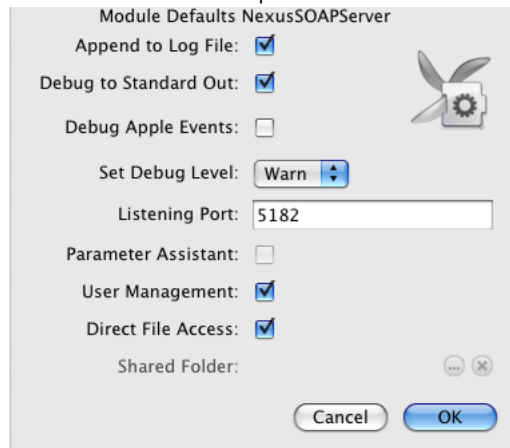
3. Enter a Listening Port. The Listening Port should be an open port, so the firewall needs to allow connection. By default the NexusSoapServer module is running, using the 5182 port. Entering "0" will turn the NexusSoapServer off and the module will automatically quit.

4. Choose the appropriate settings for your workflow:

• If you want to open files directly in ArtPro, switch on "Direct File Access" (by default enabled). Without Direct File Access, the files will be copied to a Shared Folder. This is a temporary folder that has to be accessible from the workstation.

• If you want to use the same user management in Shuttle as defined in Nexus Manager, switch on Enable User Management (by default enabled). In that case, users will only see workflow queues in the Shuttle if they can see the workflows in Nexus Manager. Therefore, the user name in Shuttle and the login for Nexus Manager should be the same. Changes made to the access rights in Nexus Manager are updated in Shuttle every hour. If needed earlier, the SOAP Server module should be restarted.

• If you want Public Parameters to be stored when submitting a job, enable the Parameter Assistant. In that case, when submitting the same file again, you get the option to use the same parameters. A connection to an SQL Librarian is needed for this, as these settings are stored in the Librarian database.
More information about the Parameters assistant can be found in the Shuttle documentation.

5. If Direct File Access is disabled, define the Shared Folder. This folder must be accessible for the user (i.e. it must be mounted) to open files over Shuttle.

3.2. Setting up a workflow for Shuttle

3.2.1 Hot folders

There are a number of requirements to allow submitting to workflows using Shuttle:

- The workflow is set up with a hot folder
- The hot folder needs to be accessible from the user side (i.e. the volume must be mounted). If the hot folder is not mounted on the workstation, Shuttle will try to mount the share automatically
- In the Monitor window, the hot folder needs to be Shuttle enabled: see 2.12.6 Shuttle on page 71.

3.2.2 Public Parameters

By using NeXML in the hot folder, it is possible to define Public Parameters. These Public Parameters contain settings the user will be prompted for, upon submitting a job to Nexus, using Shuttle.

Public Parameters are defined through NeXML. Currently users need to save activity parameters to a NeXML file and edit it with NexusManager's NeXML editor or any text editor. Nexus 9.5 allows users to define Public Parameters in a more user friendly way, using context sensitive menus to add or remove Public Parameters and generate the NeXML file for those public parameters only.

Go to the workflow parameter and open the contextual menu by clicking next to the parameter and request to make it public
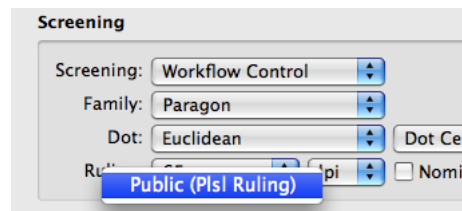
Go to worflow and show all Public Parameters to manage them, or save them to a NeXML file.
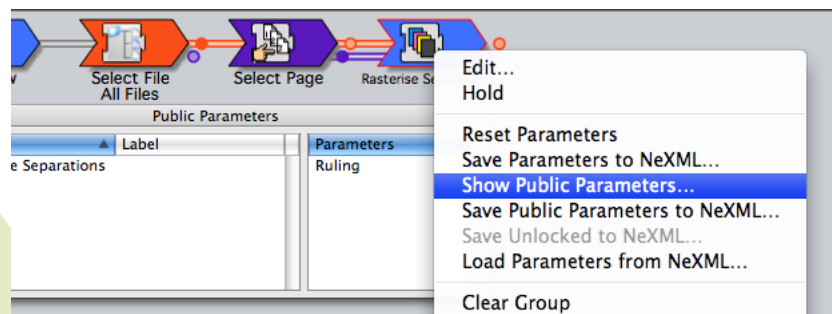
When a workflow hotfolder already exists, Public Parameters can be easily added to the hotfolder.

1. Make a workflow with hotfolder input. Or add a hotfolder to an existing workflow. (see 2.12.8 Hot Folder on page 72)

2. Go to the hotfolder settings

3. Edit the hotfolder

4. Press Upload Public Parameters button. It will add a file in the hotfolder with name "PublicParameters.xml" that contains all Public Parameters defined in the workflow.

Note: If the hotfolder already contains a NeXML file, the Upload Public Parameters will overwrite the existing NeXML file.

Appendix 4 : Decorate Editor

With the Decorate Editor, you can place marks (slug lines, reg marks, barcodes...) on a template.

You can then use this template in the Decorate activity to place those marks on your jobs (see 10.6. PDF Decorate on page 379).

4.1. Decorate Editor Preferences

Click on the Decorate Editor Menu and then on "Preferences" to open the Preferences dialog.

4.1.1 Length Unit

Select the unit to use for marks' distances in your decomark file:

- "Millimeter",
- "Inch",
- "Point".

4.2. Creating a Decomark File

Click on the File menu and then on "New" to create a new decomark file.

You will get a warning that the Decomark needs to be saved to get a preview.

4.2.1 Saving the Decomark File

You must save your decomark file next to a "MarksFiles" folder containing your marks files.

It is recommended to save all your Decomarks file in a folder, e.g. "Decomark", in which you place the "MarksFiles" folder containing the individual marks.

Save your decomark file in this folder using File/Save as...

4.3. Managing Marks in a Decomark File

Click on the Window menu and then on "Show Settings For Entire Document". It opens the following dialog:

4.3.1 Adding a Mark

Click on the Add button to add a mark to the decomark file.

4.3.2 Cloning a Mark   Select a mark and click on the Clone button to duplicate it.

4.3.3 Deleting a Mark   Select a mark and click on the Delete button to delete it.

4.3.4 Marks Clippings   The Clipping For All Marks parameter group allows you to define
                                  how your marks interact with page boxes.

- **Clip All Marks Using**
  - "Media Box": this clips away all marks parts outside of/on the
    Media Box.
  - "Art Box": this clips away all marks parts outside of/on the Art
    Box.
  - "Crop Box": this clips away all marks parts outside of/on the
    Crop Box.
  - "Bleed Box": this clips away all marks parts outside of/on the
    Bleed Box.
  - "Trim Box": this clips away all marks parts outside of/on the
    Trim Box.
  - "Don't Clip, Extend The Media Box" (default): this extends the
    Media Box so it includes all marks completely.

- **Top**
  The Top, Bottom, Left and Right parameters are available when
  you select a page box in the Clip All Marks Using parameter. Use
  them when you want a margin between the end of the marks and
  your selected page box.
  Enter the top margin between your marks and the selected page
  box.

- **Bottom**
  Enter the bottom margin between your marks and the selected
  page box.

- **Left**
  Enter the left margin between your marks and the selected page
  box.

- **Right**
  Enter the right margin between your marks and the selected page
  box.

  Once you added marks to your decomark file, you should define
  them.

4.4. Defining Marks

Select the Mark to define in the Settings For Entire Document dialog.

Click on the Window menu and then on "Show Mark Details". It opens the following dialog:

4.4.1 Mark Name

Enter the name to give to your mark.

4.4.2 Type

Select the mark type:

- "Slug Lines",
- "Barcodes",
- "Placed Objects",
- "Cut Marks",
- "Bleed Marks",
- "Reg Marks".

Note:

The mark type you select affects which parameters are displayed below in the dialog. See:

4.5. Parameters Specific to Slug Lines on page 458
4.6. Parameters Specific to Barcodes on page 461,
4.7. Parameters Specific to Placed Objects on page 463,
4.8. Parameters Specific to Cut Marks on page 465,
4.9. Parameters Specific to Bleed Marks on page 465,
4.10. Parameters Specific to Reg Marks on page 465.

4.4.3 Offset

Enter the margin ("offset") you want to put between your mark and your selected page box (see 4.4.10 Page Box on page 458).

- Leave the default nil offset (see left picture below), to keep the mark just outside the page box.
- Enter a positive offset (centre picture) to move the mark outwards (away from the page box).
- Enter a negative offset (right picture) to move the mark inwards (towards the inside of the page box).

Note:

This parameter is not available if you selected "Bleed Marks" in the Type parameter.

4.4.4 Move

The move parameter allows you to move marks' positions along the page box, to cater for special cases.

- "Absolute": enter the distance you want to move the mark(s) by, in the unit you defined in the Preferences (see 4.1. Decorate Editor Preferences on page 454).
- "Relative": enter the percentage you want to move the mark(s) by.

The move you define is applied to the marks selected in the Mark Locations (see 4.4.5 Mark Locations on page 457).

- Corner marks: a positive move will shift these marks outwards (as shown on the right).
  A negative move will shift them in the opposite direction.
- Right/left/top/bottom marks: a positive move will shift them to-wards the centre as shown (e.g. the left marks will move to the right, and the right marks will move to the left).
  A negative move will shift them away from the center.
- Center marks (on the page box sides): a positive move will shift the top and bottom marks to the right, and the left and right marks to the bottom (as shown).
  A negative move will shift them in the opposite directions.
- Middle mark (in the page box): a positive move will shift it to the right.
  A negative move will shift it to the left.

4.4.5 Mark Locations

Use the square figure in the dialog to define where to place your marks.

For example, click on the top-right corner square to place a mark in the top right corner, outside the page box you selected (see 4.4.10 Page Box on page 458).

4.4.6 Reg Mark Locations

Click on this button to place marks at the predefined locations for Reg Marks. These marks locations are at the corners and middle of the selected page box (see figure on the right).

Note:

Reg Marks are placed with an offset of 1mm.

4.4.7 Cut Mark Locations

Click on this button to place marks at the predefined locations for Cut Marks. These marks locations are at the corners of the selected page box (see figure on the right).

Note:

Cut Marks are placed on the Trim Box, with an offset of 2mm.

4.4.8 Bleed Mark Locations   Click on this button to place marks at the predefined locations for Bleed Marks. These marks locations are at the corners of the selected page box (see figure on the right).

Note: Bleed Marks are placed on the Bleed Box, with an offset of 0mm.

4.4.9 Deselect All   Click on this button to deselect all the squares (e.g. if you clicked on Reg, Cut or Bleed Mark Locations). This allows you to select a custom position for your marks (e.g. only a color bar at the center of the page box).

4.4.10 Page Box   Select the page box you want to use as a reference for placing marks:

- "Media Box",
- "Art Box",
- "Crop Box",
- "Bleed Box",
- "Trim Box".

4.4.11 Keep Mark Out Of   Use this parameter if you want to keep your marks outside a particular page box. You can choose:

- "None",
- "Art Box",
- "Crop Box",
- "Bleed Box",
- "Trim Box".

Note: The parts of the marks that are inside that page box will be clipped.

4.5. Parameters Specific to Slug Lines

4.5.1 Add   The Marks Details dialog contains a Naming Template, available for slug lines text and barcode numbers. Use the Add button to add a piece of information to the text/number.

You can find an explanation for all the standard naming elements in the Naming Template chapter (see 3.6. File Naming Template on page 132).

4.5.2 Delete

To delete a piece of information from the barcode number, select it in the Naming Template and click on the Delete button.

4.5.3 Slug Line Parameters

- **Separation Name**

  This adds the name of the separation used for printing the slug line in the slug line text.

- **Short Separation Name**

  This adds the short name of the separation used for printing the slug line in the slug line text..

- **Custom Text**

  This allows you to add Custom Text to your slug lines when running the job through the Decorate Activity. The Custom Text is defined in the Decorate activity.

- **Job Width / Job Height**

  This allows you to add the width/height of one of the job's Page Boxes. If you use this element and the job doesn't have the Page Box you specify, the job will fail.

- **Workflow Parameter**

  You can add workflow parameters (e.g. trapping distance, screen ruling, etc) to your slug lines. For more information, see 4.5.4 Adding Workflow parameters on page 460.

- **JDF Parameter**

  This item adds information about the job. Choose either "Job ID", "Job Part ID" or "Job Owner".

- **Job Parameter**

  Use this item to add the value of a job parameter to the slug line. Use an XPath expression to retrieve the parameter value from the JDF ticket.

  For more information on XPath and JDF tickets, see Appendix 2 : MIS Integration on page 446.

- **File Parameter**

  To add part of the file metadata to the barcode. Use a metadata keyword (e.g. "Creator") to add metadata information.

- **If Exists(**

  use this if you're not sure if the parameter you want to use is defined. This will add the parameter to the slugline if it is defined, and will not send the job to the error output if the parameter isn't defined.You can use it with Workflow Parameters, JDF Parameters, Job Parameters and File Parameters.

  You need to use a closing bracket ")" after this element.

- **If Not Exists(**

  use this to add an element to the slug line (e.g. fixed text) if a certain parameter is not defined. You can use it with Workflow Parameters, JDF Parameters, Job Parameters and File Parameters.

  In the example below, if the Job ID is not defined, the slugline will contain the text "no ID".

  ```
  If Not Exists(    JDF Parameter    Job ID
  Fixed Text        No ID
  )
  ```

  You need to use a closing bracket ")" after this element.

4.5.4 Adding Workflow parameters

Note: Workflow parameters in Slug lines will always be placed in registration color.

- **Defining Workflow Parameters**

  A Workflow Parameter is defined by two strings: the first is the label of the activity from which the parameter should be retrieved. The second is the 4 character key of the specific parameter.

  The best way to find this 4 character key, is to generate a NeXML file from the specific activity (or the complete workflow) and look up the "Key" by opening the XML file in a text editor.

Note: In order to retrieve a parameter from an activity, this activity must have a label !

- **Applying Workflow Parameters in a workflow**

  For the Decorate activity to retrieve the Workflow Parameter from another activity in the workflow, it is necessary that the part of the workflow containing the activity, needs to be expanded at the moment that the Decorate activity is executed.

  Therefore it is advised to have a "Select Page" activity in front of the Decorate activity (as this will expand the rest of the workflow) and to keep the Decorate activity as far towards the end of the workflow as possible, so in most cases immediately in front of the Rasterize activity.

  This is also the reason why the Decorate activity can not retrieve parameters from Basic Rip activities following the Decorate activity, since the workflow will only be expanded when the job runs through the Interpreter, which will be after the Decorate activity.

Note:	Keep in mind that if you retry a job after changing workflow parameters, the workflow parameters in the slug lines will be updated only if the Decorate activity is retried as well.

4.6. Parameters Specific to Barcodes

4.6.1 Add

The Marks Details dialog contains a Naming Template, available for slug lines text and barcode numbers. Use the Add button to add a piece of information to the text/number.

You can find an explanation for all the standard naming elements in the Naming Template chapter (see 3.6. File Naming Template on page 132).

- "JDF Parameter": this item adds information about the job. Choose either "Job ID", "Job Part ID" or "Job Owner".
- "File Parameter": use this item to add part of the file metadata to the barcode. Use a metadata keyword (e.g. "Creator") to add metadata information.

4.6.2 Delete

To delete a piece of information from the barcode number, select it in the Naming Template and click on the Delete button.

4.6.3 Select Separation

Select the separation to use for the barcodes:

- "Darkest": this prints the barcodes in the darkest job separation (this can be a process or a spot color).

Note:	If Black is present in the job it will be used as the darkest separation (regardless of the darkness of spot colors).

- "By Name": this prints the barcodes in the separation you define in the Separation Name parameter (see below).
- "By Index": this prints the barcodes in the separation number you define in the Separation Index parameter (see below).

4.6.4 Separation Name

This parameter is available when you select "By Name" in the Select Separation parameter.

Enter the name of the separation to use for printing barcodes.

4.6.5 Separation Index

This parameter is available when you select "By Index" in the Select Separation parameter.

Enter the number of the separation to use for printing barcodes (e.g. "1" is the 1st separation found in the job).

4.6.6 Barcode Type

Select the type of barcode you want to use:

- "2of5": select this if you want to use an "Interleaved 2 of 5" barcode type without a check digit (ITF 2 of 5 barcodes).
- "2of5 With Check": select this if you want to use an "Interleaved 2 of 5" barcode type with a check digit (ITF-14 or ITF-16 barcodes).
  See 4.6.10 Code Contains Check Digit on page 462.
- "3of9": select this if you want to use a "Code 3 of 9" barcode type (CIP 39, Code 32, Code 39 or PZN barcodes).

4.6.7 Magnification

Enter the barcodes' magnification. The magnification is a zoom factor to apply to barcodes width (the height doesn't change). The default magnification is 1 (meaning 100%).

Note: To comply with GS1 standards, EAN/UPC bar codes must have a magnification between 0.8 (80%) and 2.0 (200%).

4.6.8 Bar Height

Enter the height to give barcodes that don't have a standard height. The default is 25.40 mm.

Note: Magnification doesn't affect barcodes height. It is only applied to barcode width.

4.6.9 Bar Width Reduction

Enter a Bar Width Reduction value if you want to compensate for dot gain on your press.

The reduction is split between both sides of the bar (e.g. a Bar Width Reduction of 1 mm will reduce bars by 0.5 mm each side).

4.6.10 Code Contains Check Digit

This parameter is available if you selected "2of5 With Check" in the Barcode Type parameter.

Switch it on to include a check digit in the barcode.

4.6.11 Generate Human Readable Text

Switch this parameter on if you want to generate numbers under the barcodes.

4.7. Parameters Specific to Placed Objects

Note: The preview window shows the bounding boxes of placed objects, not the objects themselves.

4.7.1 Cell Properties This parameter group allows you to define the mark file (.pdf) to place, and how to place it.

- *File Name*

Select the name of the desired mark file from the drop-down menu.

Note: The drop-down menu contains all mark files saved in the "Marks-Files" folder beside where you saved your decomark file (see 4.2. Creating a Decomark File on page 454).

Note: If you added files to the MarksFile folder and they don't appear in the File Name drop-down menu straightaway, use the "Refresh Marks File List" function in the File Menu.

- *Mode*

Use this parameter to define which separations you want the placed marks file in.

- "Repeat For All Inks": this repeats the marks file for all of the job separations.

Note: If the marks file contains separations named "DecorateSeparation" or "StepAndRepeatSeparation", they will be replaced by the "current" separation in each repetition.

- "Subset For Inks": this repeats the marks file for some of the job separations (e.g. all job separations except technical and die cutting ones).

Note: If the marks file contains separations named "DecorateSeparation X" (where X is a number equal to or above 1), they will be replaced by the X'th separation in the job. When X is higher than the number of inks in the job, this part of the mark is left out of the result.

- "As Is": this only places the marks file once, in the separation it was created in (you can use this for logos for example).

Note: If you want to print a mark that uses all separations (e.g. registration marks), you can create a mark filled with the Spot Color "All" ("Registration" in Adobe Illustrator) and place it "As Is".

- *Repeat Direction*

This parameter is available when you select "Repeat For All Inks" in the Mode parameter.

It allows you to change the direction your marks are repeated. You can choose:

- "Standard": this repeats your marks in the default repeat direction.

Note: The default repeat direction depends on the locations you place the marks on:
If you place your marks on the top or bottom of the page box, they are repeated in the horizontal direction.
If you place them on the right or left of the page box, they are repeated in the vertical direction.

- "Vertical": this repeats your marks vertically.
- "Horizontal": this repeats your marks horizontally.
- "In Place": this repeats your marks on top of each other.
- *Rotate Clockwise*

You can choose to rotate the marks file by 0°, 90°, 180° or 270°.

4.7.2 Repeat Mode

This parameter defines how to place the marks.

- "Single Repeat": this will only place the mark once.
- "Multi Repeat": this will place the mark several times on the page box (as many times as is possible without clipping the mark).
- "Single Stretch": this will stretch the single placed mark to the height or width of the page box.
- "Multi Stretch": this will stretch the placed marks to the height or width of the page box.
- "Extended Repeat": this will place the mark as many times as possible on the page box, and clip the last mark if necessary.

4.7.3 Truncate

Use this parameter to truncate the end of a repetition of marks or of a stretched mark. Enter a positive value to truncate the mark, and a negative value to extend or repeat the mark.

This parameter is not available if you selected "Single Repeat" in the Repeat Mode parameter.

4.8. Parameters Specific to Cut Marks

"Cut Marks" marks types have no specific parameters.

Note: The default value for the Offset parameter is 2.00 mm for Cut Marks.

4.9. Parameters Specific to Bleed Marks

"Bleed Marks" marks types have no specific parameters.

Note: By default, the page box used for Bleed marks is the Bleed Box.

4.10. Parameters Specific to Reg Marks

"Reg Marks" marks types have no specific parameters.

Note: The default value for the Offset parameter is 1.00 mm for Reg Marks.

4.11. Text Mappings

Text Mappings allow you to replace information in placed marks with short codes, so it takes less space on your design.

For example, you can use text mappings in color bar separation names for proofing (to avoid names stacking on top of each other).

4.11.1 Default Text Mappings

The Decorate Editor contains the following default Text Mappings:
- "<Nx>" (where x is a number): will add the "x"th separation name.
- "<Sx>" (where x is a number): will add the "x"th separation short name (e.g. "C" for Cyan).

- "<NX>": will add the name of the "current" separation.
- "<SX>": will add the short name of the "current" separation.

4.11.2 Create Text Mappings

You can also create your own Text Mappings. To do this:

1. In the Decorate Editor's Window menu, click on "Show Text Mappings". This opens the Text Mappings dialog.
2. Click on the Add button.
3. Enter your chosen short code in the Key input field, without brackets.
   You can see the key is also displayed in the table.
4. You now need to enter an equivalent text for this short code (the text that will be printed instead of the short code).
   You do this in the Naming Template at the bottom of the dialog. Click on the "+" button to add a naming element.

   You can now see your completed Text Mapping in the table.

4.11.3 Import Text Mappings

You can import Text Mappings created by somebody else.

In the File Window menu, click on "Import Text Mappings".

This opens a Finder dialog: browse to and select the Text Mappings file (".decoKMap") you want to import.

4.11.4 Export Text Mappings

You can also export your Text Mappings.

In the File Window menu, click on "Export Text Mappings".

This opens a Finder dialog: save your Text Mappings file (".decoK-Map") in your chosen location.

4.12. View Options

Click on Window/Show View Options to display the View Options dialog.

This dialog enables you to adjust the preview in the preview window (e.g. to display the marks at page level or at imposition level).

However, it does not show an exact preview of the printed output.

4.12.1 Number of Inks

Enter the number of inks you want to preview your marks in. For example, enter your job's total separations number if you have density blocks repeated for all separations.

4.12.2 Media Box   Enter the width and height to give the Media Box.

4.12.3 Inset from Media Box   This parameter defines where to position the other page boxes inside the Media Box.

Enter the margin between the Media Box and the Art Box, Crop Box, Bleed Box and Trim Box. For example, if you enter 3.00 mm for the Art Box, it will be positioned 3.00 mm inside the Media Box.

4.12.4 Display All Boxes   Switch this parameter on to display all page boxes in the preview window.

4.12.5 Show   This parameter determines how the preview displays placed objects.

- "Placed Mark Objects": this displays the bounding box of each object in the placed mark.
- "Placed Mark Media Box": this displays the placed mark's media box.
- "Both": this displays both the bounding box of each object in the placed mark and the placed mark's media box.

4.13. Refresh Mark File List

Click on File/Refresh Mark File List to refresh the drop-down menu containing all the marks files you can use as Placed Objects. For more information see • File Name on page 463.

4.14. Tool Bar

Click on Window/Show Tool Bar to display the Tool Bar.

4.14.1 Select Tool   Use the Select Tool to select marks in the preview window. It selects all items for a specific mark (e.g. all the barcodes or slug lines).

Note: When you select a mark with the Select Tool, the Decorate Editor highlights this mark in the Settings For Entire Document dialog, and shows the mark's details in the Marks Details dialog.

4.14.2 Pan Tool   Use the Pan Tool to move around the preview window.

4.14.3 Zoom Tool   Use the Zoom Tool to zoom in and out of the preview window. Click on the preview window to zoom in. Hold Alt and click on the preview window to zoom out.

Appendix 5 : Runlist Editor

The RunJobList Editor is an application that can be found next to Nexus Manager, which allows to create a RunJobList. A RunJob-List is a file containing information on the individual files / pages that need to be (re)combined. The Join Pages activity (see 10.4. Join Pages on page 376) can take the pages information from the Run-JobList, and recombines the pages into one multipage document.

The File Menu contains options to create a New RunJobList, Open an existing RunJobList, Save, Save As or Close the open RunJob-List. After creating or opening a new RunList, you get the Main Window.
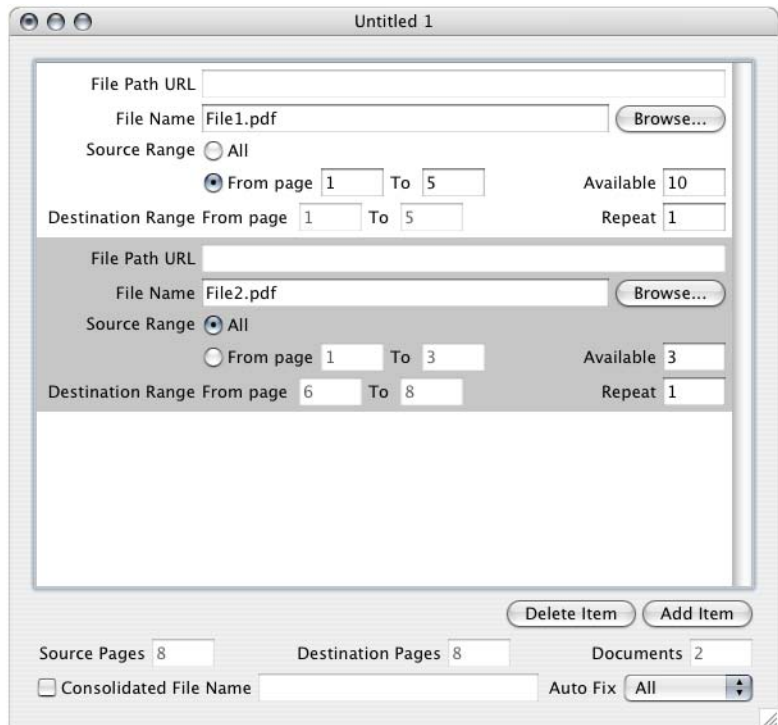
5.1. Add Files

You can add files by dragging and dropping files from the Finder onto the Main Window. It is possible to drop multiple files at once. Another way to add files, is to use the "Add item" button. The file can then be defined either by the Browse button, which will open a browse window, allowing you to select the appropriate file, or by en-

tering a filename. in the File Name field. This can be used e.g. if the final documents are not available yet. The Join Pages activity will in that case not be able to use "At Original Location", so the files need to be retrieved from a custom location.

5.2. File Info Block

For every file entry, a block of information is shown in the RunList.

- **File Path & File Name**

  The File Path URL is shown, and can only be changed by dropping a file or selecting the Browse button. This cannot be changed manually.

  The File Name can be changed, e.g. to define "empty" entries.

- **Source**

  The Available field is entered automatically if a file is selected. Otherwise it can be used to define the number of pages in the document.

  The Source Range defines what pages should be used from the selected document.

  The Repeat allows to enter the selected pages more than once.

- **Destination**

  The Destination Range allows to define where the pages should come in the final document.

  If the "Auto Fix" parameter is set to "All", the RunJobListEditor will automatically adjust Destination Range page numbers to the selected Source Range. If it is set to "Down", and you enter a page or document in between, only the following pages will be adjusted.

5.3. RunList info

The "Source Pages" and the "Destination Pages" fields at the bottom of the window give an indication on the number of pages in the source and the final document.

The Documents field shows from how many documents pages will be taken.

The Consolidated Filename field allows to define the name for the combined document.

5.4. Change Extension

The Change Extension function in the RunList Menu, allows to change the extension of File Names in the RunList. This can be used e.g. to create the RunList file based on original InDesign files, and then change the extension to PDF.

5.5. Auto Add Files

The Auto Add Files function can be found in the RunList Menu, or by its shortcut cmd - A.

The Auto Add Files function will create "empty" entries, one for every page as defined in the number of pages.

The File name will consist of the Prefix text, the Number, and the PostFix text.

E.g. if Prefix text is set to "Page" and "Postfix" is set to ".PDF", the Filenames will be Page01.PDF, Page02.PDF, Page03.PDF... Number format defines how many figures are used.

Appendix 6 : Kodak Recipe Manager

The Kodak Recipe Manager provides two basic operations: The editing of recipe files and the online monitoring of the Kodak Approval output device. The application is meant for users that are

familiar with the Kodak Approval Device and the concept of Donors and Recipes.

6.1. Editing Recipe Files

A *recipe* describes the mix of donors required to achieve the required colour on the Approval device.

Nexus provides default recipe files for the Pantone colors in a file named PantoneRecipes.txt.

You can use the Open menu item to open an existing recipe file, or you can create a new recipe file by using the New menu item.

In both cases, the Recipe window will open:
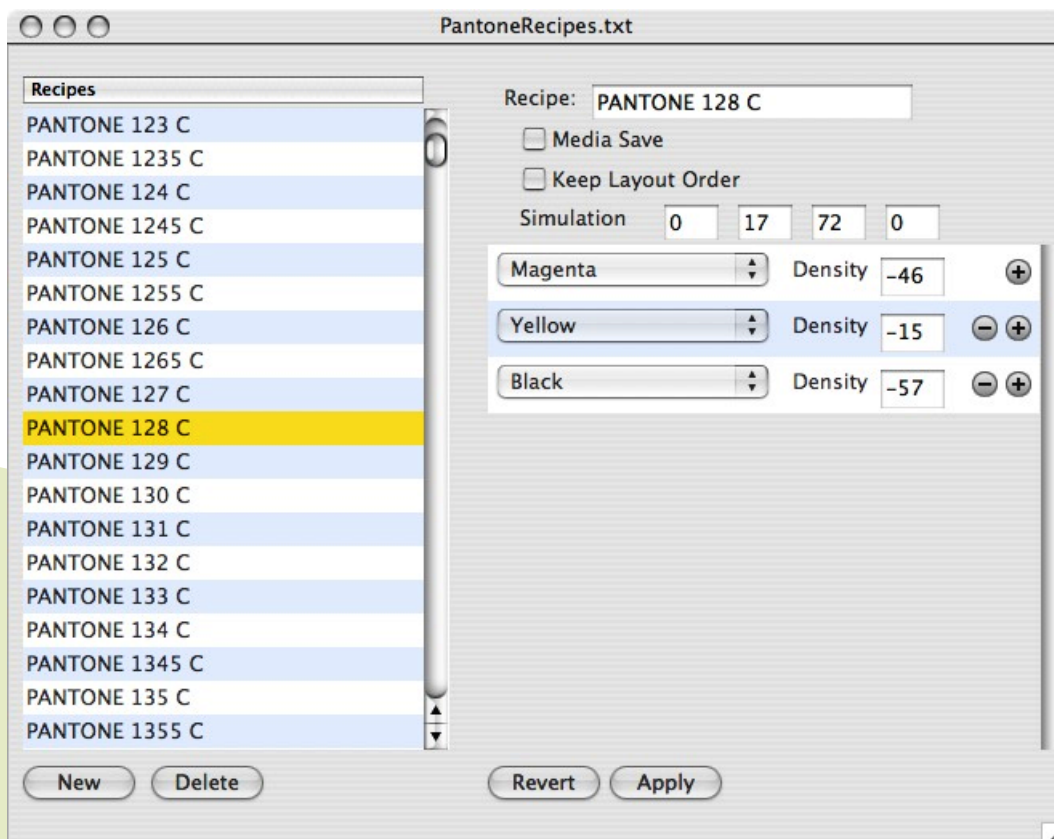
On the left of the screen you have the list of available recipes, with buttons to Add a new recipe or Delete an existing recipe.

If you select a recipe from the list or Add a new recipe the right side of the screen shows the attributes of the recipe which may then be edited.

- **Recipe**

  The recipe name

- **Media Save**

  Allow donor placement to be optimised for media save

- **Keep Layout Order**

  Preserve the recipe donor order when laying down this color

- **Simulation**

  The Simulation fields provide a way of simulating the recipe color on screen. For more information on how to use the Simulation values, we refer to the Kodak documentation.

- **Donor List**

  A list of one or more donors required to make up the recipe along with the corresponding density values. Use the '+' and '-' buttons to add or remove donors respectively. The donor popup provides a list of the possible donors that may be used in the recipe

- **Revert button**

  Discard any edits made to the recipe

- **Apply button**

  Apply any edits made to the recipe

- **Save / Save As**

  Use the Save or Save as menu items to save the recipe file

6.2. Kodak Approval Connection

6.2.1 Connection window

This feature allows the user to see the online state of the Approval device. Select the Open Connection... menu item to open the connection window:
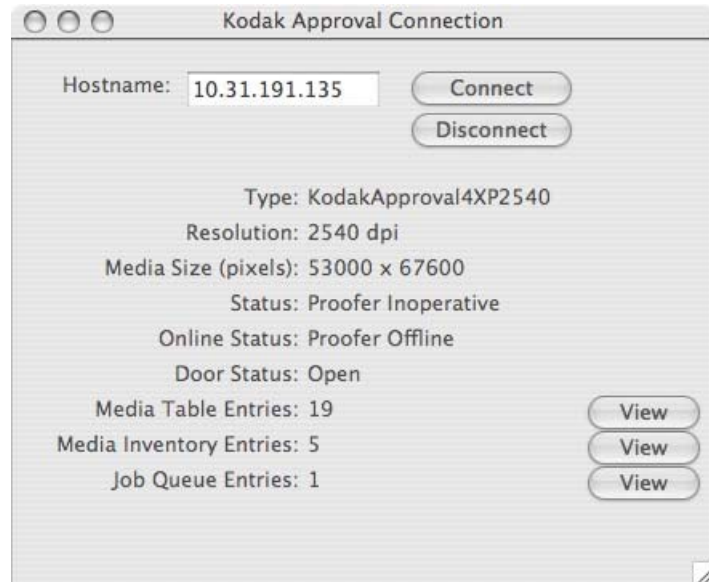
- **Host name**
  Host name or IP address of the Kodak Approval you wish to connect to

- **Connect**
  Click the Connect button to establish the connection

- **Disconnect**
  Click the Disconnect butto to disconnect from the Kodak Approval

- **Type**
  The Kodak Approval type

- **Resolution**
  The resolution of the Approval device

- **Media Size**
  The media size on the Approval device

- **Satus, Online Status & Door Status**
  The current status of the Approval device

6.2.2 Media Table Entries

If you click the View button you will get a window as shown below, showing all available donors. Checking a donor name makes it available in the donor popup when editing recipes.
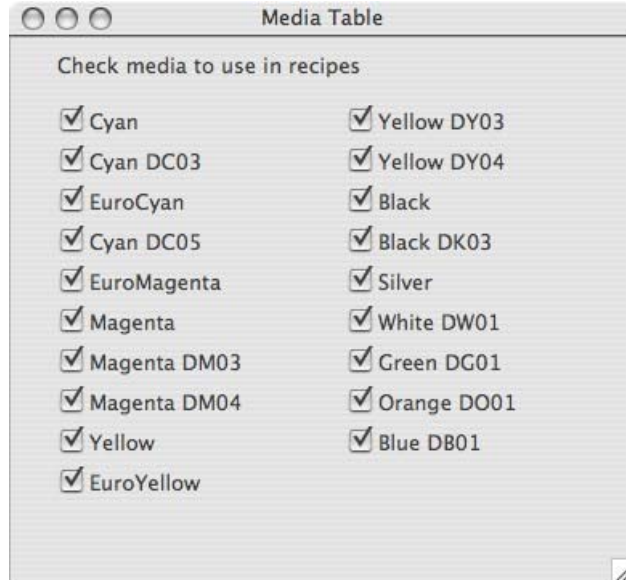
6.2.3 Media Inventory Entries

If you click the View button you will get a window as shown below, giving a list of the loaded donors.

6.2.4 Job Queue Entries

If you click the View button you will get a window as shown below, giving a list of the job queue on the Approval device.
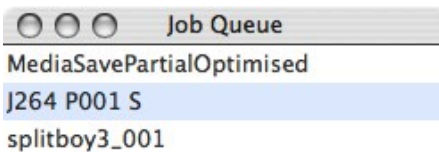
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