



CC Resampler

Bitmap resolution change and fan-out scaling

User Manual

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ControlCenter Resampler User Guide

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1 Introduction

CCresampler is a stand-alone hot-folder based high performance bitmap resample engine. CCresampler is capable of changing resolution and scaling 1-bit ripped bitmaps (TIFF).

The re-sampling engine uses moiré suppressing methods to kill artifacts usually generated by standard re-sampling (e.g. as in PhotoShop).

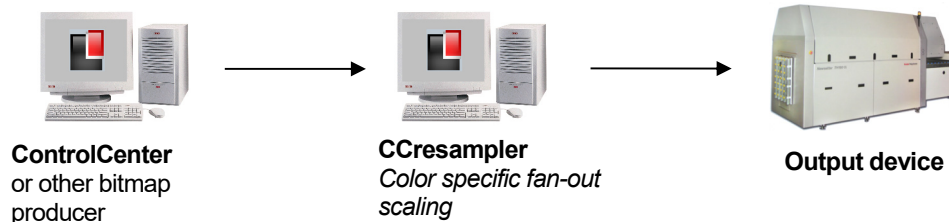
CCresampler also allows anamorphic scaling of existing bitmap (X/Y direction independently scaled). Combined with the color name detection, CCresampler can be used as a 'brute-force' fan-out compensator applying different scaling in one direction for each color.

Color name can be detected from the file name or from the *Imagedescription* TIFF tag (written by ControlCenter applications),

Because positions of visual bender marks are usually critical, CCresampler can keep areas unchanged when scaling for fan-out compensation.



Example of configuration for normalizing resolution of incoming bitmaps. CCresampler is capable of changing resolution up or down.

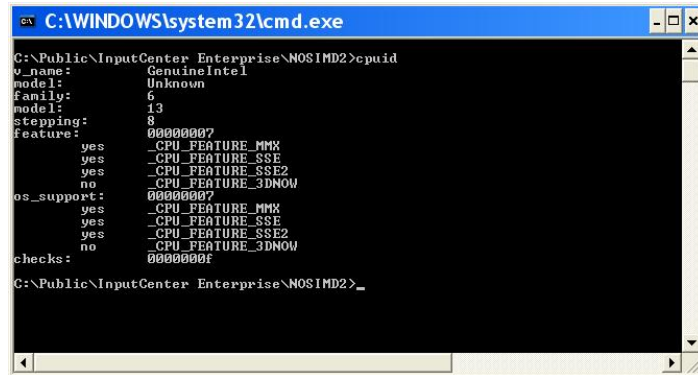


Example of configuration for fan-out compensation using Ccresampler as anamorphic scaling engine

CCresampler will auto-start its folder scans upon loading so that the application can be put in the Startup folder for automatic launch.

IMPORTANT NOTE: CCresampler utilizes the Pentium 4 SIMD2 (also called SSE2) instruction set. Older Pentiums (older than year 2001) may not have this instruction set.

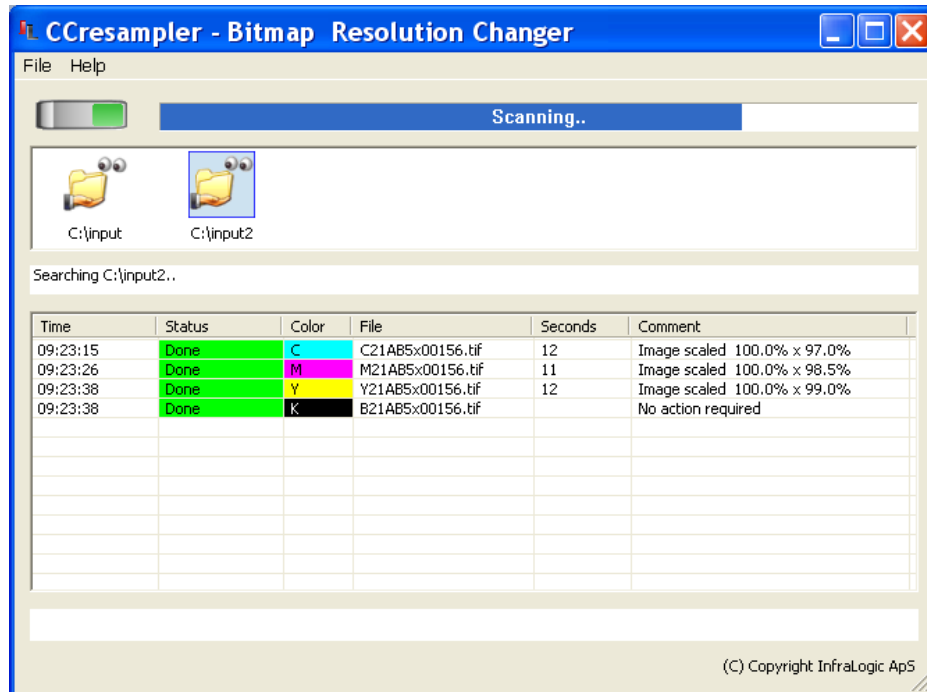
If you are not sure which CPU the PC is running execute the CPUID.exe program from a command prompt. The output should state YES to the feature `_CPU_FEATURE_SSE2`



```
C:\WINDOWS\system32\cmd.exe
C:\Public\InputCenter_Enterprise\NOSIMD2>cpuid
v_name:      GenuineIntel
model:      Unknown
family:      6
model:      13
stepping:    8
feature:     00000007
             _CPU_FEATURE_MMX
             _CPU_FEATURE_SSE
             _CPU_FEATURE_SSE2
             _CPU_FEATURE_3DNOW
os_support:  00000007
             _CPU_FEATURE_MMX
             _CPU_FEATURE_SSE
             _CPU_FEATURE_SSE2
             _CPU_FEATURE_3DNOW
checks:      0000000f
C:\Public\InputCenter_Enterprise\NOSIMD2>_
```

2 Operation

CCResampler is extremely simple to operate. Simply launch the program and flip the start-button. CCResampler will scan enabled folders in a round-robin fashion. To exclude a folder from search click the folder when the folder scan is stopped. A red stop sign will be shown on the disabled folder(s).



Ccresampler main interface shows progress of file processing

Using the additional Fanout Control utility

For stand-alone operations CCResampler can be supplemented with the use of the program *Fanout Control*. Fanout Control sits in front of CCResampler and will decide of scaling parameters based on file name parsing, such as product name og press name in the file name. Fanout Control will watch a hot-folder and based on the parsed incoming file names Fanout Control will pick the associated fanout setting and will hand over this to CCResampler. Fanout Control is described separately in section 4.

Performance notes

High quality bitmap scaling is a very demanding process. On a high performance PC expect a standard broadsheet plate file to resample is 20-30 sec. Performance is mainly dependent on memory speed and CPU speed. For highest throughput, choose the fastest memory bus available and choose latest CPU model (memory bus speed is the most important criteria).

3 CCResampler configuration

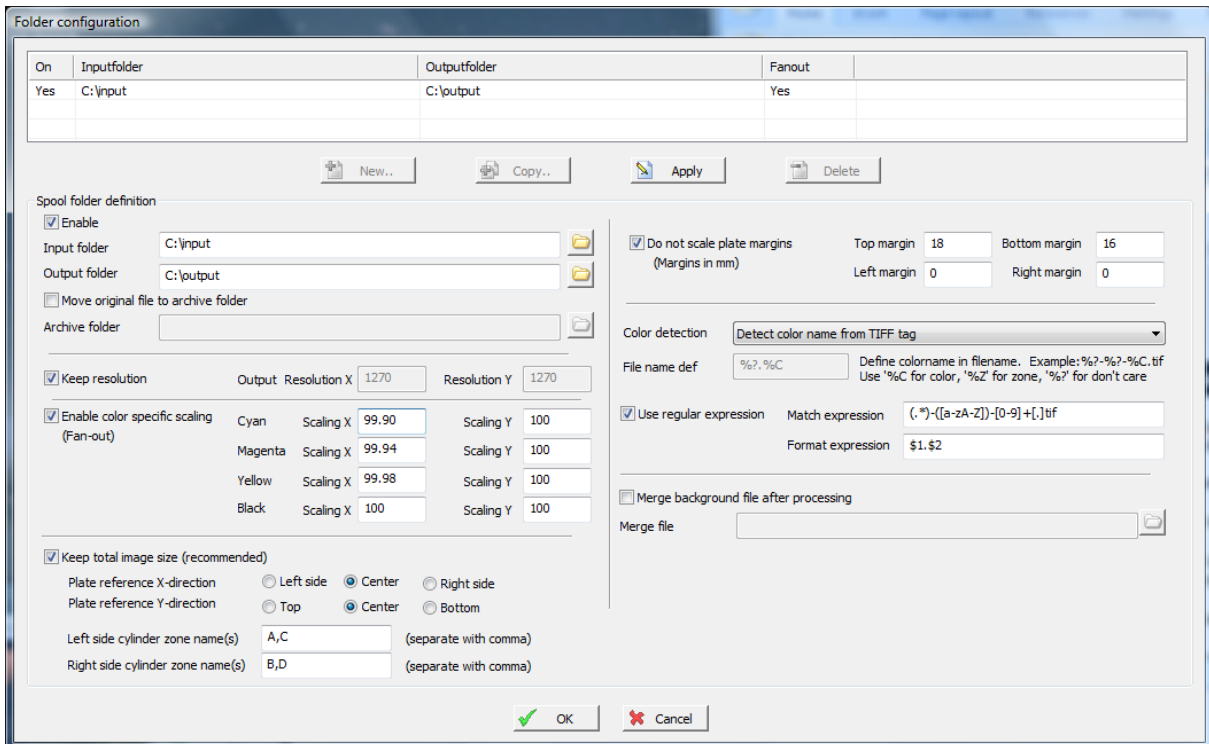
CCresampler is easily installed using the install program CCResamplerSetup.exe found on the installation CD.

Folder configuration

The configuration dialogs are accessed via **the File->Configuration..** menu

The Folder configuration dialog lists the currently defined folders in the list at the top. The current version of CCResampler allows 20 queues (hot-folders) to be defined.

To change a current setup, highlight it in the list and press the **Edit..** button (it will change to



CCresampler (in setup Edit mode) is configured to do re-sampling and/or image scaling. In this example color specific scaling is performed in the x-direction.

Apply when in edit-mode). To confirm changes press the Apply button. To add a new setup press the **New..** button and confirm with **Apply**.

Note that no data is saved until the **OK** button is pressed. Any changes will be most if the **Cancel** button is clicked.

Click the **Enable** checkbox to use a specific hot-folder and enter input folder and output folder name.

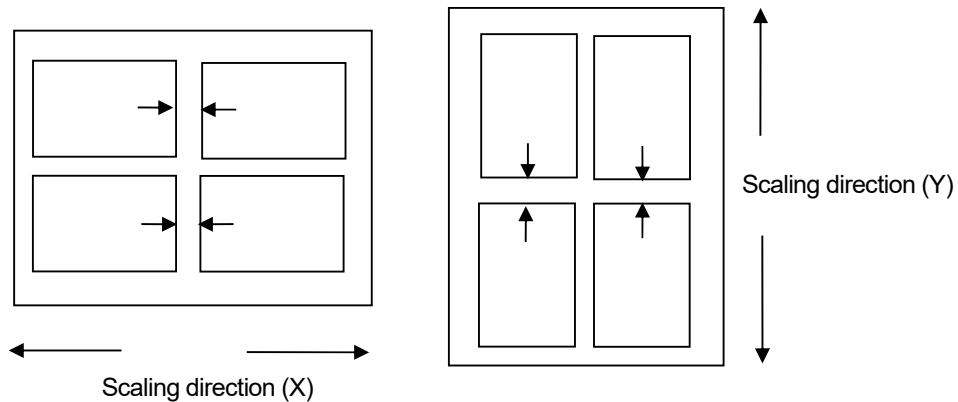
Check the archiving option if required. Note that files are deleted from the input folder.

Scaling parameters

In case of fan-out scaling enable the Color Specific scaling option and enter the scaling values. Take care to enter the scaling in the right direction. Usually if scaling is applied on a panorama plate file in 'landscape mode', the scaling must be in the X-direction. If the plate file comes in rotated with respect to the orientation on the press, apply the scaling in the Y-direction (see illustration)

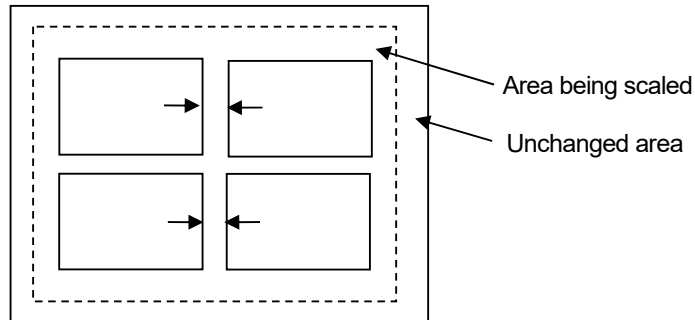
In order to ensure file size (pixels in X and Y direction) is maintained through the scaling process, enable the **Keep total image size** option. The resulting file will always have same dimensions as the incoming file. Any image area exceeding this size due to up-scaling will be cropped (centred crop). For downscaling additional margin will be applied (while centring the scaling image).

Usually one color is a 'reference-color' not needing scaling. (x=100% y=100%) This will lift the overall performance because this color will just be passed through CCresampler unchanged.



Typical scaling direction depends on the orientation of the incoming file. Files sent to portrait imaging device must usually be scaling in the Y-direction to obtain fan-out compensation.

Check the option **Do not scale plate margins** to avoid scaling of plate marks in the edges e.g. visual bending target marks and barcodes. This ensures registration between colors through the plate bending phase.



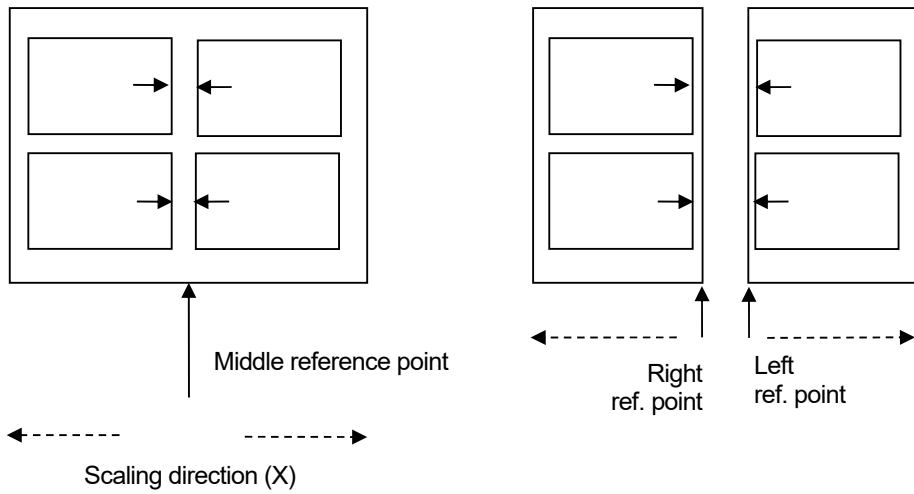
Ccresampler can keep plate marks unaffected of the scaling operation by specifying 'margins' to ignore.

Note that CCresampler may modify the margin settings internally to center the scaled image on the plate.

Scaling reference point

For panorama plates the scaling reference will normally be the center of the plate – meaning the center of the paper. For broadsheet plates however, often it is required to have different reference points depending on the placement on the cylinder. Plates sitting on the left hand side may have to use a reference (zero) point on the right hand side on the plate (inner) and visa versa for the right plate.

CCresampler has the ability to map cylinder zone names to different reference points (left or right). Alternatively the plate 'side' F and B from ControlCenter may be used to dictate left or right reference point for a given plate.



Scaling reference point (origin) may vary for panorama plates and broadsheet plates. The zone name (from the file name or from ControlCenter) helps automate left/right reference point

Folder configuration

On	Input folder	Output folder	Fan
Yes	C:\FanoutIn\Broadsheet	C:\FanoutOut\Broadsheet	Yes
Yes	C:\FanoutIn\Panorama	\\172.22.80.60\Krause\input\Pano	Yes

Spool folder definition

Enable

Input folder: C:\FanoutIn\Broadsheet

Output folder: C:\FanoutOut\Broadsheet

Do not scale plate margins (Margins in mm)

Move original file to archive folder

Archive folder:

Keep resolution

Output Resolution X: 1270 Resolution Y: 1270

Enable color specific scaling (Fan-out)

Cyan	Scaling X	100	Scaling Y	99.902
Magenta	Scaling X	100	Scaling Y	99.937
Yellow	Scaling X	100	Scaling Y	100
Black	Scaling X	100	Scaling Y	100

Keep total image size (recommended)

Plate reference X-direction: Left side Center Right side

Plate reference Y-direction: Top Center Bottom

Left/top side cylinder zone name(s): B (separate with <code>#</code>)

Right/bottom side cylinder zone: F (separate with <code>,</code>)

Example showing how Front and Back notations from the plate imposition plan may control reference point position in CCResampler.

Configure press tower names

Press

Tower	FanoutC	FanoutM	FanoutY	FanoutK	FanoutS
Twr1	101.120,100.000	100.760,100.000	100.540,100.000	100.000,100.000	100.000,100.0
Twr2	101.330,100.000	100.810,100.000	100.440,100.000	100.000,100.000	100.000,100.0
Twr3	102.020,100.000	101.760,100.000	101.020,100.000	100.000,100.000	100.000,100.0

Tower name:

Fanout settings for tower

Cyan image scaling	w:	<input type="text" value="101.12"/>	h:	<input type="text" value="100"/>
Magenta image scaling	w:	<input type="text" value="100.76"/>	h:	<input type="text" value="100"/>
Yellow image scaling	w:	<input type="text" value="100.54"/>	h:	<input type="text" value="100"/>
Black image scaling	w:	<input type="text" value="100"/>	h:	<input type="text" value="100"/>
Spot color image scaling	w:	<input type="text" value="100"/>	h:	<input type="text" value="100"/>

Offset settings for tower

Cyan imaging offset	x:	<input type="text" value="0"/>	y:	<input type="text" value="0"/>
Magenta imaging offset	x:	<input type="text" value="0"/>	y:	<input type="text" value="0"/>
Yellow imaging offset	x:	<input type="text" value="0"/>	y:	<input type="text" value="0"/>
Black imaging offset	x:	<input type="text" value="0"/>	y:	<input type="text" value="0"/>
Spot color imaging offset	x:	<input type="text" value="0"/>	y:	<input type="text" value="0"/>

Direct litho (mirrored colors)

Flip cyan image
 Flip magenta image
 Flip yellow image
 Flip black image
 Flip spot color image

Optional information for post processing control

Optional information C:
 Optional information M:
 Optional information Y:
 Optional information K:
 Optional information S:

Scaling values are sent from OutputCenter (in TIFF tag), allowing fan-out values to be set linked to press towers. The scaling values are configured in the **Press Definition** dialog in ControlCenter

Getting scaling parameters from ControlCenter

CCResampler can be given scaling parameters from ControlCenter so that fan-out can be set on a per-tower basis.

Color detection

Color name is required for color specific scaling (e.g. for fan-out compensation). The name of the color can be detected in three ways:

- The actual scaling values can be extracted from a TIFF tag written by the OutputCenter application. This is the recommended way for ControlCenter integration. Scaling values are set in OutputCenter press definitions on a per-tower basis.
- Colors are put in individual subfolders under the input folder. Subfolders must be named \C, \M, \Y, \K (example: c:\Input\C for cyan files)
- Color can be extracted from the file name as a C,M,Y or K letter. To detect color from the file name, use a %C in the file name definition. See hint notes in the user interface.

Example: %?-%?-%C-%?.%? will match input file name SomeName-5-C-1.TIF (Cyan color)

In order to detect the color ID in more complicated cases an internal *regular expression* can be applied on the incoming filename. This can transform the name internally so a naming convention (described above) will match. Note that the file itself is not renamed – only the internal reference. For information about regular expressions see Appendix A of the ControlCenter User's Manual.

- Colors can be detected as a C,M,Y or K letter in the ImageDescription TIFF tag (tag number 270). Many RIPs and other TIFF generators use this tag for color information.
- Scaling can be detected in the TIFF tag (tag number 270). If ControlCenter OutputCenter has generated the file, this mode is default for the resampler.
- Scaling can be detected in INF job description files send along with the TIF file. The INF file is a small text file generated by Esko-Graphics FlowDrive RIPs, EskoNet and some Agfa Arkitex/NewsDrive systems.

Merging with a background file

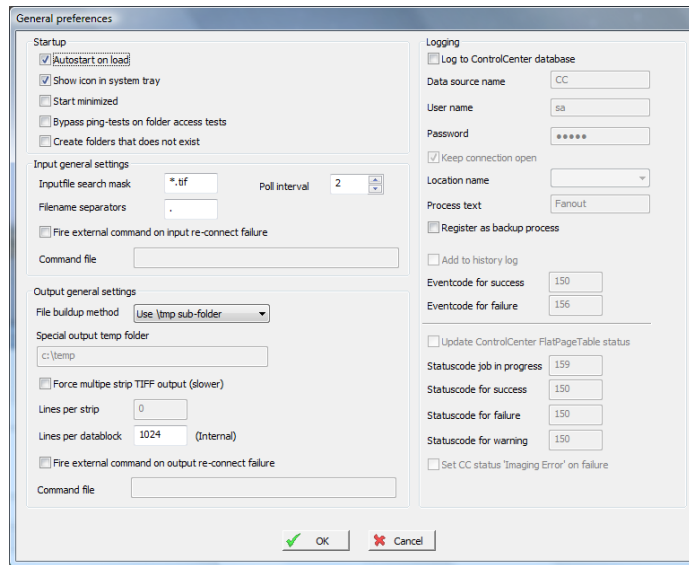
After scaling has been performed, CCRresampler can merge in a background layer on the resulting bitmap image. The background file may hold plate register marks and other static information. For background file must be a 1-bit TIFF file (all baseline specification compressions are supported)

General preferences

A number of general settings can be adjusted in **File->Preferences..**

It is advisable to set the option 'AutoStart on load'. Placing CCresampler in the Windows Startup folder will then enable automatic start upon machine restarts.

The final TIFF file is created step-wise which may cause problems for the target system if created directly in the output folder. The default behavior for CCresampler is to build up the file in a temporary folder (\tmp) as a sub-folder to the target folder.



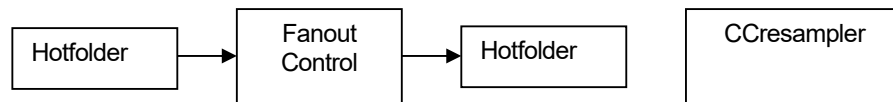
Logging

CCresampler is prepared to report activity to the ControlCenter system so that errors can be observed from the centralized MonitorCenter application.

Key in the ODBC parameters (make sure one is present for the machine running CCresampler) and eventcodes to be reported to the ControlCenter database.

4 FanoutControl Control Program

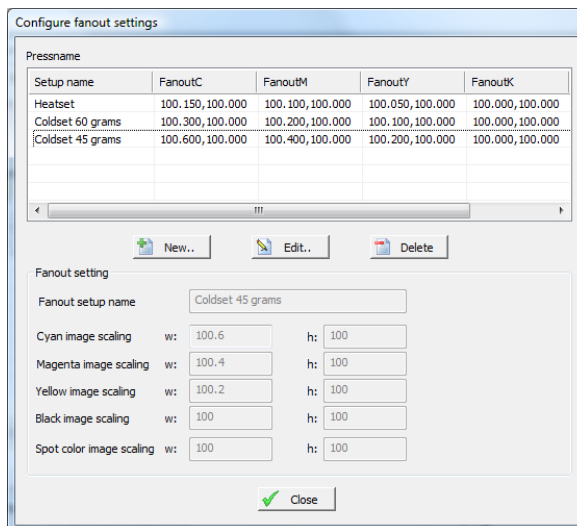
Fanout Control can be used in environments without the ControlCenter workflow to control the fanout. Fanout Control sits in front of CCresampler and intercepts files and parses the file names. Based on the naming, Fanout Control can then apply a given fanout setting to the job and pass it on to CCresampler for physical processing



The setup of Fanout Control has two steps: Defining *fanout sets* and defining *file name parsing*

Fanout sets:

Go to File -> Fanout sets.. and add and name fanout scaling setup. The setup names should reflect the job's characteristics, e.g. print method, press or paper weight.



File name configuration:

Go to File->Naming configuration.. and define the naming convention for the incoming files, by isolating the name of interest, e.g. the publication (product) name. Also set the (one) input folder where TIFF-files are entered and set the output folder to the input folder of CCresampler.

On the right hand side, now associate different (publication) names with fanout sets. Any unknown publication name will use the fanout set selected with 'Default fanout set'

Folder and publication configuration

Spool folder definition

Input folder:

Output folder:

Search mask: Poll interval: Stable time:

Autostart on load Start minimized Minimize to tray

Generate logfile Logfile path:

File name convention

File name def: Define colorname in filename. Use '%C' for color, '%P' for publication, '%?' for don't care. Example: %?-%?-%C.tif

Use regular expression

Match expression:

Format expression:

Fanout defaults per publication

Fanout dependent on Publication name

Default fanout set:

Publication	Fanout
News	Coldset 45 grams
Times	Coldset 60 grams
Golf Magazine	Heatset

New.. Delete Edit..

Publication name:

Fanout set: New..

OK Cancel