SAASColourManagement.com

MANUAL

Expert AxCM

February 2018

xerox Business Innovation Partner

Automated Colour Control

cm

PUBLISHED BY: CMI B.V. - THE NETHERLANDS

Copyright © 2018 by CMI B.V.

All rights reserved. No part of the contents of this book may be reproduced or
transmitted in any form or by any means without the written permission of the publisher.

Author: Chris Trimbach

CMI BV
Rembrandtlaan 1
5161 ER Sprang Capelle
The Netherlands
+31 (0)416 337330
info@cmicc.com

Goal of this Automated printer color control system:

Bring any digital color printer in its highest quality level and validate frequently if the printer is repeatable to that. Reduce automated, drifts of output by optimizing calibration curves, ICC- or Device Link profiles and spot color libraries. Analyze all color data when goals are not achieved and give recommendations how to come back to quality levels before.

About this manual
This manual is for experts or 'train the trainer' programs and discusses installation, the automated functions and background info of CMI SaaSColorManagement.com, CMI-Agent and how to communicate with Xerox® Integrated Plus Automated Color Management.

Other CMI color management manuals of apps, DFE spectrophotometers and DFE settings can be found too in the 'Download' section of the service page of SaaSColorManagement.com.

For users we have a quick reference manual too.

How to start the powerful Mobile control and to use.

When this is the first install and no up front training is followed please read this book before start.

The automation can be done via sevral routes based an availabilities and licenses.
Xerox IntegratedPlus Automated Color Management or also set as AxCM. The x can be seen for:
(i) in-line, (n) near-line, or o for off-line.

(i) In line: The in line spectrophotometer is used for measurements, JMF/JDF driven via the CMI-Agent.
(n) Near line: The supported device for this is the X-Rite iSis2Net. This spectrophotometer is connected in the local area network and can measure stand-a-lone. The CMI-Agent will retrieve the data from the spectro automatically after the target is measured. The iSis2Net needs a fixed IP address what can set via the iSis2Net configurator, download this for Mac or PC via the Software sections of SaaSColorManagement.com. See chapter….
(o) Off line: Spectrophotometer driven by an application like ColorPort. Measurement data must be saved in the hot folder of the CMI-Agent.

Manual: No any automation. Measurements and results are manual uploaded/downlowded and forwarded to the DFE. This manual is not needed or gives no added value for manual workflows.

Contents

Chapter 1	Installation	8
1.1	Minimum requirements. (i,n,o)	8
1.1.1	Activate SaaS Service and Install CMI-Agent for workflows (i,n,o)	8
1.2	Step 1: Enable FFPS or Fiery to license XIPACM (i)	9
1.3	Step 2: Activate SaaSColorManagement.com (i,n,o)	9
1.3.1	Step 3: Upgrade user as login for CMI Agent or Mobile use (i,n,o)	10
1.4	Step 4: Set-Up CMI-Agent (i,n,o)	11
1.4.1	Install CMI-Agent	11
1.4.2	CMI-Agent settings	12
1.4.3	Communication Ports and Network settings information:	13
1.4.4	Check status of CMI Agent	14
1.4.5	Log files from CMI Agent actions	14
1.5	Step 5: Enable a JMF workflow (i)	14
1.5.1	Create Paper / Color groups (i)	18
1.5.2	Quick overview DFE/RIP network settings	18
	EFI - Fiery “Inline” (see also 1.5 step by step)	18
1.6	Set FTP functions for FFPS and load Pantone libraries (i,n,o)	19
1.6.1	FFPS v6-9 (Solaris)	19
1.6.2	Change rights of Pantone related files and folders	19
1.6.3	FFPS v2x (Windows)	20
	Please don’t do..	20
1.7	Install near line measurement device X-Rite iSis2Net (n)	21
1.7.1	Set iSis2Net to correct IP address	21
1.7.2	Select iSis2Net in SaaSColorManagement.com	22
1.8	Use hot folders for semi-automated control (n,o)	23
1.8.1	DFE/RIP network settings Xerox FFPS:	23
1.8.2	DFE/RIP network settings EFI - Fiery	24
1.8.3	DFE/RIP network settings Caldera	25
1.8.4	DFE/RIP network settings iController PDF Rialto	25
1.8.5	Create an Rialto automated workflow in CMI SaaSColorManagement:	28
1.8.6	Print to a shared folder when hot folders is not an option	29
1.8.7		Verify Queue
31		
1.9	Step 6: Switch on tasks (i,n,o)	32
1.9.1	Auto Functions	32
1.9.2	Result Messages	33
1.9.3	Sync Media (FFPS/Fiery)	33
1.9.3	Associated Paper Groups (see also 2.4 paper groups)	33
1.9.4	TRC / Linearisation / Base	33
1.9.6	ICC / DL / Verify Paper	33
1.9.7	Spot Color Library (FFPS, Emtex, iFlow)	34
1.9.8	Set Screening (JMF)	34
1.9.9	Verify Queue (JMF FFPS/ Near line)	34
1.10	Step 7: First test run	36
1.11	Rebuild	37
Chapter 2	Background info	38
2.1	Database	38
2.2	Workflow	38
2.3	Calibration paper	38
2.4	Paper groups	38
2.5	Baseline of Linearization / Calibration curve, TRC (the Base)	39
2.5.1	New Calibration paper & Baseline	39
2.5.2	Hard reset TRC Baseline:	39
2.5.3	Back to earlier used Calibration Paper	39
2.5.4	Connect TRC Baseline to different paper size	39
2.6	Baseline ICC / DL profiles (Verify)	39
2.7	Self Learning Base Line system	40

2.7.1	Temporary TRC Baseline	40
2.7.2	First baseline is set in 10 & 30 days	40
2.7.3	Long term drifts	41
2.7.4	Operator messages related to Base Line	41
2.7.5	Important warning messages during period of TRC Baseline creation	41
2.7.6	Layout printed target Base Check	42
Chapter 3	How to Verify Quality	44
3.1	Theoretical accuracy	44
3.2	Predicted / In-Gamut / Base2Profile	45
3.3	Measured / Consistency / Base2Base	45
3.4	Gamut Check*	45
3.5	ICC Profile Analyzer*	45
3.6	Automated quality control settings	46
Chapter 4	Operator Button control system	48
Chapter 5	Overview & Reports	49
5.1	Overview of first job after creating a new workflow	49
5.2	Standard check of Base and ICC profile	50
5.3	Base Check	51
5.4	Verify	51
Chapter 6	Equalize spectral output	52
6.1	What it does	52
6.2	Installation steps	52
6.3	Equalize an ILS	52
Chapter 7	Communication options	54
7.1	Communication methods	54
7.2	Communication settings	54
7.2.1	100% Automated: via JMF/JDF, Xerox® IPACM and ILS	54
7.2.2	Automated without ILS: via JMF/JDF/Xerox IPACM and near line Spectro	55
7.2.3	Automated without ILS/XIPACM: via JMF/JDF/FTP/Share and Near Line Spectro	55
7.2.4	Automated without ILS/AxCM/JMF: via FTP/Share and Near Line Spectro	56
7.3.0	Error: Can't connect to the file share	57
Chapter 8	Automation Settings	58
8.1	Job Settings	58
8.2	Paper Control Settings	58
Chapter 9	Workflow diagrams	59
9.1	After Login	59
9.2	Start Job	59
9.3	Full Job	60
9.4	Base / TRC Check	60
9.5	Verify check	61
9.6	Create ICC / DL / Spot Colors	61
Chapter 10	Tolerances	62
10.1	Base Check	62
10.1.1	Sheet2Sheet (Print warm-up sheets)	62
10.1.2	Base2Baseline	62
10.2	Verify	62
10.3	Standard Tolerances for Custom QC reports	62
Chapter 11	Overview CMI Documentation and downloads	63

CMI B.V.
SaaSColorManagement.com

Introducing fully automated color management. CMI offers a simple revolutionary approach that resolves the shortcomings of most color management processes to ensure daily consistent high quality output. Via a task scheduler or web button, a smart automated color management workflow is initiated that is fully integrated into the production workflow.
Concerns about quality are avoided by verifying and, if needed, optimizing the color output. The quick and highly controlled methodology excels in usability, speed and quality. Baselines are automatically set up for any paper stock or production queue. Productivity is increased and operational costs are reduced with savings of approximately one hour per printer per day.
SaaSColorManagement.com is available as a stand-alone solution or as a component of Xerox® Integrated-PLUS Automated Color Management, an industry first, automated approach developed together with Xerox.

The Fastest Printer Control you can get

1. User or the CMI Task Scheduler starts the color quality inspection procedure - in this diagram, using the CMI mobile app.
2. Color target sheets are printed and scanned - automatically via the in line spectrophotometer [ILS] or manually at a near line spectrophotometer.
3. Scanned color data is automatically send to the CMI cloud, analyzed against the desired standard and stored as a reference for future measurements.
4. If within specification, the printer is ready for production. If not, pre-defined recovery procedures must to be performed on the printer. When integrated with Xerox IntegratedPLUS Automated Color Management, adjustments to color profiles and spot can be fed back to the Xerox color printers.

Key Features

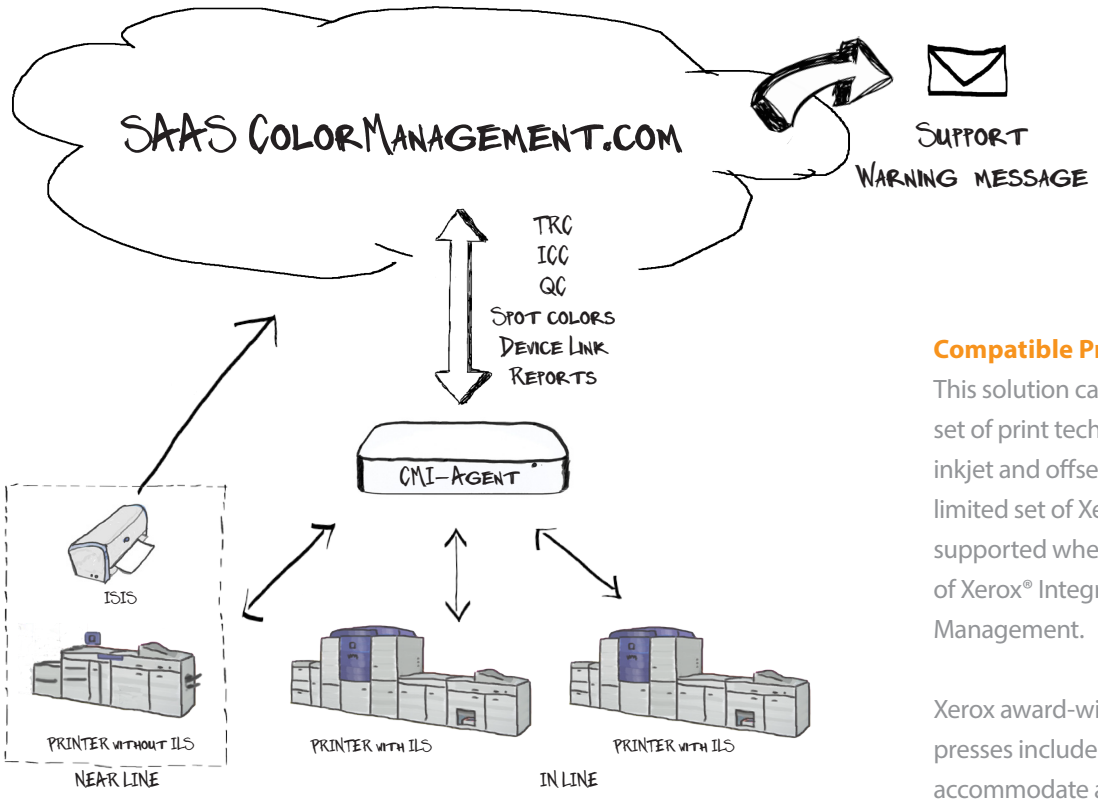
- Automatic process initiates a comprehensive high-end automated color management system with an extremely easy-to-use and intuitive user interface.
- Reports via the cloud interface or email .
- Using the mobile app, operators can initiated the process anywhere on multiple printers simultaneously.
- Automatically baselines any press, paper stock or printer queue to guarantee repeatability and accuracy.
- Maximum quality for graphic arts, packaging and G7 output; improved image quality of photo books.
- Support ICC, Device Link and spot color workflows.
- Stable colors from multiple printers across multiple locations.
- More and better quality production out of existing printers.
- Powerful toner and ink savings without loss of quality.
- Decrease costs by automating the process.
- Cloud-based approach for easy installation and maintenance.
- Minimal annual subscription fees without a high up-front investment.
- Very fast return on investment.

Your Challenges

Maintaining good print quality requires a focused operator. Delivering the same quality between printers and across multiple different print shop locations requires even more effort. Operators may not have the knowledge or get the time needed to execute color management tasks. Outside consultants can be very expensive and are not always the solution. Without a process, a lot of time is wasted on extra support and maintenance activities – color management could easily take one hour per day per printer. To create a lean print manufacturing environment, color management must be built into the printing process.

Key Challenges

- Simplifying the process while offering comprehensive color management capabilities.
- Enabling ICC and Device Link profiling.
- Supports preserves and edits in Device Link profiles.
- Profiling any other output for optimum migration to digital color printers, like offset.
- Optimizing Pantone® and custom spot colors.
- Enabling Hybrid Rendering for special applications (G7, photo, packaging) and for paper types with optical brightness.
- Color Quality Control to ISO, Fogra, GRACol and/or in-house standards.
- Saving on toner and ink without loss of quality.
- Showing trends of repeatability, quality and frequency of usage per workflow.



Compatible Products

This solution can integrate with a broad set of print technologies including digital, inkjet and offset, regardless of vendor. A limited set of Xerox digital color presses is supported when offered as a component of Xerox® IntegratedPLUS Automated Color Management.

Xerox award-winning digital color presses include flexible platforms that accommodate a wide variety of workflow software. Functionality may vary by product model. Contact your local sales representative for detailed compatibility information.

How Xerox Can Help

CMI SaaSColorManagement.com addresses all of your color management concerns:

- Available as a stand-alone solution or as a component of Xerox® IntegratedPLUS Automated Color Management, an industry first, automated approach developed together with Xerox.
- A web-based cloud offering that's closely integrated with the Xerox iGen family and via near line measurement integrated with all ICC based digital front ends (DFE).
- Easy installation and training.
- Communication via smart gateway, the CMI-Agent.
- Total process time are minutes.
- Easy understandable reports.
- Xerox will train your color expert to use simple and robust tools to design powerful automated color workflows.
- Operators only have to press one button or use the Task Scheduler to initiate those pre-defined color workflows; can be initiated from a mobile app, if desired.
- Color management expertise is now integrated into the printing environment without requiring a color expert at every site.
- Quality is under control and optimized across all printers at all locations, avoiding production losses due to color issues.
- Production color printing is a lean process (Verify, Analyze, Optimize).
- Minimal annual subscription fees without a high up-front investment.

As a component of Xerox IntegratedPLUS Automated Color Management

- Xerox iGen4™ Diamond Edition
- Xerox iGen™ 150
- Xerox iGen™ 5
- Xerox 8250

Standalone with in line or near line spectrophotometer

- Xerox iGen4™/150/5
- Xerox® Color 8250
- Xerox® Versant™ 2100/3100 Press
- Xerox® Versant™ 80/180
- Color 800/1000 Presses
- Xerox® Color C75/J75 Press
- Xerox® Color C60/C70
- Xerox® Color 550/560/570
- Xerox® Rialto™ 900 Inkjet Press
- Xerox® Brenva Inkjet Press
- Xerox® Trivor Inkjet Press
- Impika Compact
- Impika Reference
- Impika eVolution
- CiPress™ 325 / 500

Chapter 1 Installation

1.1 Minimum requirements. (i,n,o)

Minimum licences from CMI:

1. Voucher CMI SaaSColorManagement.com (subscription)

This is a 100% cloud solution. Access via an Internet browser like Internet Explorer 10 or higher, Safari, Google Chrome or FireFox.

2. Voucher CMI-Agent (subscription)

Desktop solution. Needs to be installed on users PC or Mac (no any hardware is part of the subscription fee). CMI-Agent needs to be connected in the local LAN network with access to the internet and the color printers to automate.

3. Extra Printer connections for CMI-Agent. The CMI-Agent is delivered default with one printer connection, to connect extra printers additional licenses are needed. There is no limit adding extra printers to the same CMI-Agent app. Install one CMI-Agent in a network to drive all printers.

4. Remote Control: After the SaaSColorManagement.com is installed create user(s) with remote control functionality. See installation manual of SaaSColorManagement.com.

5. Near line measurements needs to have the iSis2Net installed.

6. Off line measurements needs to have additional tools. X-Rite® Spectrophotometer and ColorPort or i1Profiler software (both free software versions) installed on a PC or Mac. See chapter 9 Off line in this manual.

Minimum Licenses from Xerox

6. License Xerox® IPACM for full automated color management. The Xerox Integrated Plus Automated Color Management license is a Xerox® license and not available or delivered by CMI.

Minimum Hardware made available by user:

The service needs a PC or Mac, internet connection and access to a color printer(s).

When it is a Xerox® color printer with ILS measurement device and supports AxCM then we are able to deliver a 100 % automated service.

For the CMI-Agent: Windows 7 or higher with fixed local IP address, fixed connection to Internet and in the same LAN as the printers to be controlled by this service.

1.1.1 Activate SaaS Service and Install CMI-Agent for workflows (i,n,o)

Overview

The installation and training is done with the first day. To fine tune the automated functions it needs a period of minimum 30 days (20 tasks) daily quality checks. During this first month it asks some double checks to analyze quality levels and set Baselines. Thus the first 20 days it is recommended to let the service do all tasks so the Self Learning system can find the Base Lines of the system. This goes automated but needs a stable use of the calibration paper (always the same). When not normal deviations occur CMI can analyze and support / guide to stabilize the environment so at the end only variations / drifts will be reported.

The steps:

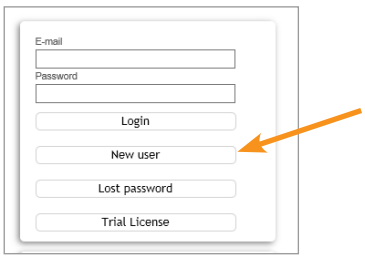
1. Enable AxCM License string on FFPS or Fiery, follow FFPS or Fiery instructions to install.
2. In case of FFPS create CMI123 user and set the rights of all Pantone and custom color libraries overwritable. See for this the FFPS setup guide. Expert page/Downloads/DFE Manual for:

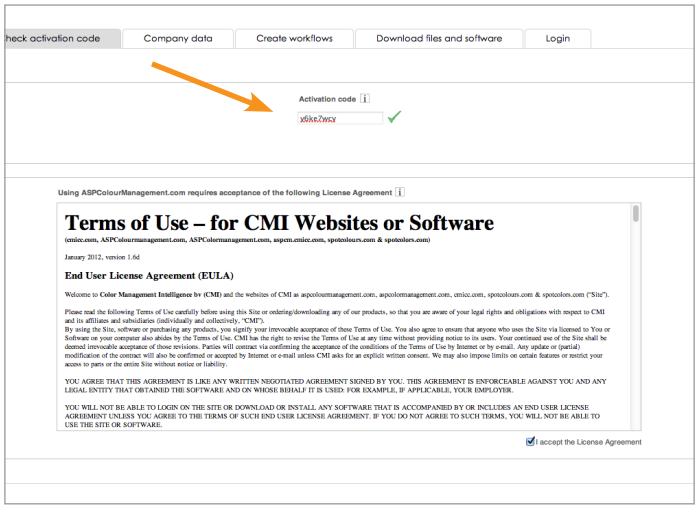
3. Activate and access to SaaSCM via wizard and download all manuals and the of installer CMI-Agent.
4. Upgrade one user as login details for the CMI Agent or Mobile use.
5. Install CMI-Agent
6. Enable Automated Control via the Service page of the SaaS , set IP address of DFE and Sync.
7. Enable tasks
8. Go to operator page and touch the button of that workflow

1.2 Step 1: Enable FFPS or Fiery to license XIPACM (i)

Read instructions of the XIPACM / DFE manual. This part is not supported by CMI.
Based on the previous license it can be a full install or only a service pack.

1.3 Step 2: Activate SaaSColorManagement.com (i,n,o)





An activation code is needed to activate the SaaS service. This code is printed on the received voucher also the ordered details as supscription period, level (Gold, Platinum (Lite), CMI Agent is noted. Thus all
CMI items are licensed via this code.

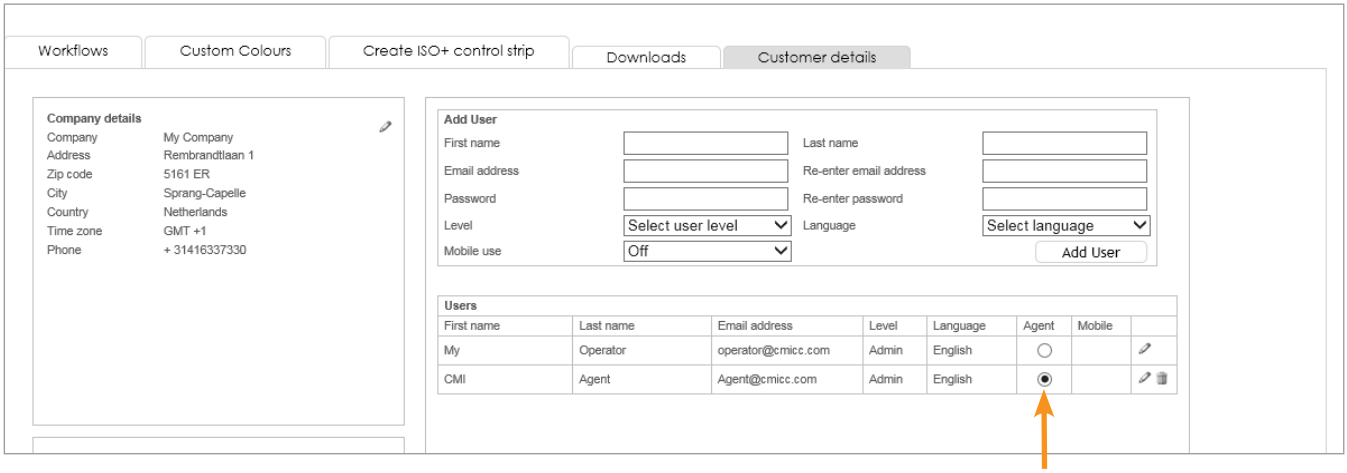
Open a Web Browser and go to www.SaaSColourManagement.com. Here you find below “Login” the button “New User”.

Use the activation code of the Voucher and agree with the EULA (agree fair use).

Continue with the wizard and login via the last step. (Extra info can be found in the Basic User Guide)

1.3.1 Step 3: Upgrade user as login for CMI Agent or Mobile use (i,n,o)

Login CMI Agent
The CMI Agent needs to be able to login the SaaSCM service. Only one ‘user’ can be upgraded to that level. Via the service page / customer details a new user can be made or an excisiting can be upgraded.



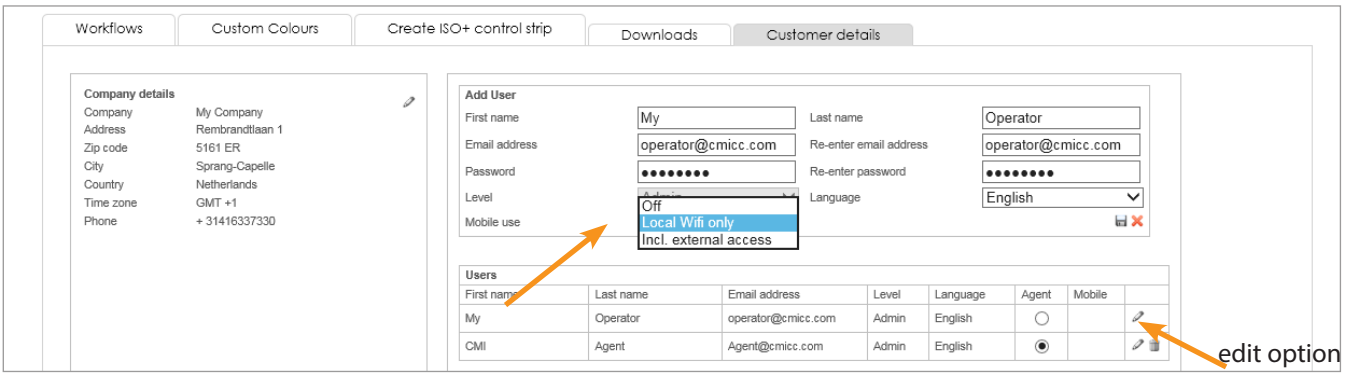
Mobile App / Remote control
To enable remote access to let user start tasks on his/her mobile device go to SaaSCM.com / Service Page / Customer Details and click on edit user account to enable Mobile control.
Mobile control can be limited to a local Wifi only or access via Wifi and external Internet connection.

Switch Mobile control to ‘Local Wifi only’ this let the operator using the app with the security that he/she is connected via the local Wifi of the company. When that limitation is not needed than also external wireless Internet can be used to start tasks. The Mobile control settings can be specified for each individual login different.

The Mobile app is a HTML5 website. On mobile devices the URL SaaSColorManagement.com will always be redirected to http://m.saascolormanagement.com. A mobile device is so limited to get access to the buttons only, to start or stop tasks and follow the process. A mobile user does not have the option to go to the service page or upload CGATS data from a near line workflow.

A short cut on the desktop of users mobile device is very useful. The website can be started direct as ‘App’, it takes no resources of memory of the mobile device and user doesn’t need to upgrade its software thanks to HTML5 and cloud driven.

Because the variety of devices please follow the instructions of your mobile device to install a short cut to this app on your desktop.



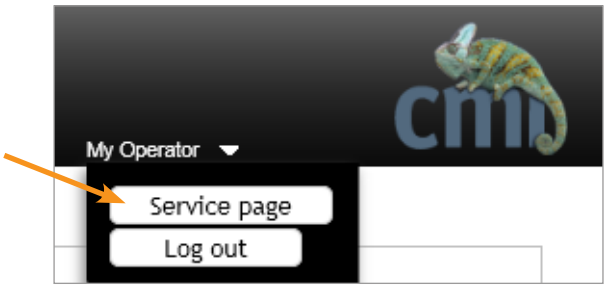
1.4 Step 4: Set-Up CMI-Agent (i,n,o)

The CMI-Agent software is to download after login or as step to download via the install wizard of SaaS-ColorManagement.com and after an upgrade is available.

Note: The CMI-Agent does not start any task by itself. It only can retrieve tasks after a correct login from your SaaSColorManagement.com account. All tasks / rules and communication paths must be set up front in SaaSColorManagement.com. The CMI-Agent forward retrieved jobs from SaaSColorManagement.com 1:1 to the printer via JMF commands, FTP or to shared folders.

Minimum requirements:
Windows 7 or higher with fixed local IP address, fixed connection to Internet and in the same LAN as the printers to be controlled by this service.

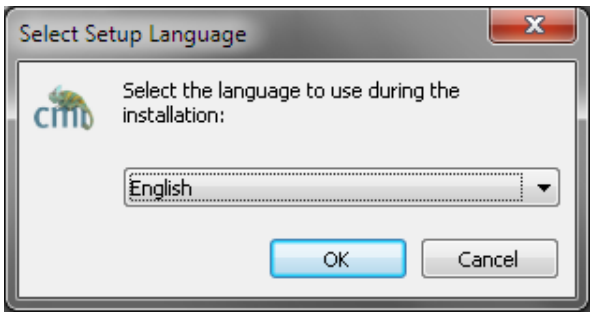
To download the application after login:
Go to the service page / downloads.



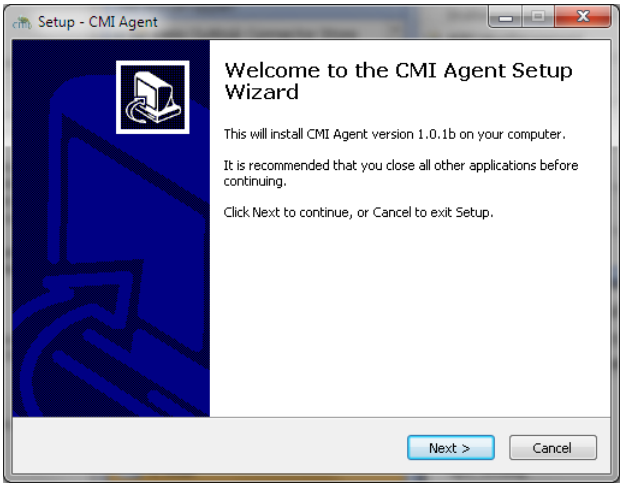
Select CMI-Agent out of the software list.

1.4.1 Install CMI-Agent

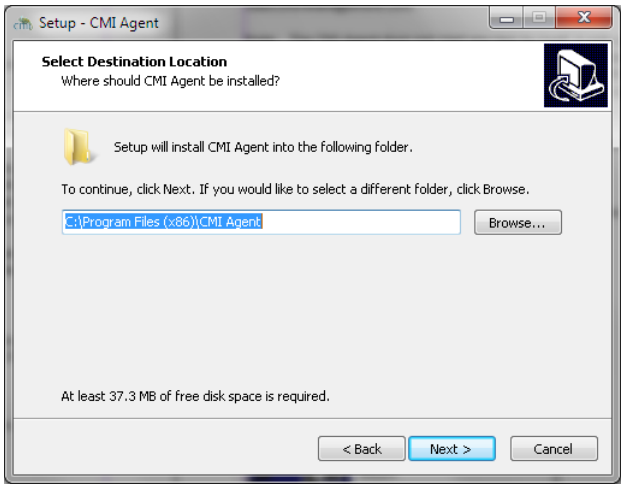
Find the download and double click on the exe.



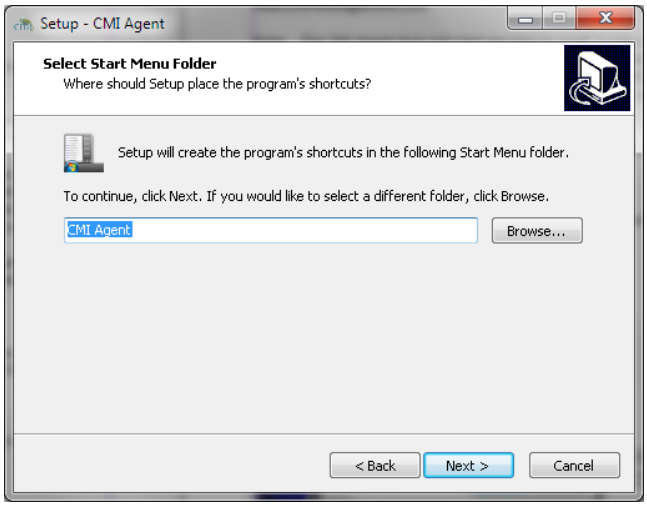
Step 1: Select your language.



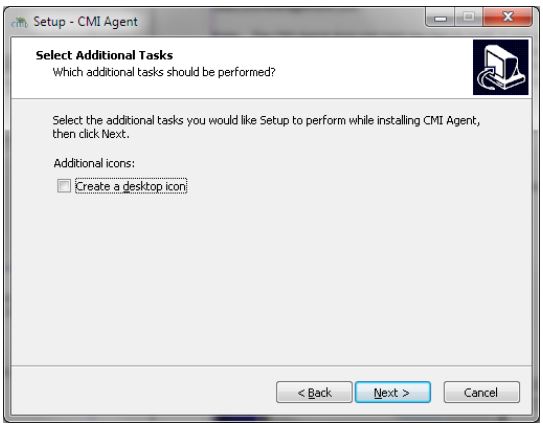
Step 2: Next.



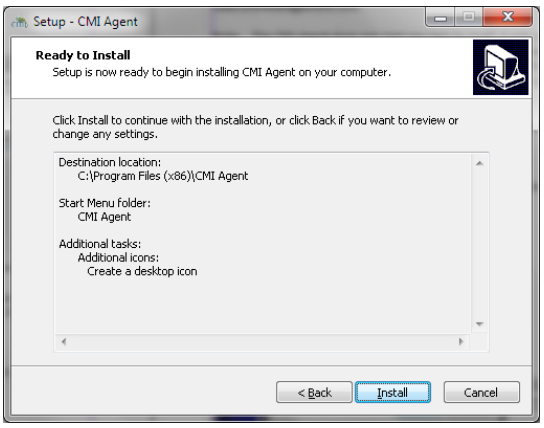
Step 3: Next or create an alternative path.



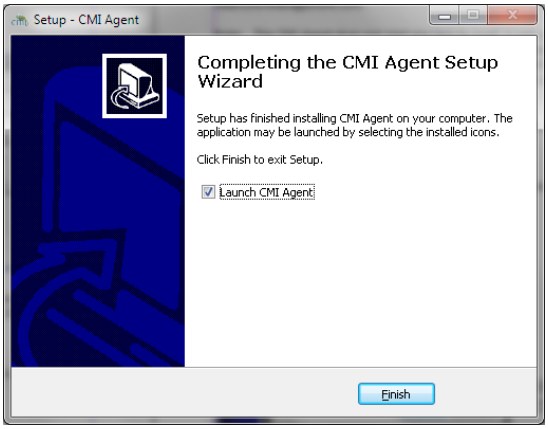
Step 4: Next or create an alternative name.



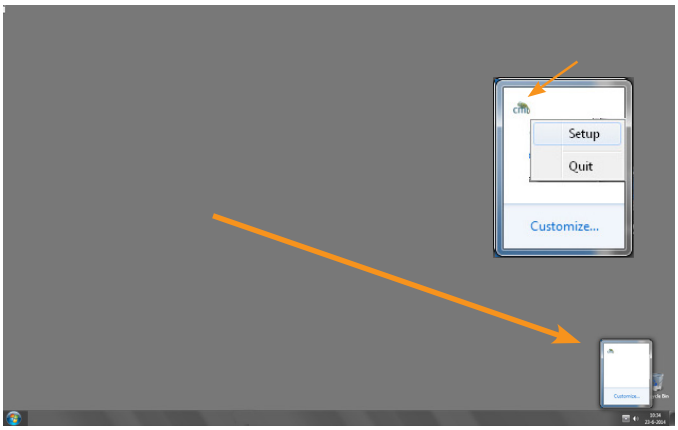
Step 5: Select and next for an icon on the Desktop



Step 6: Check list and Next to start install.

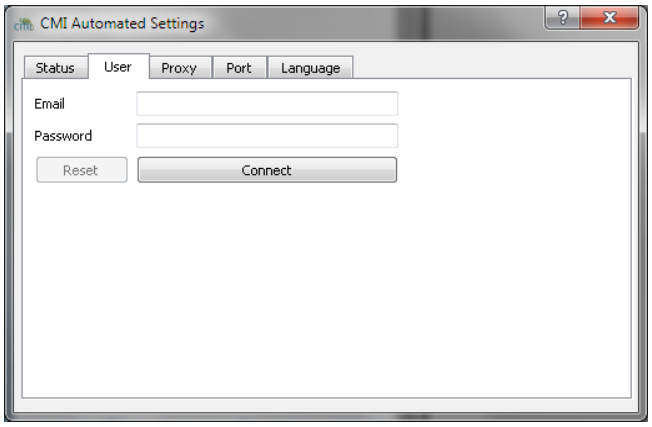


Step 7: Finish to close install.
via

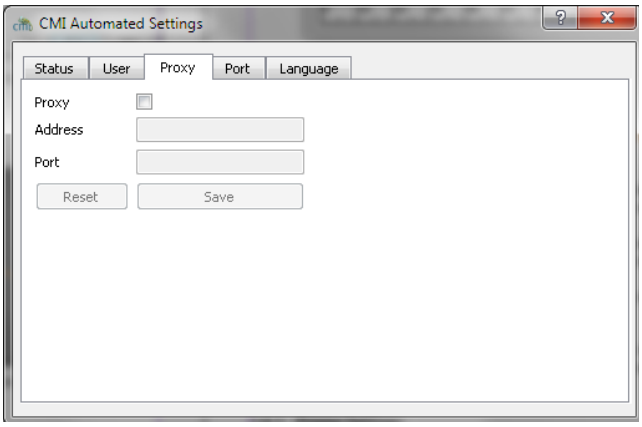


Step 8: Open the 'hidden icons' on the desktop and open a right mouse click the application

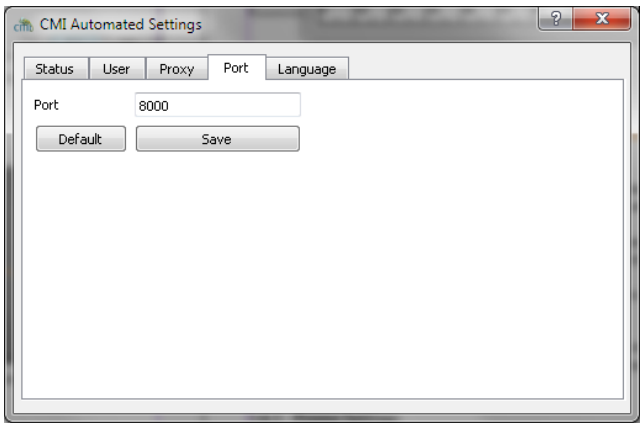
1.4.2 CMI-Agent settings



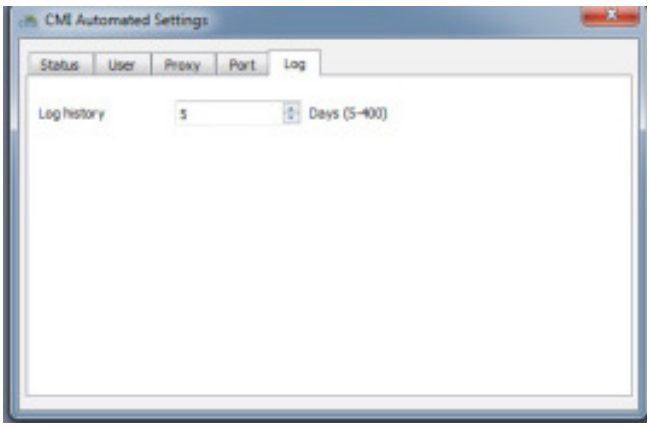
Step 3: Go to 'User' to give account login details of SaaSColorManagement.com. This user must be set as CMI-Agent in SaaSCM too.



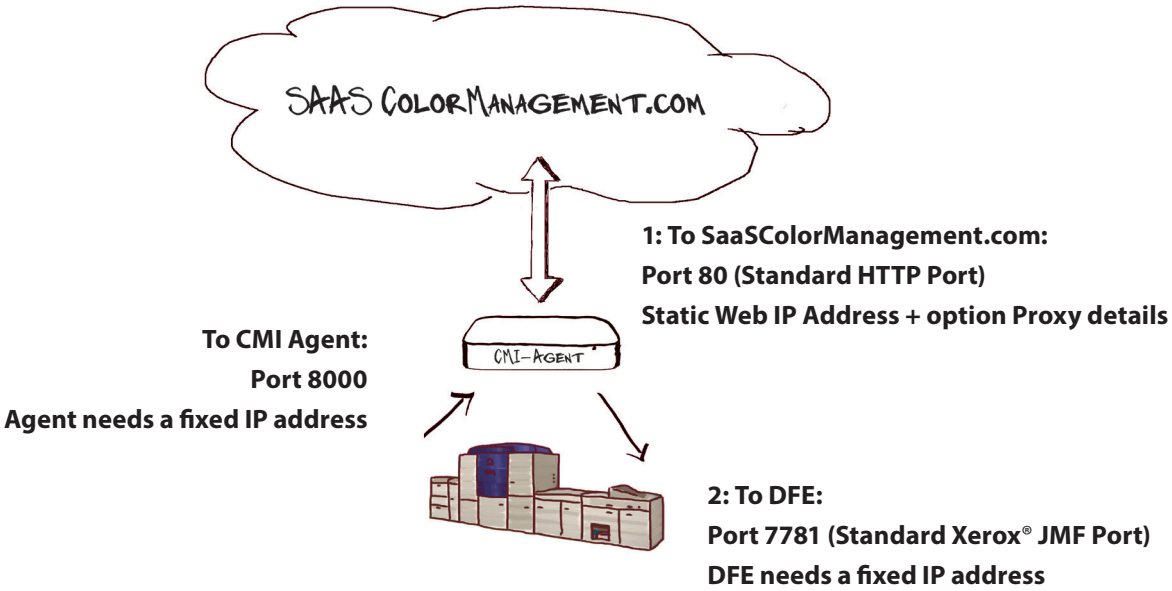
Step 4: If applicable select Proxy and enter details of Proxy Server.



Step 5: Port from DFE to CMI Agent. Default 8000



Step 6 Log files, default is last 5 days.



1.4.3 Communication Ports and Network settings information:

1: To get access with Internet the router will use normally Port 80.

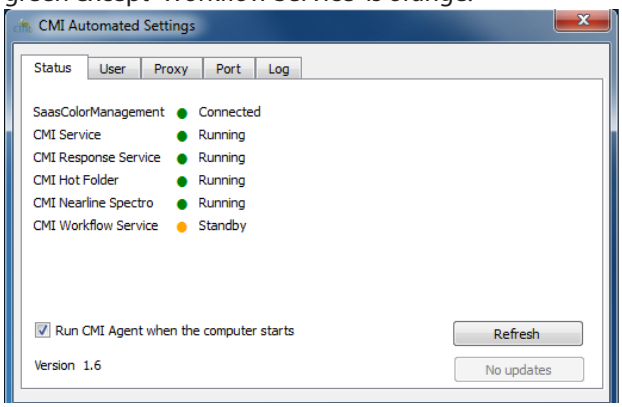
2: To retrieve tasks from the SaaS service it needs a static Web IP address and the Proxy Server address if applicable.

3: To forward a JMF/JDF task to the DFE it goes through a Port (7781) with a fixed IP address of the DFE. (See Step 6 DFE and Port settings of chapter 1.7 in SaaS and FFPS manual).

4: To forward data from the DFE to the CMI Agent any Port can be used, port 8000 is set as default in the CMI-Agent.

1.4.4 Check status of CMI Agent

When the steps above are done succesfully the status will give all green except 'Workflow Service' is orange:



Error:
SaaSColorManagement Login CMI Website:
Orange: CMI Website is visual, Agent did not login correct.
Red: CMI Website is not visual, check Web, Proxy / Firewall.

CMI Service to receive data from the CMI cloud service:
Red: Correct login is not possible, check login details.
Red with SaaSColorManagement Green: Restart CMI Agent.

CMI Response Service to receive data from DFE and send data to SaaSCM.
Red: Correct login is not possible, check login details
Red with SaaSColormanagement Green: Use different Port (default 8000)

CMI Workflow Service: Forward data from local PC to DFE
Orange: Waiting for a job
Green: Forwarding job to DFE

Button "New Updates" is visual: Download and install new version.

1.4.5 Log files from CMI Agent actions

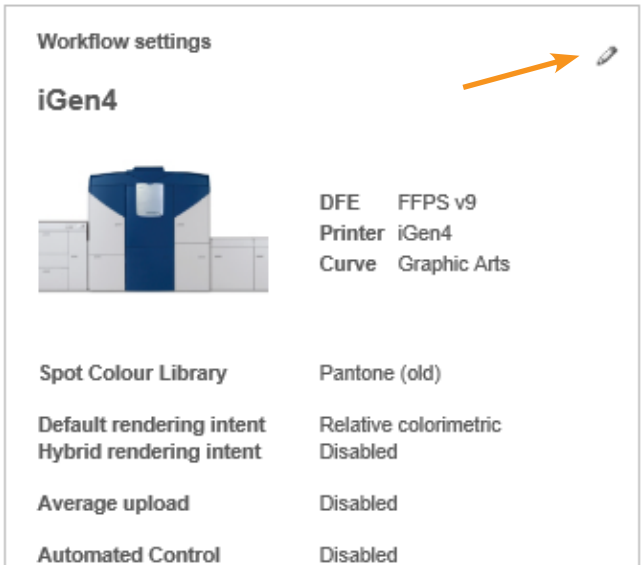
All actions from the CMI Agent are saved in daily log files. The amount of files can be set between 5 and 400 days. For PC these log files can be found via: %AppData%\Roaming\CMI_Agent\Log.

CMI can download these log files via a request call to CMI Agent. This for support reasons.

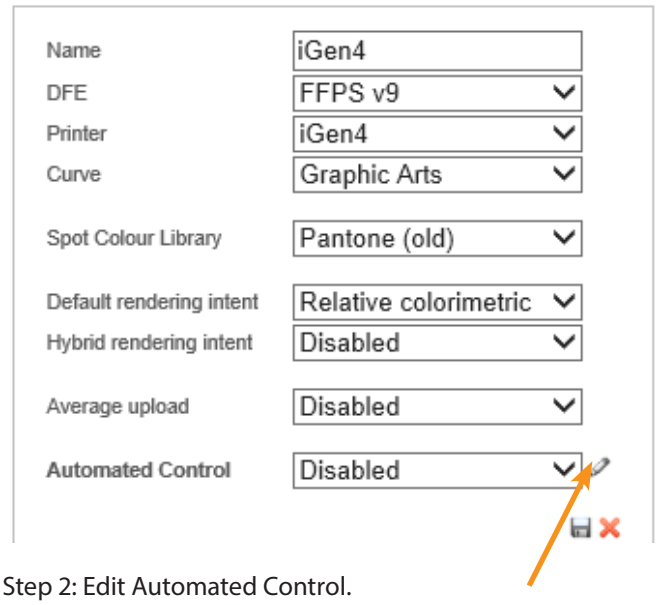
1.5 Step 5: Enable a JMF workflow (i)

Be sure all steps before are totally successful finished. Xerox® IPACM license is active on DFE and SaaS login details are saved in the preferences of the CMI-Agent before set-up the SaaSColorManagement.com service!

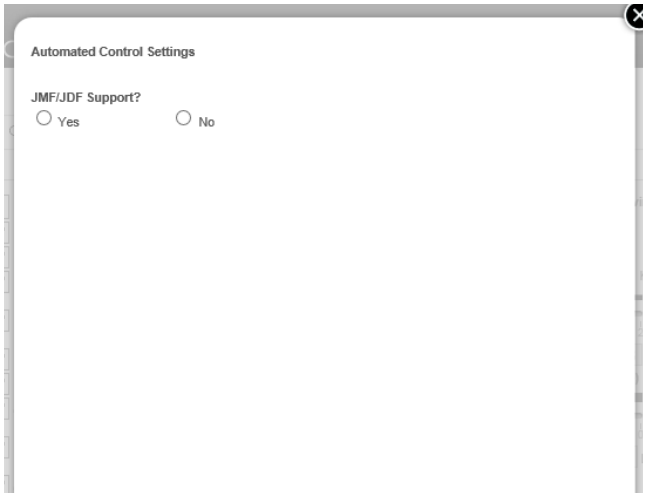
Follow the screens to automate a full automated workflow. DFE must be online and XIPACM license installed.



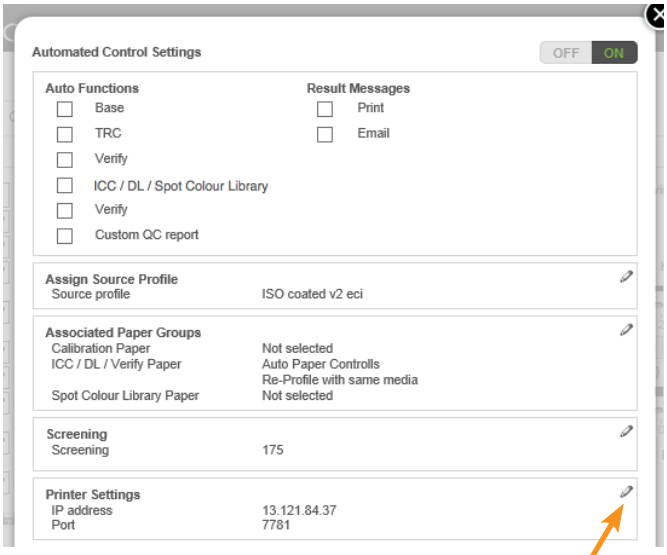
Step 1: Edit Workflow.



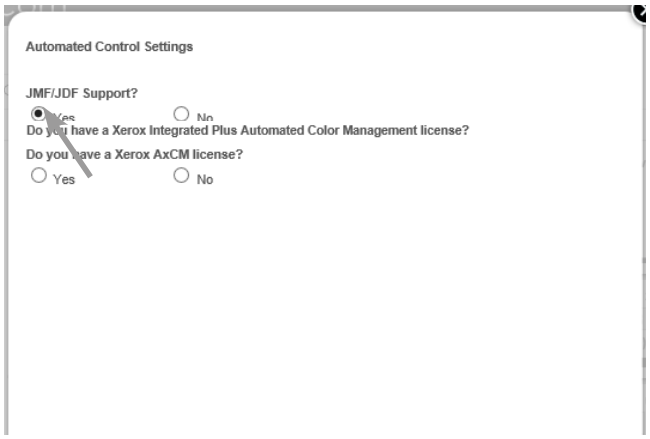
Step 2: Edit Automated Control.



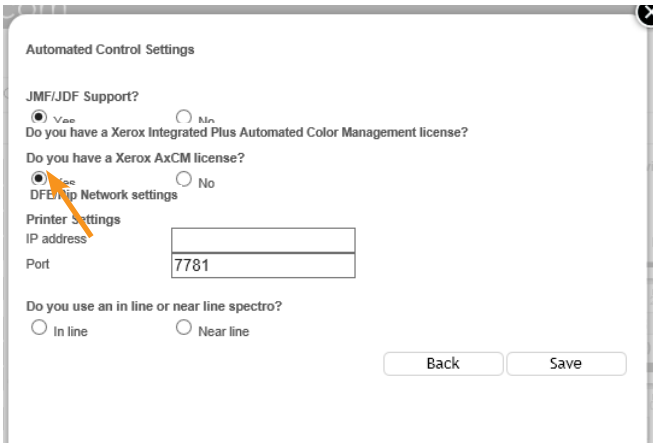
Step 3: Fill in Options and go to Step 4.



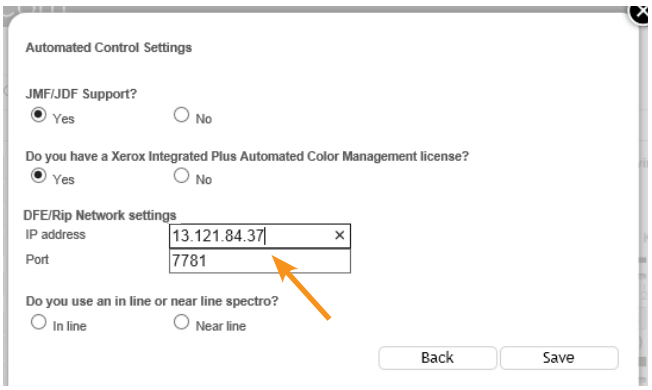
FYI. In case to edit settings again.



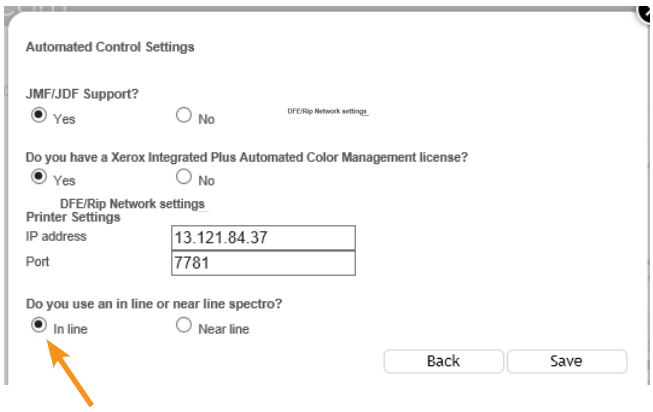
Step 4: Yes JMF Support.
The JMF service can be hosted by the DFE or a stand-a-lone application.



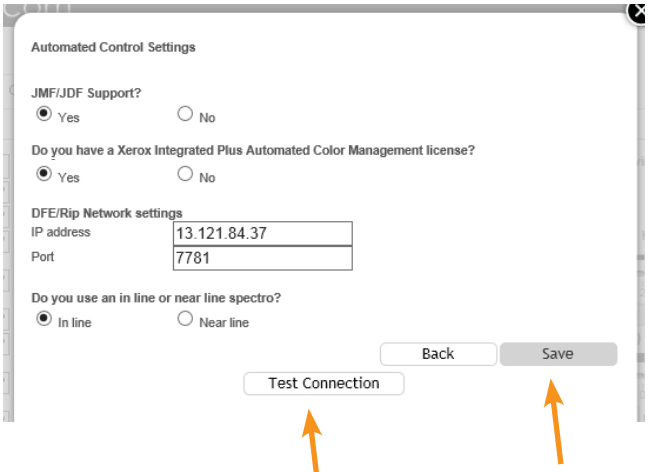
Step 5: Yes: Xerox® Integrated Plus Automated Color Management License needs to be installed on the DFE.



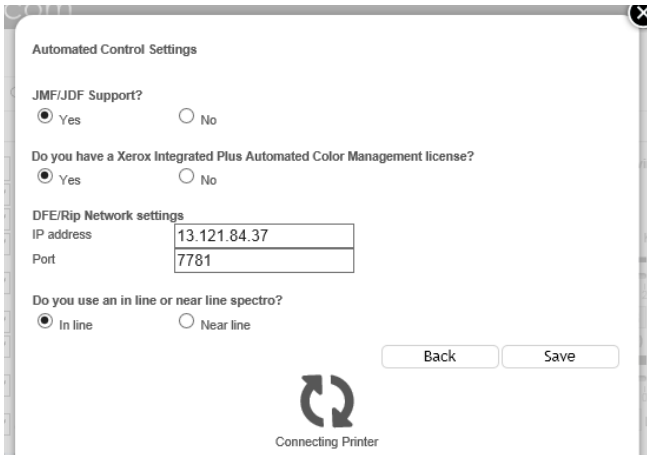
Step 6: IP address & Port. Use the fixed IP address and the JMF port of the DFE. The JMF Port is default 7781 for FFPS and 8010 for Fiery (can be changed).



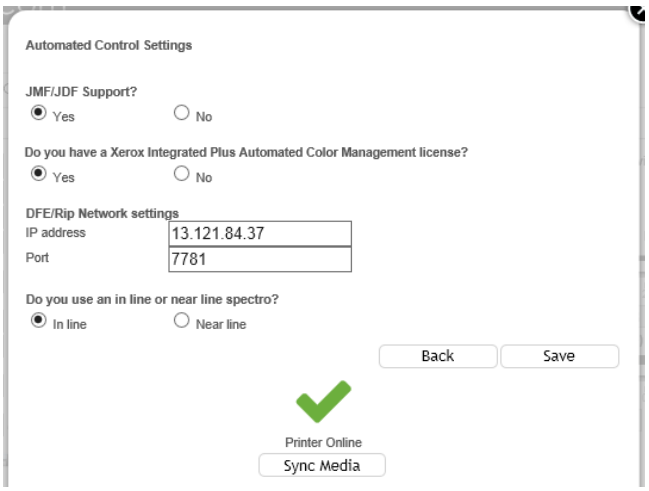
Step 7: Select “In line”. When connected printer is installed with an in line spectrophotometer. Near line spectro or scanner see Chapter 9.



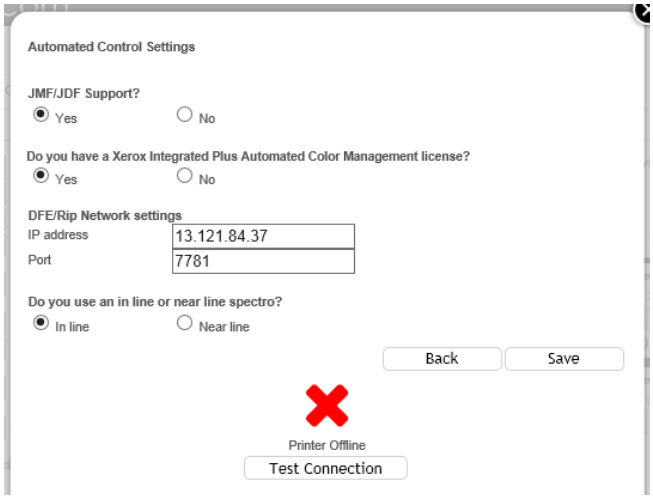
Step 8: Save & Test Connection:
Settings are stored in CMI cloud database.



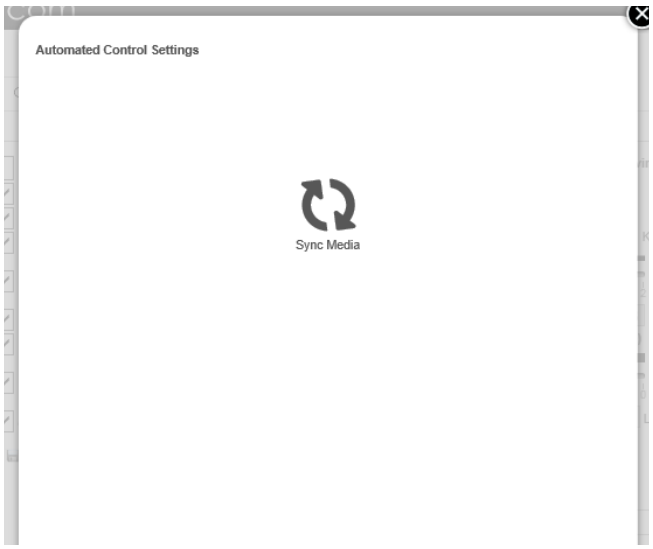
Step 9: Connection Test. The cloud service send via the CMI-Agent a ping command to check the IP address.



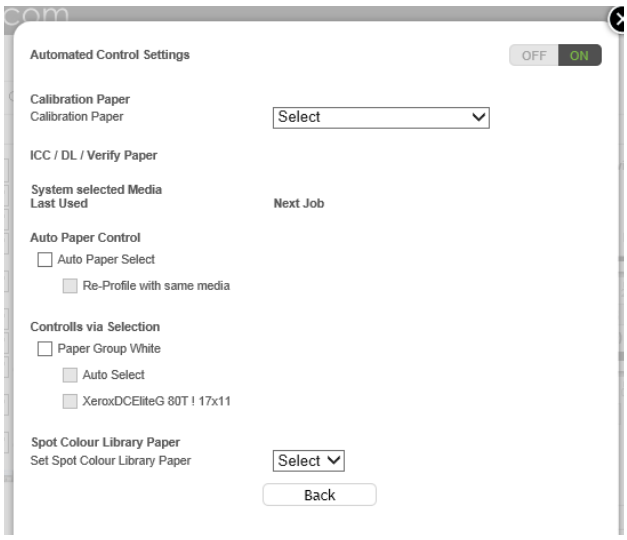
Step 10a: The connection test was successful. Click Sync Media to receive information of all loaded media. Go to step 11.



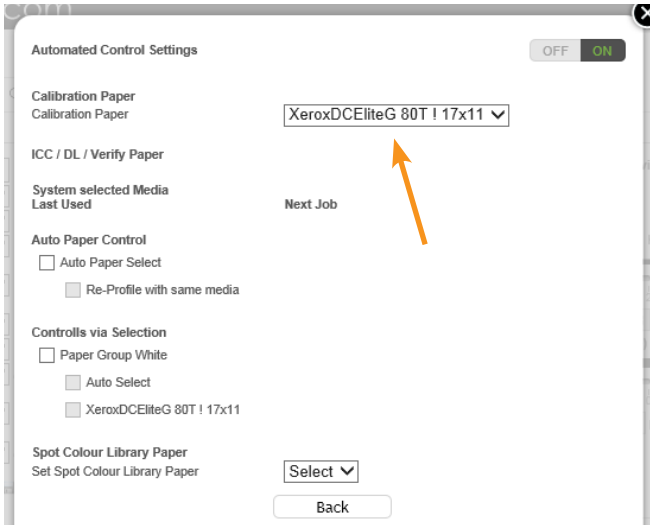
Step 10b: Error when the ping command did not get an answer of the PC then this error is showed. Check given IP address.



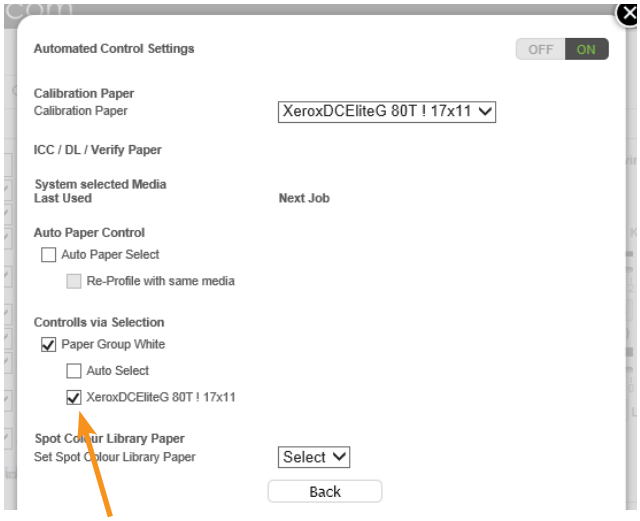
Step 11: Sync Media. The service did send a JMF job to load all media settings.



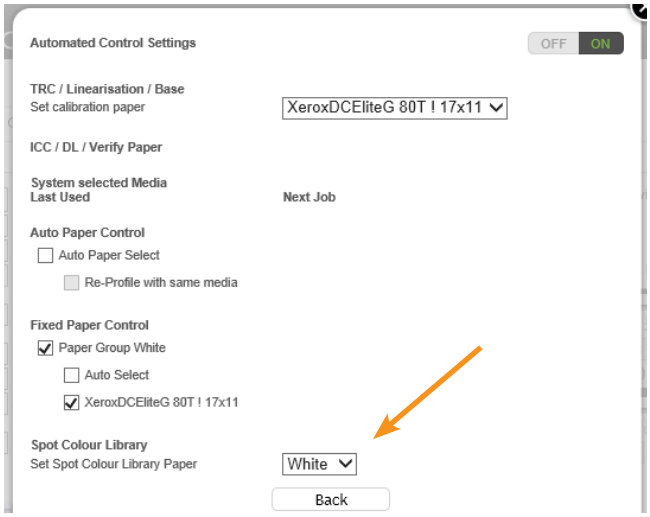
Step 12: Media is loaded in cloud database. Select Media to use in the automated job



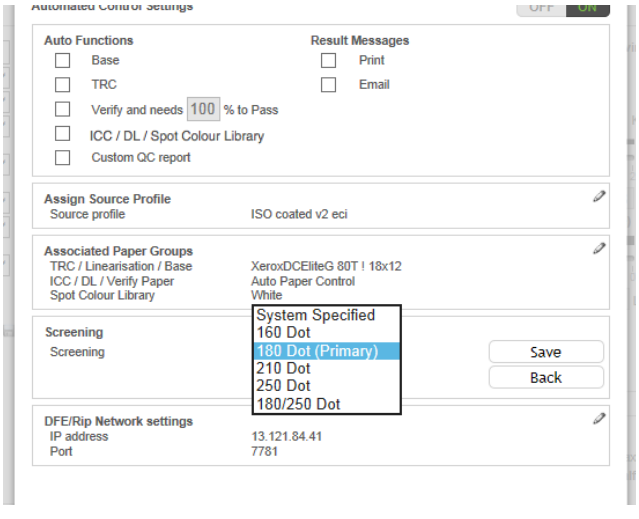
Step 13: Select Calibration Paper (1.4.7). Use only one media type to linearize.



Step 14: Select ICC/DL/Verify Paper. (See 1.4.8) Save mode is: One fixed media.

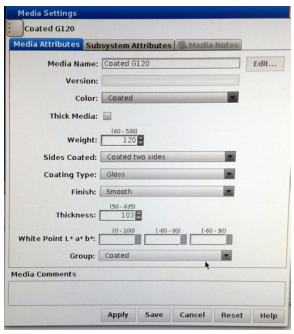


Step 15: FFPS: Select one related Paper Group for Spot library (read 1.4.9). Click Back. (Not applicable for Fiery.)



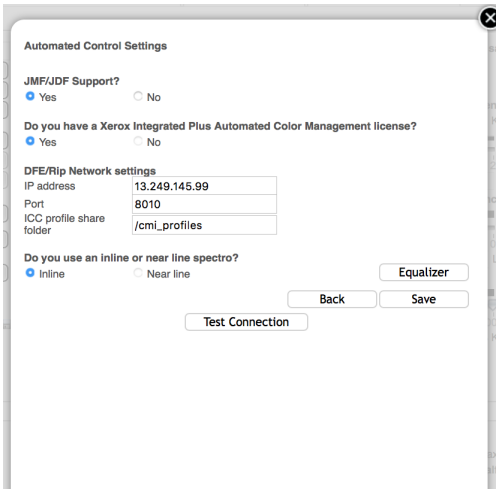
Step 16: Edit Screening to Set Screening. FYI, is visual only after a Media Sync see 1.4.10.

1.5.1 Create Paper / Color groups (i)

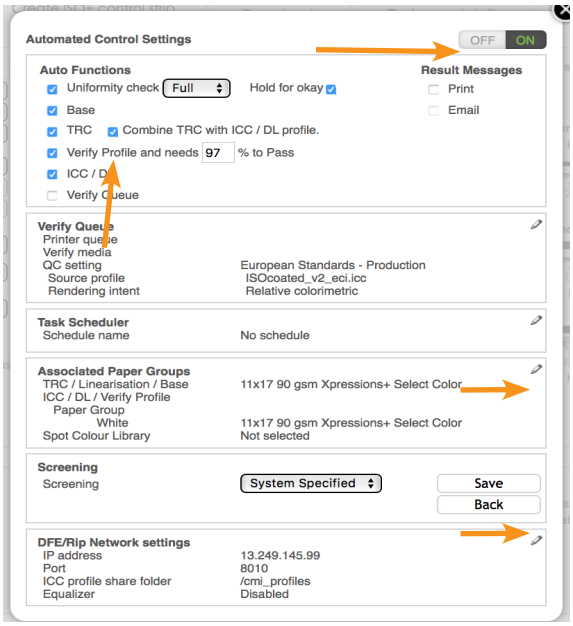


Via Paper / Color groups we have the option differentiate paper types.
This is useful when more then one paper type is used and needs a different ICC-Profile and quality control. Most used groups are: Coated, Uncoated, Yellowish and Carton_Board.
FFPS users: Paper Group and Color must have the same name.
Fiery users: Create a custom Media Color name only

1.5.2 Quick overview DFE/RIP network settings
EFI - Fiery "Inline" (see also 1.5 step by step)



A. Yes to JMF/JDF support?
B. Yes to Xerox AxCM license
C. Give the IP address of the DFE
D. Port is standard 8010
E. iGen 150/5 only: Use the correct path of the shared folder to copy the results of the ICC / DL on the E drive
F. Select ILS
G. Test Connection
H. Go "Back" After a successful synchronize
I: Enable Automatic Control settings in the right top corner
J. Associated Paper Groups and select the used paper groups for calibration and profiling.
K. Select the Screening: System Specfied or use a prefered setting
L. Select the Auto Functions
- Uniformity check (visual check)
- Base (check if TRC is OK)
- TRC (w/o "Combine.." then user must use the DFE calibration)
- Combine TRC with ICC/ DL profile (TRC is part of the ICC Profile and no need to calibrate printer via DFE)
- Verify Profile and set treshold to avoid unnacessary re-ICC-Profile actions.
- ICC/ DL (to create a new ICC-Profile)



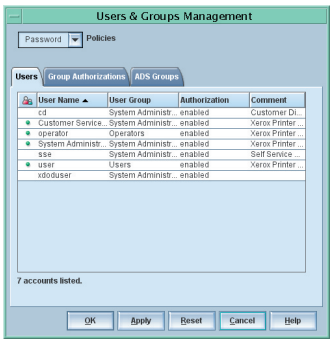
On the Fiery Server in case of an iGen (Not applicable for Versant80)

1. Create a folder on the E drive of the Fiery server the shared folder cmi_profiles. Share this folder with "Everyone" incl "read/write" via the Advanced sharing persions from that folder.

Note: Verify Queue what is avialable with FFPS is not enabled for a Fiery controller.

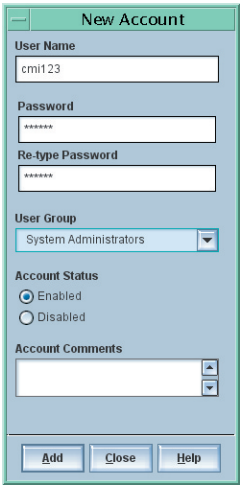
1.6 Set FTP functions for FFPS and load Pantone libraries (i,n,o)

1.6.1 FFPS v6-9 (Solaris)



The FTP actions via the CMI-Agent will use a special login via cmi123.
This account cmi123 needs to be created. Open Users and Groups via the setup tab in the FFPS.
Create cmi123 account with password cmi1234.

Create new user on FFPS
To optimise the FFPS we have to create a CMI-user on the FFPS.
To do so, go to the FFPS terminal and open [Users & Groups Management] by selecting it in the [Setup] menu.



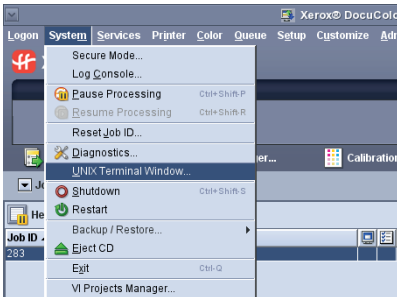
Right mouse click in the window beneath the different users.
Click on [New...] in the drop-down menu. A new window occurs.

Fill in the details of the new user you are creating.

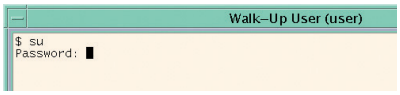
User Name	[cmi123]
Password	[cmi123
User group	[System Administrators]
Account status	[Enabled]

Click on [Add].

1.6.2 Change rights of Pantone related files and folders



First open the UNIX Terminal and login of the FFPS by selecting it in the [System] menu.



Type [su] behind the $ and confirm that with [Enter].
As Password you type [service!]* and confirm with [Enter].

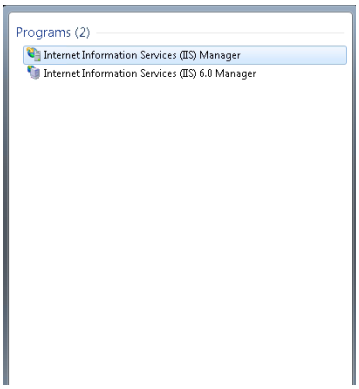
Pantone libraries will also be automatically optimized. This needs to change the rights of the Pantone custom library with the chmod 777 command.

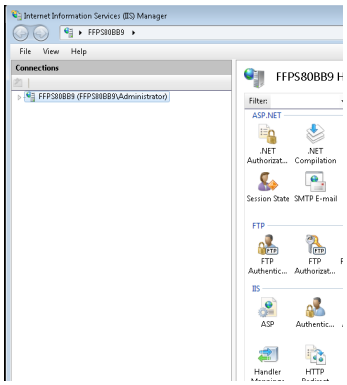
Behind the # you type [cd /opt/XRXnps]. Confirm with [Enter].
Type [chmod 777 configuration]. Confirm with [Enter].
Type [cd configuration]. Confirm with [Enter].
Type [chmod 777 pantone_custom]. Confirm with [Enter].
To check if the settings are correct type [ls -l pantone_custom] behind the #.
Confirm with [Enter]. If the settings are OK the text [-rwxrwxrwx] are on the front of the line that ends with [pantone_custom].

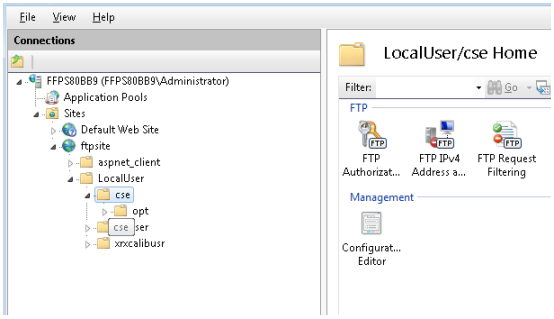
Back-up original custom Pantone library. In the same directory start with the following commands.
Behind the # you type [cp pantone_custom pantone_custom_org]. Confirm with [Enter]. This copies the original pantone_custom file as back-up.
All needed actions are now done. Type [exit] confirm this with [Enter] and again type [exit].
Confirm with [Enter]

1.6.3 FFPS v2x (Windows)

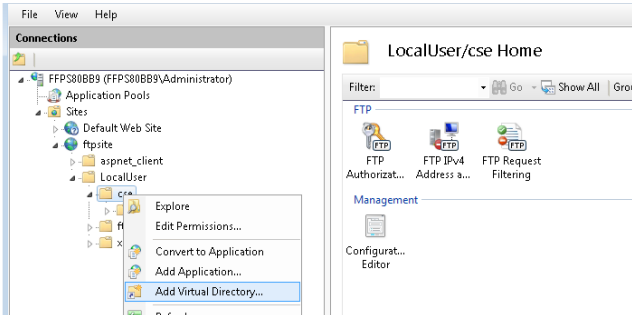
Find via the start menu the program: Internet Information Services (IIS) Manager and start this program.



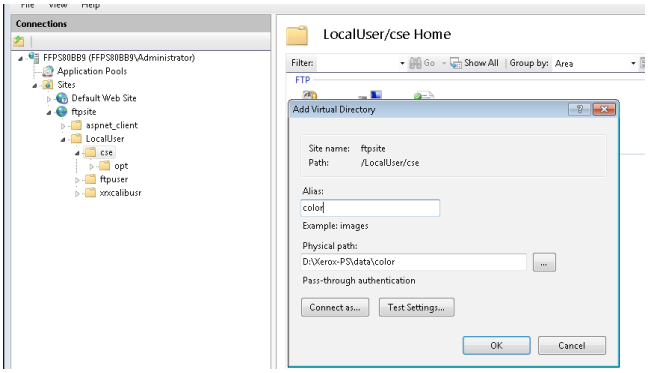




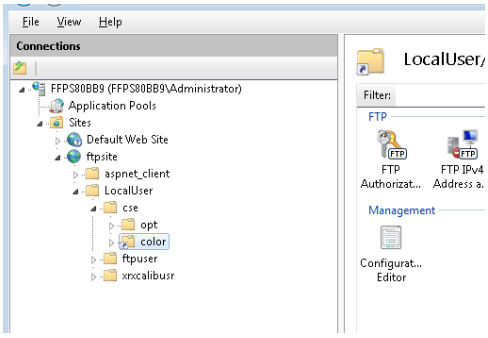
Open under connections the path: FFPSxxxxx (FFFPSxxxx\Administrator) Sites\ftpsite\LocalUser\cse



Open “Add Virtal Directory” with a right mouse click on the folder cse.



Make the Alias “color”
The Physical path is: D:\Xerox-PS\data\color

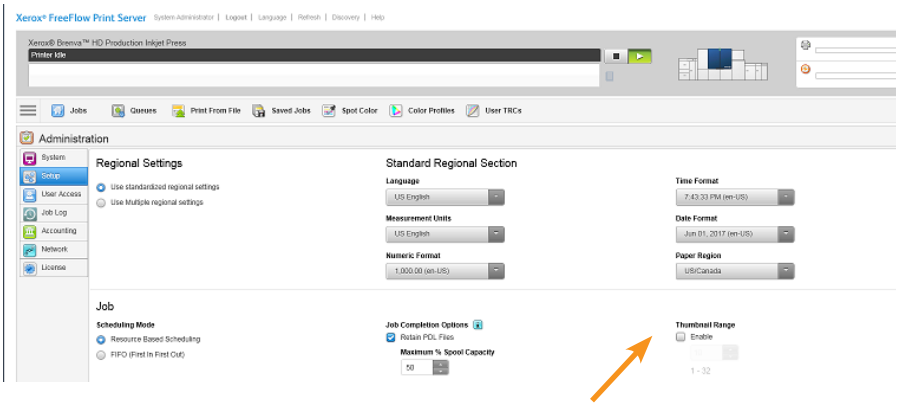


And click OK.
Afther that the alias “color” is add in the list and can be used to FTP files in this folder.

Stop this program (IIS).

Please don’t do..

Disable the option Thumbnail Range in case the measurements of the ILS are not received in the web service. Should be fixed with the latest software versions.



1.7 Install near line measurement device X-Rite iSis2Net (n)

Near line does use the X-Rite iSis2Net spectrophotometer. It must be connected in the Local Area Network with a fixed IP address. The CMI-Agent is able to retrieve the measurement data from the iSis2Net and forward to SaaSColourManagement.com. Each measurement target will have its own unique ID and barcode to add the measurement data in the CMI database in the right workflow. No need to measure targets in the same sequense as printed.

Unlock the transport guard.

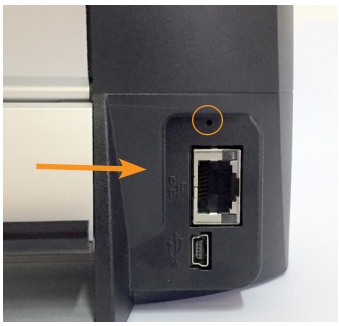
Conner the power supply.

Connect the Ethernet cable.

Guide the cable in the tray to avoid interfering with the measurement target.

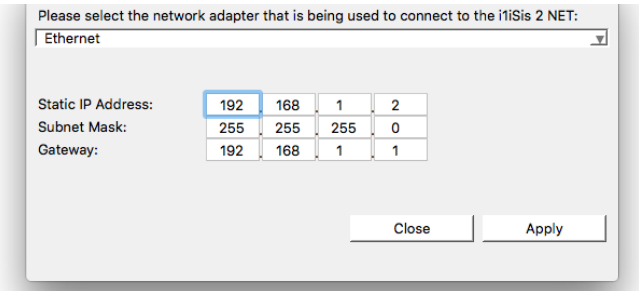
1.7.1 Set iSis2Net to correct IP address

- Download the X-Rite i1iSis2Net configurator from SaaSColourManagement.com / downloads / software. A Windows and Mac version is available.
- Find a fixed unused IP address for this device, your Subnet Mask and Gateway. Double check on a Windows system via the start menu, cmd, ipconfig the Subnet Mask and Gateway, via ping command check if the choosen IP address does not answer back, or on a Mac, open via system preferences, network settings the Subnet Mask and Gateway. Open a terminal to check via the ping command if the choosen IP address does not answer back.
- Enabled Firewals and network restrictions can block communication to the iSis2NET.
- Connect the iSis2Net with a network cable in your local network, a crosslink cable works also but only via a Windows PC. When multiple iSis2Net are connected please disconnect the others and only the one in the network what needs to be configurated. Start the application i1iSis2Net configurator.
- When an error accures reset the iSis2Net with a paper clip via the reset button it is the small hole just above the Ethernet port. Hold it for 3-5 seconds. This will set the iSis2Net back to default and delete all measurement data.

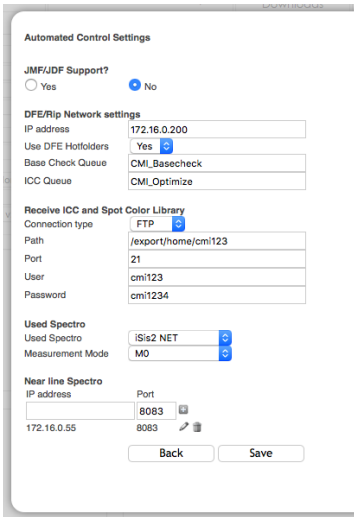


- Select “Ethernet” in the iSis2NET configurator and fill in the correct values and hit Apply. W

When the new values are saved correct into the device the application will show a success message, if not reset the iSis2Net back to default and redo this action.



1.7.2 Select iSis2Net in SaaSColorManagement.com



The CMI-Agent with SaaSColorManageemnt.com can collaborate with muliple iSis2Net systems.

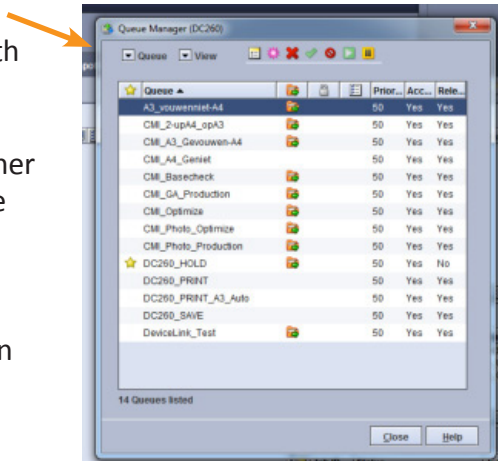
- Go to the Expert page and select the automated settings as part of the Workflow Settings.
- Choose iSis2NET under iSis2NET with measurement mode M0.
M1 or M2 is possible but only used by experts.
- Add the IP address of the iSis2NET under Near line Spectro.
The device works with a standard port 8083 and only be changed by an expert.

Guide the cable in the tray to avoid interfering with the measurement target

1.8 Use hot folders for semi-automated control (n,o)

Controlled queues via hot folders
To set-up a process controlled workflow for any printer, hot folders are used to print CMI targets and ftp commands or shared folders are used to save ICC-profiles, Device Link profiles and Spot colour libraries (FFPS only). JMF/JDF is not supported for Near line, Off line or Manual driven CMI workflows.

Create the following printer queues + enable the hot folder option in your DFE:

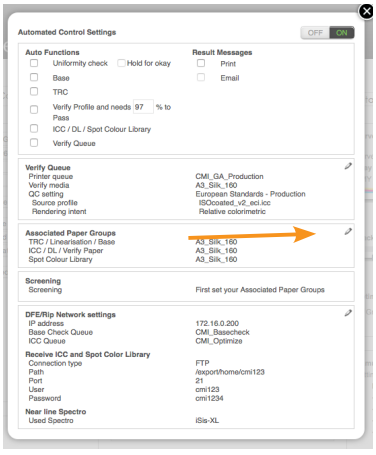


CMI_Optimize.
Printer queue without color management enabled (direct) but with TRC. This queue will be used to print the ICC profile targets on a fixed paper stock. For other paper stocks create an extra queue and workflow in SaaSColorManagement.com. With dry-toner printers print a minimum of 5 or just enough to have a high stable output.
CMI_BaseCheck
This queue is used to check hardware stabiliy via the uniformity check and the calibration curve via the Base check. The calibration paper is selected, color management is switched off (direct) and print a minimum of 1.
CMI_Production and other productions queues which needs to be verified if the queue is producing the right quality. Any queue can be selected via the Verify queue option in SaaSColorManagement.com

The CMI-Agent will publish automatic one hot folder in the Documents/CMI-Agent folder to simplify all uploads of any measurement data into the cloud. The Web Server knows based the color code of the target the related printer in your environment.

1.8.1 DFE/RIP network settings Xerox FFPS:

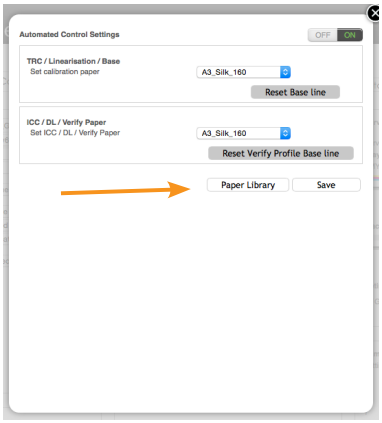
A. No JMF/JDF Support: No
B. Give the IP address of the DFE
Use DFE Hotfolders: Yes
Base check Queue: CMI_Basecheck
ICC Queue: CMI_Optimize
C. Set connection type to 'FTP'
/export/home/cmi123
port 21
User cmi123, Password cmi1234
to copy the ICC/DL profiles to DFE and
Spot Color libraries will be copied to its default locations.
To overwrite Pantone libraries see instructions
in FFPS setup manual chapter
D. Select the used spectro-photometer
Save settings and go back

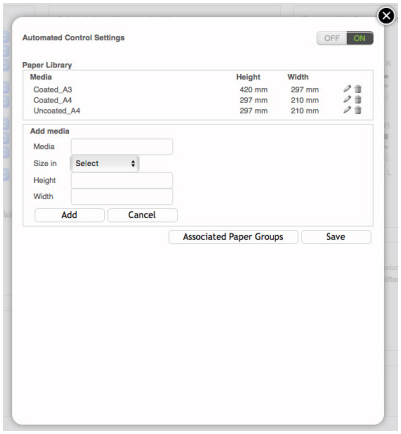


The next image should be showed to open the Assosiated Paper Groups. This can be done with the dir button at the right side of the section.

The first step is creatig a library of substrates what needs to be optimized and verified. Letter / A4 is a perfect fit for these workflows.

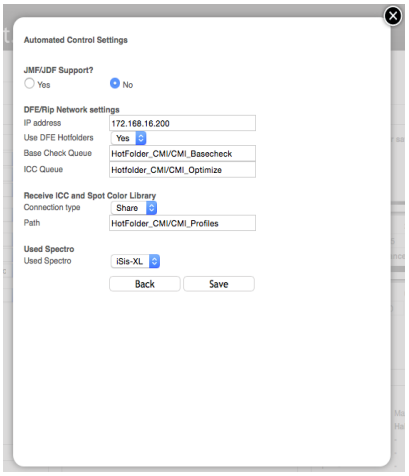
Give name, dimensions in mm or inches and save. The system will create on the fly a best fit target for this paper size and selected spectrophotometer.





1.8.2 DFE/RIP network settings EFI - Fiery

A. Give the IP address of the DFE
B. Use DFE Hotfolders: Yes
Give the correct path of the shared folder
Base check Queue: CMI_Basecheck
ICC Queue: CMI_Optimize
C. Select the used spectrophotometer
D. Save



On the Fiery Server

A Create a folder on the E drive of the Fiery server HotFolders_CMI. Share this folder with "Everyone" via the Advanced sharing persions from that folder.

B Create a hot folder via the Hot folder application CMI_BaseCheck what is linked to your calibration paper only and color management is switched off via By-Pass conversion, 1 print

C Create a hot folder CMI_Optimize_C also with "By-pass conversion" and with the related paper stock (here the C is used for coated) to create the IDD/DL profile, your fixed paper stock, and no image or text improvement, settings, see also the CMI Fiery DFE manual. 5 prints. Note, in case other paper must be profiled create extra hotfolders and name them like CMI_Optimize_U for uncoated

D Create a hot folder CMI_Production_C or save as preset the default production queue. 5 prints When other paper stocks are profiled cretae also a hot folder for that. Like CMI_Production_U to check the uncoated profile

Tip: Don't use "server Presets" to define the hot folder settings. When a preset change the hot folder is also changed.

1.8.3 DFE/RIP network settings Caldera

The IJP2000 can be add in the automatic workflows of CMI. This is also documented in the Manual of the Caldera DFE “RefManual” under Hotfolders Admin page 138.

A. First create a folder named CMI_Hotfolder in /home/public/CMI_Optimize
The hotfolders inclusive the settings can be set via the Hot folder Admin. Select Special in the application bar then HotFolders.

B. Create a Hot folder Named CMI_Optimize and select the Hot folder directy created in step 1.
Activate the Hot folder to process images.
Delete After WorkFlow: The incoming files will be deleted after processing.

C. The associated workflow (page 48 of the RefManual) must be created beforehand. Drag & drop FileManager into the Edit HotFolder window. When FileManager is open, select the directory where all files will be transferred and printed.

1.8.4 DFE/RIP network settings iController PDF Rialto

The Rialto is controlled by two PC’s. We have only direct access to the first. When the main folder of the snapshots [RialtoSharedJobs] is shared then jobs can be forwarded via the CMI-Agent to this folder to print automatically CMI targets with the correct settings.

The ICC-Profiles can be saved automatically in the folder on a USB key connected in the iController like E:\Profiles and installed via the Rialto import function. The ICC profiles can be selected in a snapshot.

We high recommend to use Device Link profiles because of the preserve and edit options. See manual ‘Device links’ in the download area.

CMI makes calibration curves and combine these with the ICC-/DL profiles. Select ‘Front and back’ in case the output is different between the sides .

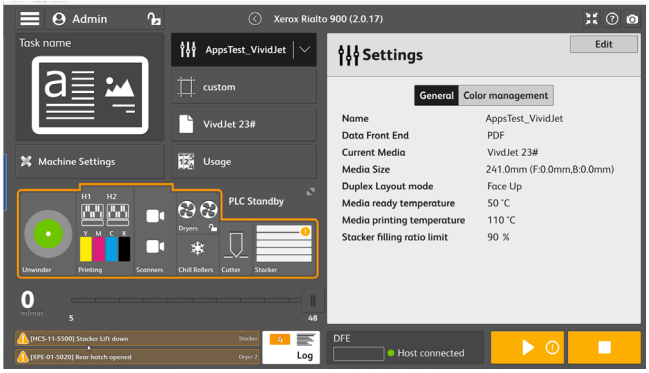
When the default ‘Front and Back’ is still not enough enable ‘Match Front and Back’ This to take the lowest common denominator of both characteristics.

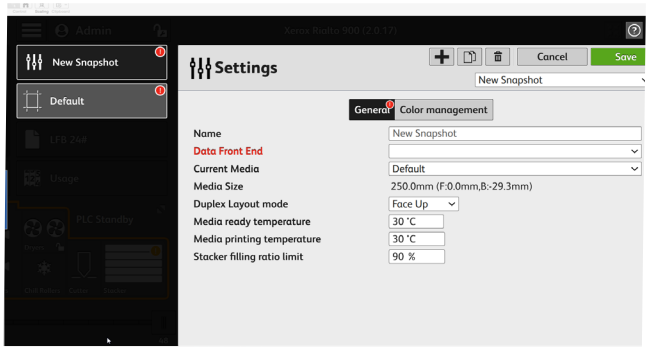
Spot color reports are saved in the Profile directory with the best separatin value to match a spot colour. These values can be used in combination with the Device link editor.

In case of security that the CMI-Agent PC doesn’t have direct access to the iController all CMI targets and ICC-Profiles can be copied by USB key on the iController.

Installation steps:
Create automatic workflows on the iController to print the targets.
Go to C drive of the first PC of the iController. Find the folder named RialtoSharedJobs’. Share the folder RialtoSharedJobs with Everyone Read/Write via the permissions of that folder.
Go to the D drive and share the Profile folder with Everyone Read/Write via the permissions of that folder

Login as **administrator** with password: **leprecieux** in the User Interface of the iController



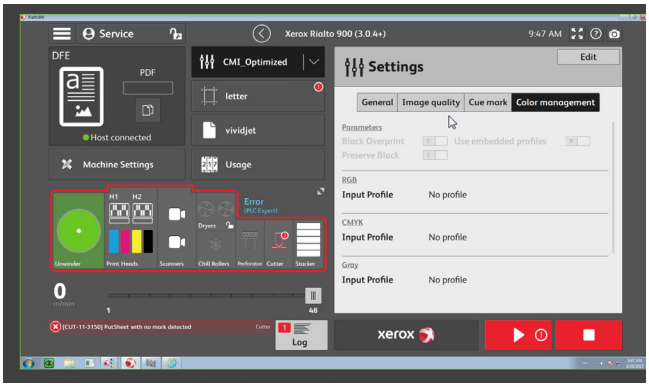


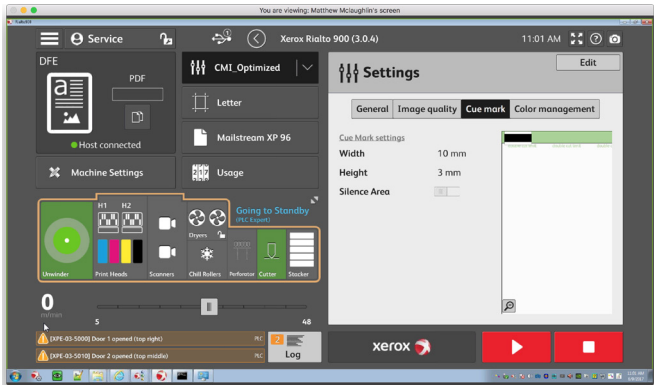
Create two snapshots

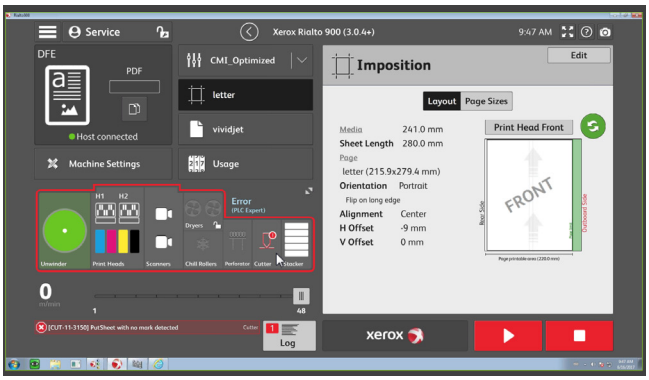
1. Named **CMI_Optimize** to build ICC / DL profiles.
   A snapshot without Color Management enabled and the imposition that the page is left aligned.
2. Named **CMI_Production** to Verify total quality
   A snapshot with the same settings as a normal production workflow. Select here the new created DL profiles. For the Front and if applicable a different for the Back.

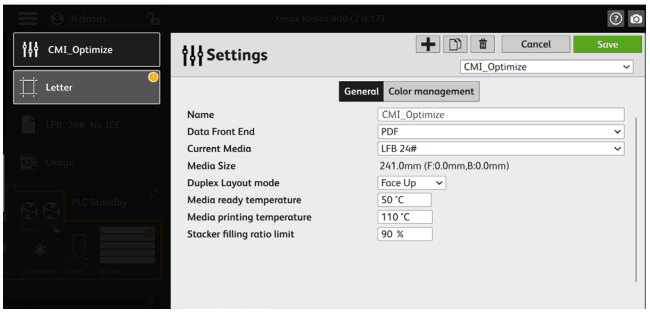
1: Create CMI_Optimize.

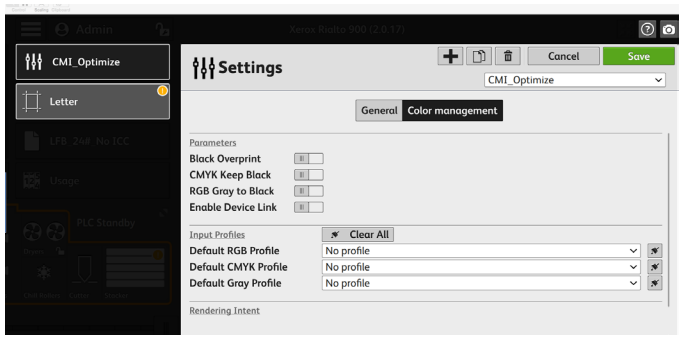
This workflow is to print the targets for caibration and profile targets.
Clear all input, output and device link profiles. Set the imposition to left aligned so we don't need to cut the sheet afterwards to measure it with the iSis2NET.

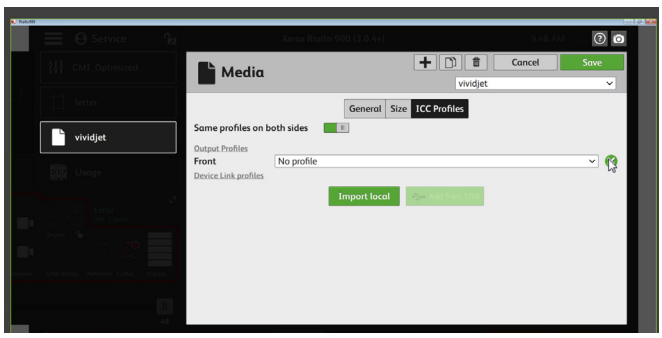






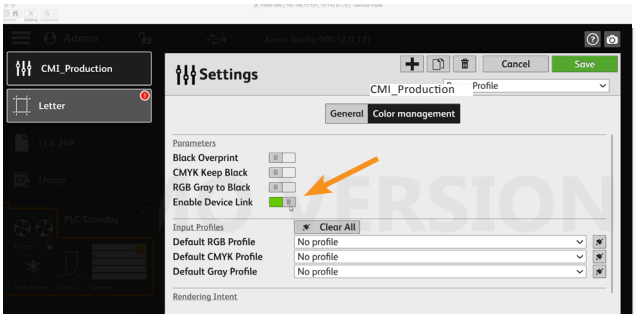


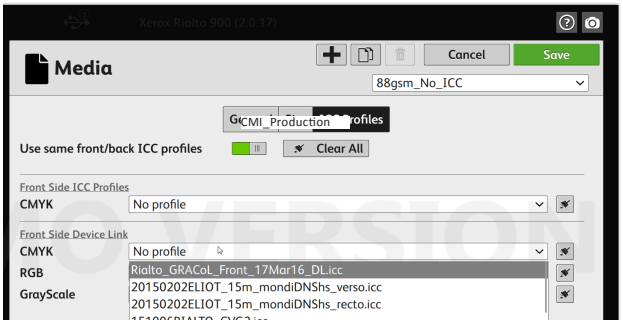


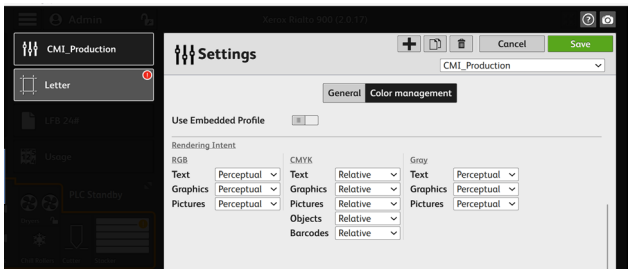


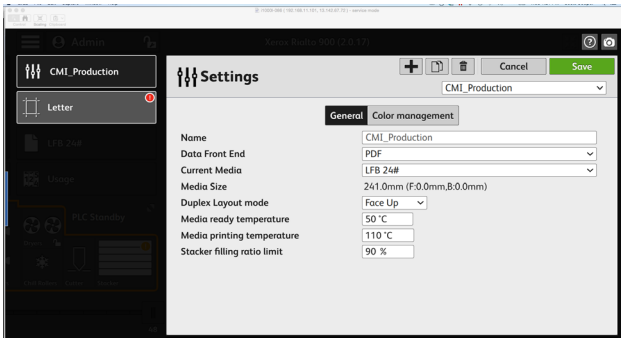
2: Create CMI_Production, same as the CMI_optimize but now with the Device Link enabled. This workflow is to verify the quality with the latest profiles selected.

Activate ‘Enable Device Link profile’. Go to Media and select the new created DL after its created and imported via the USB-key.



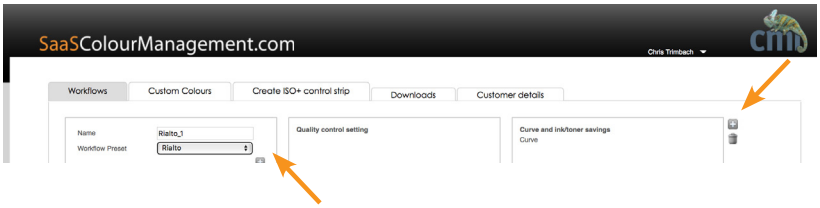


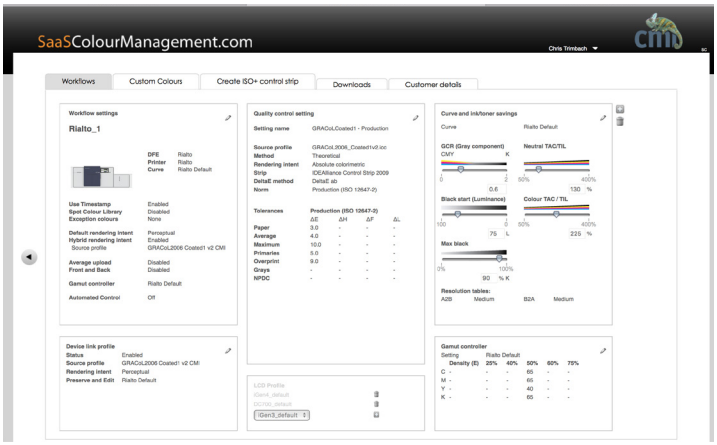




1.8.5 Create an Rialto automated workflow in CMI SaaSColorManagement:

Create a new ‘Rialto’ workflow in the CMI service SaaSColorManagement.com via the Expert page.



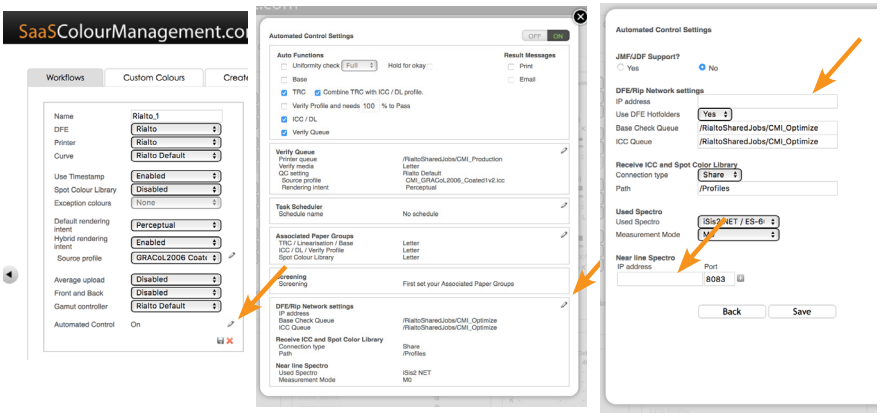


Click on the ‘add’ sign [+] to start.
Give the new workflow a name
Select the Rialto preset to select all default Rialto settings

All default items are selected inclusive the Device Link profiles , curves and quality control settings.

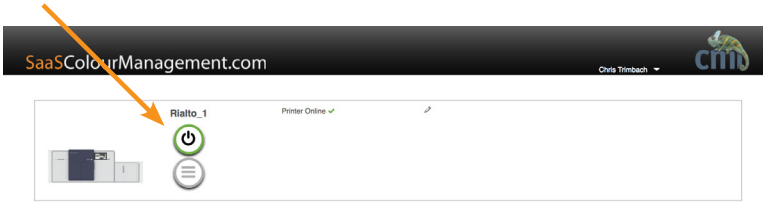
A. Open ‘Automate’
B. Open the DFE/Rip Network settings.
C. Give the IP address of the DFE & give the IP address of the iSis2Net and click on the add [+] button.

Save settings
Close this window.



Go to the operator page so you can hit the top button (Full check) to print the calibration curve and ICC profile. The calibration curve will be automatically combined in the ICC profile.

Go to the operator page and select the top button to do the Full check.

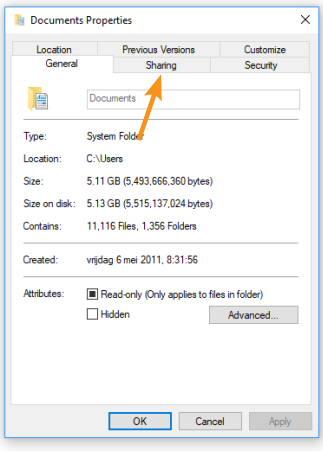


When this process is completed the ICC and Device Link profile must be found in the shared Profile folder on the USB stick. 1.8.5 Create an Rialto automated workflow in CMI SaaSColorManagement:

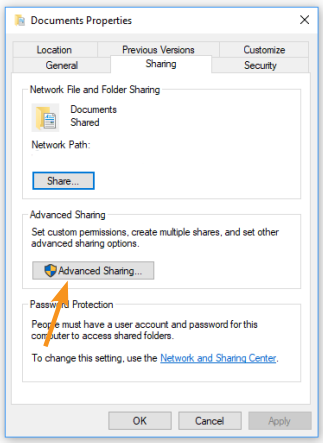
1.8.6 Print to a shared folder when hot folders is not an option

In case the used printer has no option to print via a hot folder the service can save the print files in a shared folder, this folder can be on the same PC what runs the CMI-Agent.

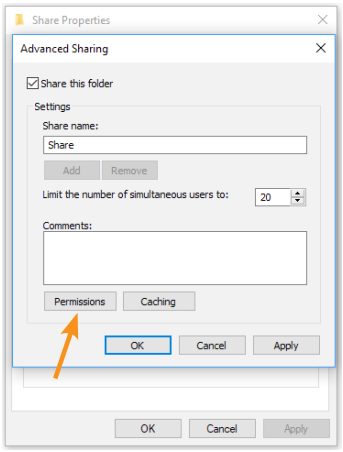
1: Create a folder on the Windows PC to save the print targets as PDF and ICC-profiles.
2: Open the properties of this folder.



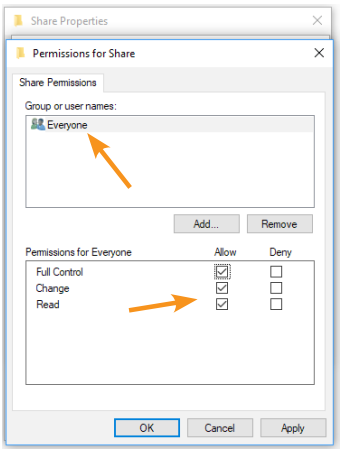
Open Sharing



Advanced Sharing

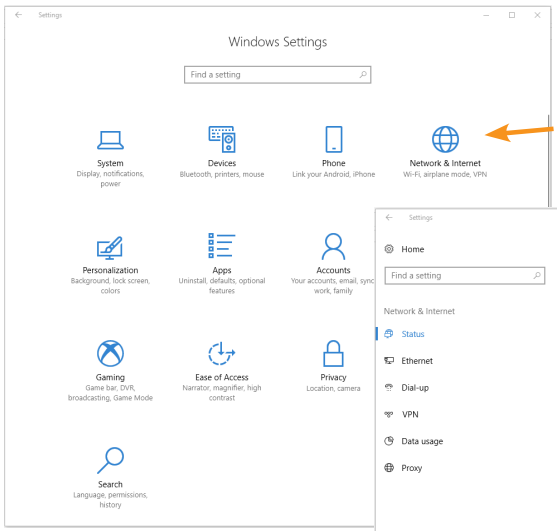


Permissions

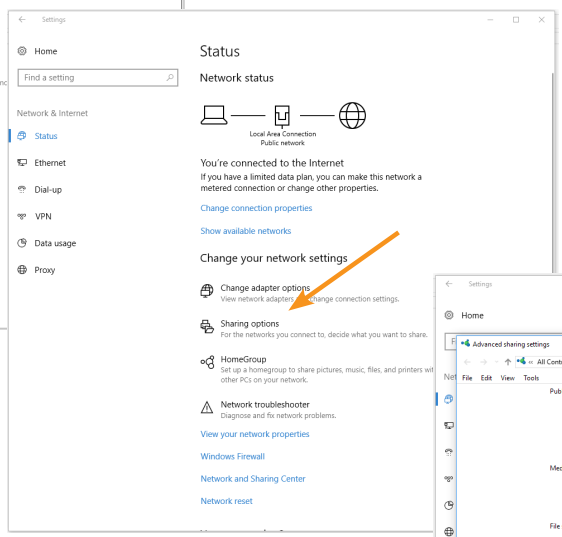


Everyone all options

When it is not a local folder but the shared folder is on a different Windows PC switch off the “Password protected sharing” in the Windows Settings.

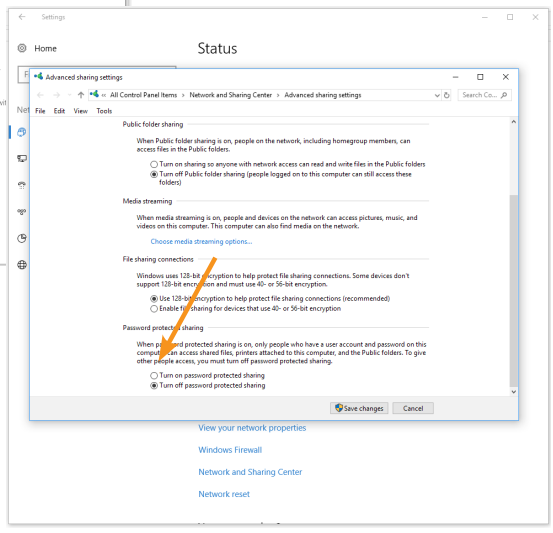


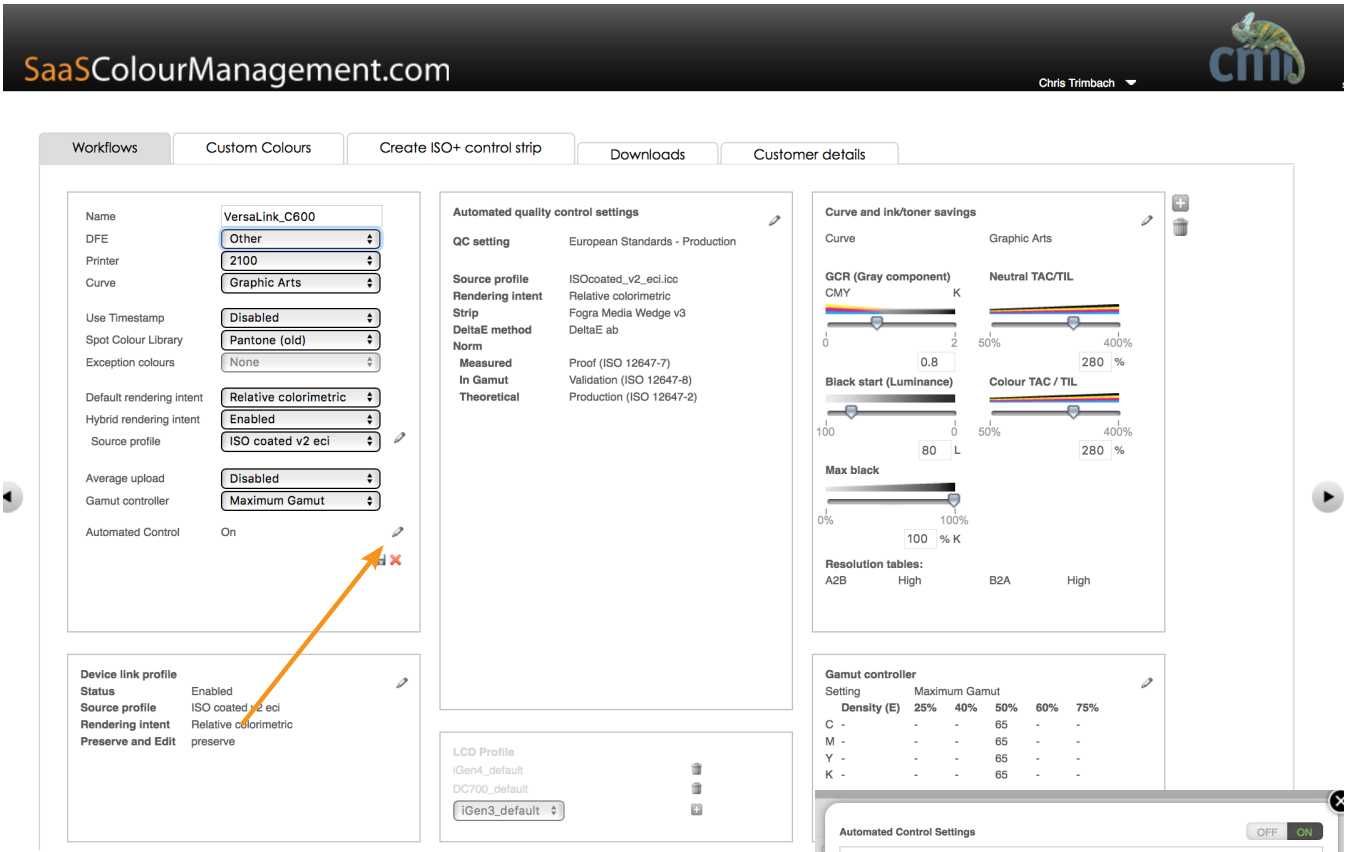
3: Network & Internet



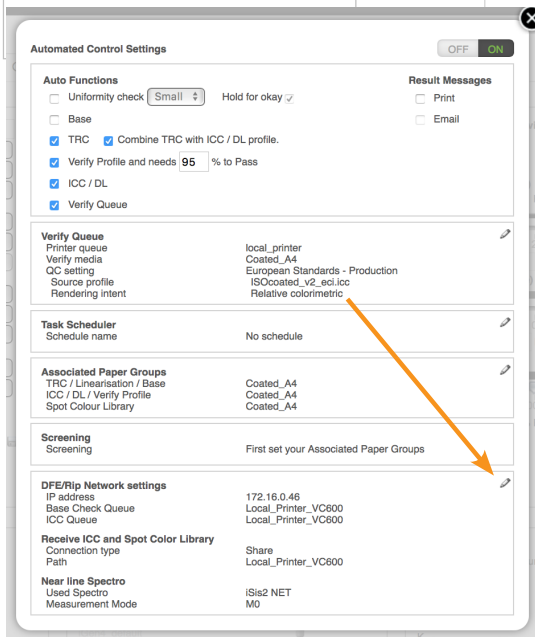
4: Sharing options

5: Turn off password protected sharing.





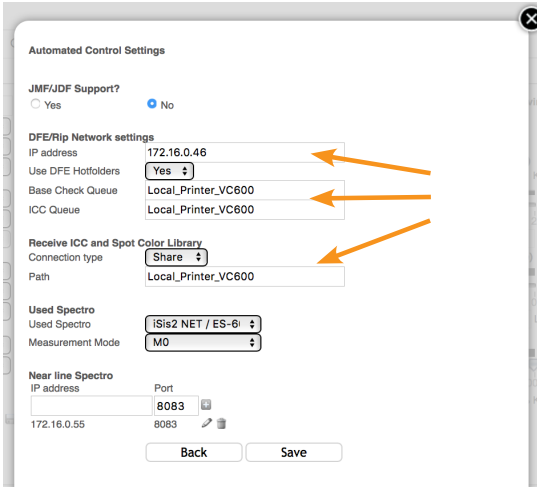
6: Open the Expert page of SaasColourManagement.com
7: Open the Automated Control settings via the Workflow settings of the specific printer.



8: Open DFE/Rip Network settings.

9: Give the IP address of the PC with the shared folder.

10: Give the name of the shared folder or the path when it is a sub folder from the shared folder.

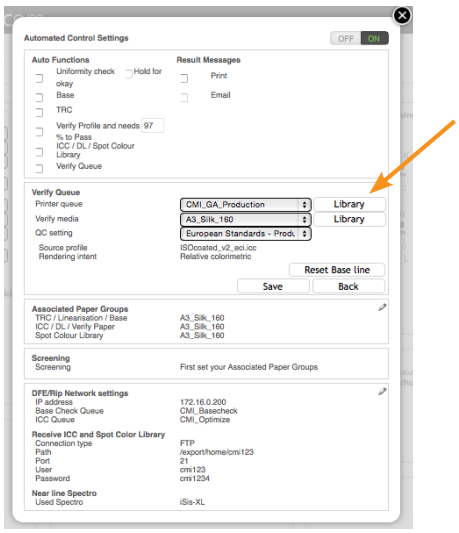


1.8.7 Verify Queue

Before a queue can be verified, the system must have made an ICC / DL profile to calculate the aims. After that, this step can verify any queue if it hits the quality level. Theoretical, In Gamut and Measured.

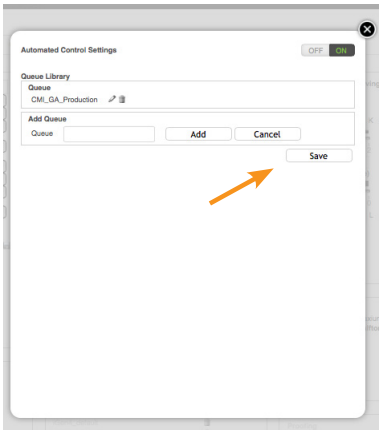
Create in SaaSColorManagement the following libraries

A. Open the Verify Queue via the 'edit'
B. Open the Media Library,
the same is used as set in the
Associated Paper Group.
C. Open the Printer queue Library.
List the used productions queues what needs to be verified.
The system will send Verification targets to these queues.



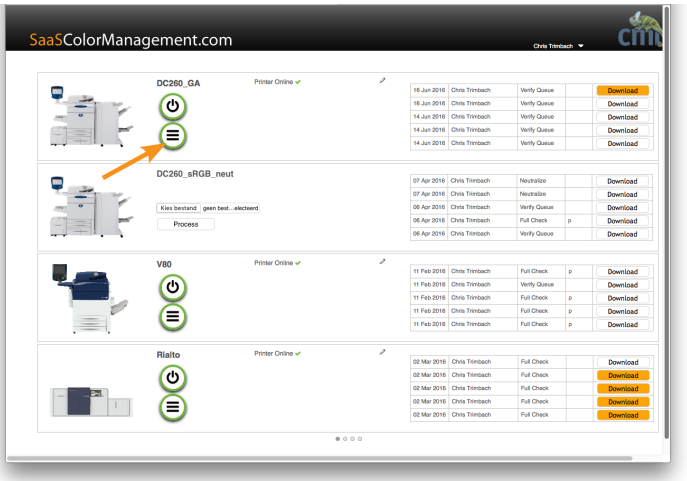
D. Add your production queues in the Queue library
This queue must have a hot folder too see above
E. Save

F. See image above
Select the used paper stock
Select the QC setting.
QC settings are defined under Automated quality control setting in the Expert page of the serivce.

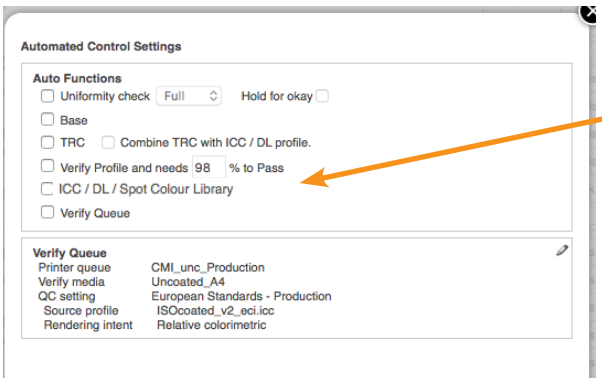


Warm-up your device, calibrate/linearize and make an ICC-profile to verify the queue. Do it twice to see also the comparison between measurements. The base line is automatically refined in time.

To check the quality of a production queue go to the Operator page and select the lower button of the workflow. When the button is not enable "Verify Queue" see above. When the button is visual but gray then we have no completed ICC profile created. This can be done via the Full-Check button (the first).
Hoofer over the button to see which tasks will be started.



1.9 Step 6: Switch on tasks (i,n,o)



Enable the tasks Uniformity check, Base, TRC, Verify and ICC /DL to test the tasks it also start the calculation of the first Base Line.
The Base Line can be reset after the first tests.

1.9.1 Auto Functions

Enable all tasks for the automated control this via the Expert page/Workflow settings / Automated Control or via the edit button on the operator page.

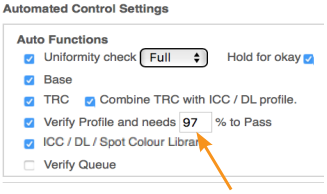
Uniformity check:
Before any optimzalization can be started a system needs to print all channels uniform. From site to site and from top to bottom. It works with 2 pages %CMY & %K. The service can be set in pause to get an okay via thump up / down.
Select "Full" to print special 12 pages or the "Small" to print 2 pages only.

Base:
The base check is needed to validate the quality of the linearization curve / TRC. The service checks first if the printer is repeatable between prints (Sheet2Sheet), if not the service prints a set of warm-up prints.
When the Base2Baseline fails the service triggers to create a new TRC / linearization curve.

TRC:
If needed, the service asks to- or starts automatic the calibration process. In case the TRC needs to be created manual buttons are showed to continue with the next step or stop the process. In case of the FFPS2 /iGen5 the system will trigger automatic the PSIP to calibrate and when the option "Combine TRC with ICC/DL profile" is selected the system will print the TRC target to create the TRC/linearization curve. In all other cases the DFE calibration is manual and the user needs to start the default printer calibration process.

Combine TRC with ICC/DL profile:
To simplify the calibration process the service can add the TRC curve in the ICC / DL profile. Also when the Base check fails the ICC profile and Pantone libraries will be updated with a new fresh calibration fully automatically.

Verify Profile:
The service will generate a color managed set of patches (pre-separated) using the latest created ICC profile. The set is printed through the automated color management queue. The results are compared with the ICC Baseline (Measured) and with calculated color values (Predicted). In case of a result with a value lower then set (default 100%) then the system triggers to create a new ICC profile (if enabled). The verification method is agnostic. It validate the accuracy and repeatability of any print process with any media. (FFPS/Fiery)



..and needs xx % to pass: (FFPS/Fiery)
Avoid unnecessary profile creation. It is not always in companies interest to create a new ICC- or Device link profile when the aims are just not reached.

To decrease start-up times and still deliver correct quality levels change the 100% to levels like 97. ICC profile creation is now triggered when it is lower than 97%. Check in time the output visual to agree with this QC level. Easy to set the level a percent lower and check again this to decrease the time and material for the process control.

ICC/DL/Spot Colour Library: (FFPS)
In case the verification of a Verify task fails the system makes a new ICC- or Device Link profile and if enabaled also a new Spot Color Library. When the ICC / DL profile is created the system will replace the old profile on the DFE and the Custom Spot colour library will be replaced by the new created library.

1.9.2 Result Messages
A list of actions and the quality report can be printed or forwarded to an e-mail address. This to analyze results, take extra action based on that or confirm management that systems are checked and in specifications.
Print: After a job is finished the results are printed on the device.

1.9.3 Sync Media (FFPS/Fiery)
The system will start a Sync via JMF to find all loaded paper stocks in the printer. When the CMI-Agent or the DFE is not online the Sync media will fail and gives a related error message and these settings can not be made. When Sync Media is successful finished the next options are showed and can be set:

1.9.3 Associated Paper Groups (see also 2.4 paper groups)
This to specified which paper types are used for calibration, ICCprofiles and the spot colour library. Create first paper groups for each paper type what needs a specific ICC profile on the DFE. No need to maintain ICC profiles for each in-house paper specification. Via a JMF sync with the DFE all paper groups are listed or make your own paper library in case this JMF option is not enabled. All tasks needs to be printed via fixed paper type(s) or via -rules. Fix or set rules which paper group(s) or type(s) are related to the tasks of an automated job. When no paper types or rules are set it is not possible to select tasks because of missing relationship with paper specs see also 1.4.11-15.

1.9.4 TRC / Linearisation / Base
Set the calibration paper. The system must have one fixed paper type to create a calibration curve to check the 'Base'. Select a good stable paper type what is always available. New calibration paper can be selected afterwords but should be avoid to a minimum. If no paper is selected then it is also not possible to start a Base or TRC task.
The selected paper type is stored in the cloud database of your account and must be loaded in the printer to start the Base Check. When the TRC Baseline is created it is saved in the cloud database and linked to this paper stock. Baseline stays in the database also when user selects (temporary) a different calibration paper.

1.9.6 ICC / DL / Verify Paper

System Selected Media
When system shows the selected stock and the last used paper stock based on the defined rules. The first time this will show: 'Not selected or used before' .

Before this specific rule is set it is important to understand the relationship between profiles and paper stocks. To be sure that output is repeatable and predictable it needs a stable stock to create the ICC profiles and Verify the accuracy of it.
We give a few options
FFPS: Define Paper Groups in DFE with same related color (PSIP). Fiery give a group of papers the same color (PSIP). This recommended method helps to differentiate the paper groups.
Example: Create before a Sync Media the next groups in the DFE: Coated, Uncoated, Nature and Board. All loaded paper must be assigned to a paper group of this. Go back to SaaSColorManagement.com and do a new Sync Media to find the paper groups and related loaded paper types in printer.

Auto Paper Controls: (JMF)

This function will select any paper what is related to a paper group. It is able to select follow the next rules:

Coating: first Gloss Coating, then Matt coating, then UnCoated
Weight: Light first
Size: 11x17, A3, 18x12, SRA3 (smallest first)

Re-profile with same media (JMF)

To avoid unstable output because of loading different paper types in the same paper group. The verification and profile creation will only be done when same paper is loaded as done before.

Fixed paper Selection (JMF)

Control each Paper Group specific, switch on or off group by group to Verify and create ICC /DL profiles. When this option is selected each group starts disabled. You only can enable groups from loaded media. When a group is not visual in the list check if any related paper is loaded to this group.
Select Auto to let system select any paper or limit to one paper type by making that as choice, but is not recommended.

Use Auto function and system will select paper following the next rules

Coating: first Gloss Coating, then Matt coating, then UnCoated
Weight: Light first
Size: 11x17, A3, 18x12, SRA3 (smallest first)

1.9.7 Spot Color Library (FFPS, Emtex, iFlow)

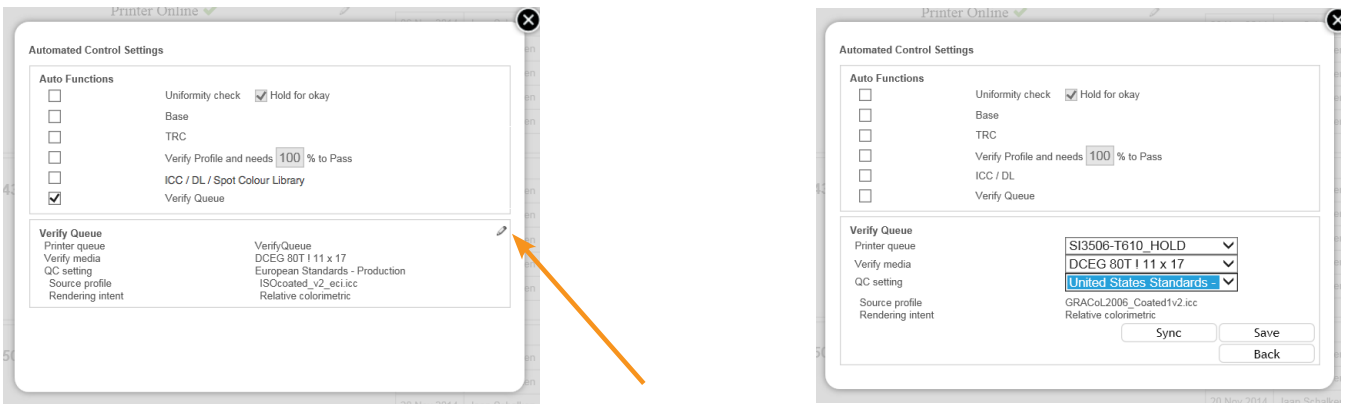
When this function is applicable then you can select for which paper type the system create a spot color library.
Select the paper type. Only when a new ICC / DL profile is created for this stock then also the Spot Color library will be optimized. The text 'Spot Colour Library' is then also add in the task list.

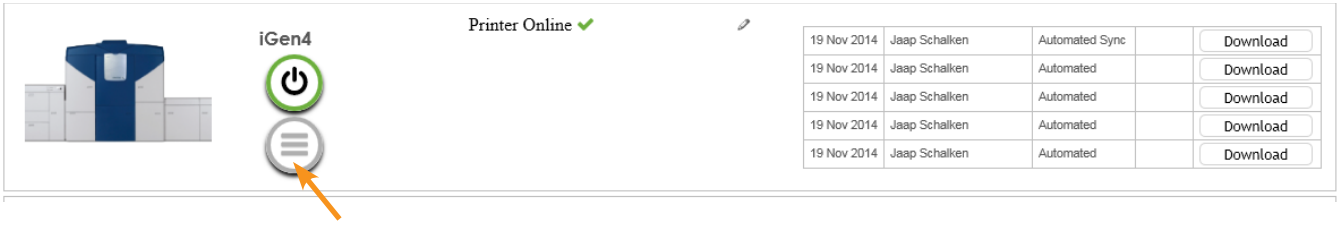
1.9.8 Set Screening (JMF)

Each workflow can only be related to one screening. Color is sensitive to the screening value.
SaaSColorManagement.com retrieves the screening option during a Media Sync (see 1.4.7). Without a screening it is not possible to enable a task.

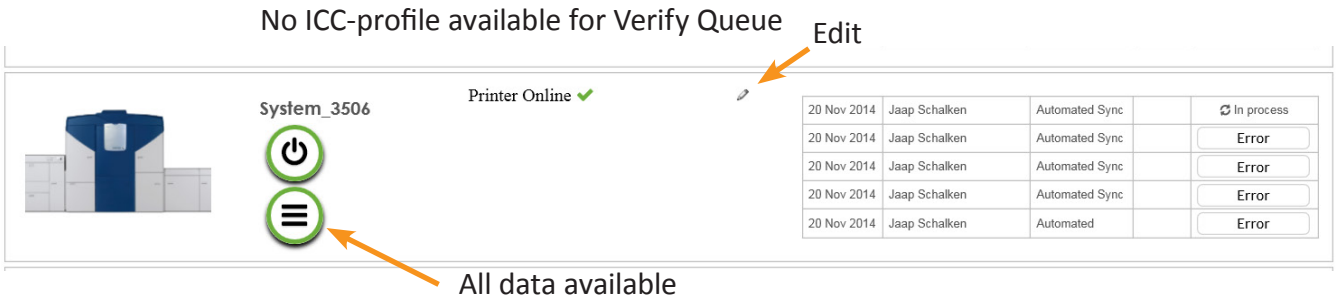
1.9.9 Verify Queue (JMF FFPS/ Near line)

Each printer queue used for production can be checked to a base line and color management settings. This option is only for verification if the queue is printing the correct quality and as before. Thus it doesn't trigger a new profile when it is not in spec.
When Verify queue is enabled an extra button with its own production mark will appear in the operator page. All accuracies are reported, Theoretical, In-Gamut / Predicted and Measured / Consitency.





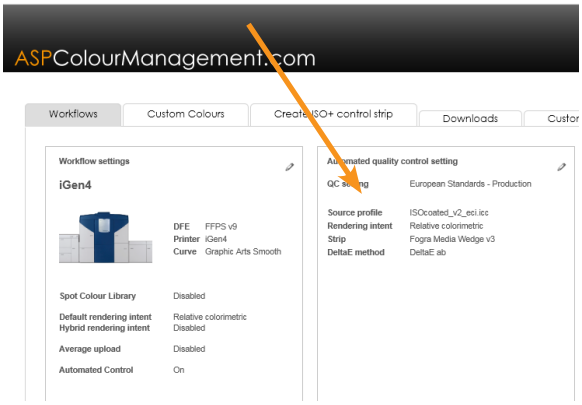
The color management settings, used paper type needs to be set as in the queue of the printer, the CMI SaaS service will calculate the aims and will create a base line for it. Hover over the button and the service will show the selected settings.



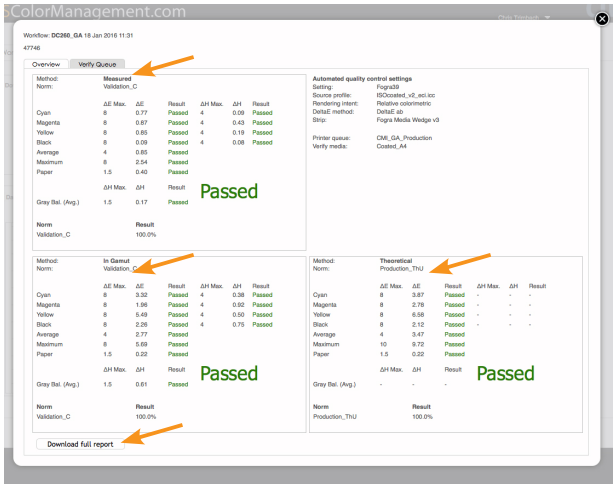
Via the edit button on the operator page or via the expert page the tasks can be changed.

How to synchronize in case of AiCM:
Go the operator page and selected the option, as part of the automated settings under “workflow settings, of the verify queue, synchronize with the system to load the available queues
and loaded media.

QC settings can be changed via the Automated quality control settings
via the Expert page. Select a pre-defined or create your in house QC setting and tolerances. This set is then visual on the operator page too.



Aims are calculated on the fly, (relative) Theoretical and the Predicted / In Gamut settings and used media also a base line will be stored and optimized in time to find the centroid of this production queue.



Reports inclusive Process Corrected Aims (see chapter 3)

The service will report the fist time no comparison with a base line or “Measured” because it doesn’t excist. After that the first validation the system stores all uploads and will calculate the centriod out of it and will use that as target for the base line of these queue settings. Each time when this queue setting is used CMI SaaSCM will calculate the drits based on the base line saved in the cloud data base and the calculated aims based on the color management settings.

Measured: Consistency / Base2Base.
Target is based on the best average of earlier uploaded measurements. The tolerances are default based on the ISO Proofing standard, see chapter 3.6.6 for custom settings.

In Gamut: Predictable/ Verify2Profile. Target is based on calculated predicted aims based on the color management settings and used paper stock, Gamut corrected aims.
The tolerances are based on the ISO Validation or custom standards.

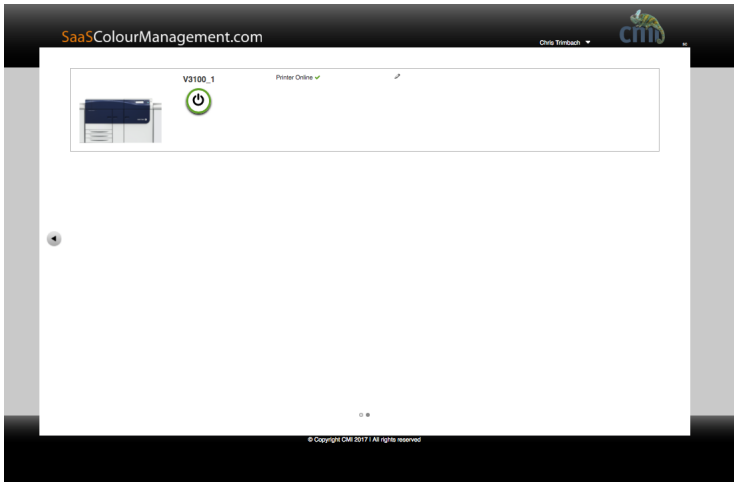
Theoretical: Default Theoretical Relative. Target is based on the aims defined in the source profile and substrate corrected in case of relative printing.
The tolerances are based on the ISO Production standard, see chapter 3.6.6 for custom settings.

Download Full Report:
System will generate a PDF of the overview, Measured, In gamut and Theoretical results. It is based on DeltaEab and for each comparison are the results showed in an image.

1.10 Step 7: First test run

Select the tasks discussed in chapter 1.9 via the expert- or the operator page.
Use to operator page (find the link under your login name) and run your first automated job via the top green button.

The first run will print the profile target two times, this to find the calculate the best target.
After a successful first tun the service shows Ready for Production. Click button again to change the button back to ‘Start’ and click again to re-start process.



After a successful second run, all items are defined and first Base Lines are saved in the Database. The first base Line is created after 5 jobs so with job 1-5 no delta E/ Densities / Pass Fail are showed. When no paper types will be changed then ...

System is ready for daily use!

When used paper stocks are not correct then set to correct paper types and delete the base Line. When the button reset baseline is grey the baseline is reset.

1.11 Rebuild

Rebuild function for automatic CMYK workflows

Via this function users can fine tune the profile settings without the need of re-print and measure ICC targets. It saves a lot of time when unknown 'best' settings need to be found.

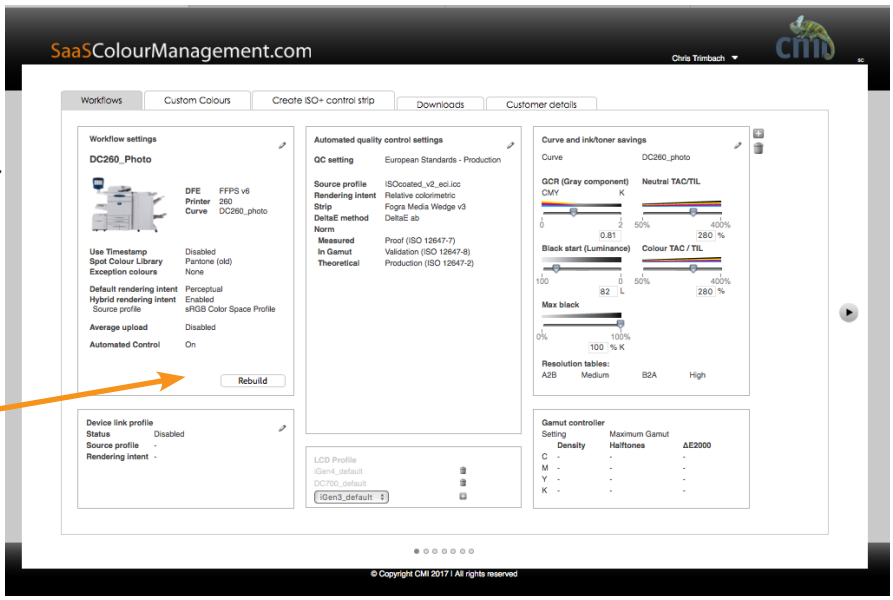
Here some examples:

- Change the perceptual settings of the hybrid profile to change contrast and brightness.
- Enable or disable hybrid rendering to find the difference between smoothness and accuracy.
- Change the source profile of a device link. Like sRGB instead of ISOCoated_V2.
- Change the preserve and edit settings of the Device Link to fine tune output based on the application.
- Change curve settings to benefit a different Neutral and Colour TAC, GCR setting or black start. This is also a big help to improve the settings to the max ink savings.
- Change the resolution of the profiles to improve smoothness or accuracy.

Etc, etc

The ICC, Device Link and spot colour libraries will be also automatically installed and get '_RBx' as an extra suffix. It is _RB with a unique number so it is always clear which rebuild version is used. Like _RB1, _RB2 etc.

This function is not available for manual workflows.



Chapter 2 Background info

This automated color control service is based on the ideas of Lean manufacturing, Six Sigma and Kai Zen. Verify output to quality levels, Optimize when it is not and Analyze why a system does not produce as before. Each system has it limitations but by smart control and optimalization we can collaborate with the physics of a printer and serve the user to keep it in the highest quality levels. Not all drifts can be corrected by software, frequent maintenance is required too. Analytic reports or error messages are guidance to get the device back in same state as before by maintenance procedures or different software settings.
Create Repeatability and Predictability output are key for this unique service.

Create as many automated workflows are licensed for the CMI-Agent. See license details under 'Service Page/Customer details/License' in the service of SaaSCM.

2.1 Database

Only user settings and color measurement data are stored in the data bases of SaasColorManagement.com. There is no option or need to upload anything else then color related data.
The jobs of the hosted service of CMI are only related to verify, optimize and analyze (lean) color output of printers.

2.2 Workflow

Each SaaSCM workflow can have access to only one printer. Different CMI workflow can be created for one specific printer, this to use different automated color management settings or rules.

2.3 Calibration paper

Each SaaSCM workflow uses only one paper type for calibration. This is a must to get it stable and analyze the quality of a calibration curve. It is always possible to change to a different paper type, the system will create automated a new baseline for that. A stable baseline needs several checks.
In case the system must maintain for each paper its own calibration curve you need to make multiple workflows in SaaSColourManagemenrt.com

2.4 Paper groups

Note: Before user starts with the first automated color management job the user needs to understand the importance of these paper groups and paper color. Take your today papers, see if they fit under one group, create these paper groups in your DFE before the CMI Service will start.

To stabilize the use of an ICC or DL profile the system makes a relationship between a Paper Group and the ICC/DL profile. A different characteristic of a paper type needs by definition a different ICC/DL profile. Because of that it is very important to create logical group names in such way that each group is unique for specific characteristics of paper types. The solution needs also a paper color wih the same name!

Examples:	**Paper Group**	**Paper color**
Coated		Coated
UnCoated	Uncoated	
Nature		Nature
Carbon board	Carbon Board	

Once a paper type is connected with a group the system uses that paper unless the user forces to change. SaaSCM checks white points of the used paper and gives errors when paper white point is changed.
User is not limited creating paper groups but when for example all paper types will using one

ICC/DL profile the output quality will vary between these paper types. To avoid that for each paper stock the system creates an ICC/DL profile create paper groups and add papers with same
characteristic to it. Example all Coated stocks to Paper Group 'Coated' with color 'Coated.

2.5 Baseline of Linearization / Calibration curve, TRC (the Base)

The service is a self learning system and does not need local special color expert knowledge to set a baseline. The service will check all measurements and when it passes preset criteria like good densities, curve and run ability it is used for calculating the baseline. In a time frame of at least 30 days the service will use data out of CMI cloud database to set the baseline. This is based on only correct stable measurements.

First start does not need any extra work then just using the system. Stability and repeatability tests are started immediately after first measurement. All data goes in CMI cloud database and if needed can be analyzed by experts too.

After a few days using the system, a reasonable 'start' baseline is made of first measurements and keeps analyzing the new uploads and optimize the baseline if the new measurement fits. Step by step the baseline becomes more robust.

2.5.1 New Calibration paper & Baseline

When user selects a different paper type for calibration the old baseline needs to be disabled and the service will start to create a new baseline for that paper stock.
When different calibration paper is selected it does effect also to the accuracy of the ICC / DL
profile. Then different calibration paper will force the system to create a new baseline for the
TRC / Linearization curve as well for the ICC/ DL Profile. When service is set back to an earlier calibration paper the service will use then also the old linked baseline from that paper stock.

2.5.2 Hard reset TRC Baseline:

Go to Asscіated paper groups and push button <Reset TRC Baseline>.

2.5.3 Back to earlier used Calibration Paper

When user goes back to an earlier used paper type, the system will use the related data of that
paper type what was created in the past.

2.5.4 Connect TRC Baseline to different paper size

When different media size is used for calibration paper the system will create by default a new TRC Baseline. To avoid this the user can assign the TRC Baseline of a different size to this media to avoid creating a new Baseline.

2.6 Baseline ICC / DL profiles (Verify)

Also this goes automated and does not need special color expert knowledge of the user.
ICC profiles are related to printer, calibration curve and the used paper.
The service can Verify in 5 different ways ICC profiles and press output quality. It is based on
calculations only, based on a calculation compared to a measurement or strict between
measurements. See also Chapter 3 Verify Processes of this manual.

1: Theoretical
2: Predictable / In gamut
3: Measured
4: Gamut comparison
5: ICC profile Analyzer

The benefits are that the service can tell if a profile is correct installed, if it gives output as before or if there are out of

gamut colors which can't be simulated. All are useful at day one and when this is defined we can continue with the stability test to communicate if the machine drifts. All these verify data as well the calibration check are reported and showed via the download button of a finished automated job.

2.7 Self Learning Base Line system

CMI SaaSColorManagement.com hosted service is able to analyze uploads and generate an average TRC Baseline of uploads. During the first 30 days the baselines will be created.
To make a good robust baseline it needs a printer used in for 30 days period with good stable standard conditions as temperature, humidity, maintenance and of course always using same calibration paper.

The system starts with out a Base Line or tolerances. This needs to be created with the first uploads. All upload goes into CMI Data Base. During the start-up period of first 20 tasks the final Base Line will be calculated. The user can delete the existing Base Line what will start the process to get 20 measurements and analyze the best off to create a new Base Line. CMI can re-set the base Line any time based on last 20 TRC actions. Data is only used what is measured with the Base check just after creating a TRC.

Nothing wrong that after the system is installed and some tests are done to hit the button Delete Base Line so 'wrong data' is not part of the Base Line.

2.7.1 Temporary TRC Baseline

When a new workflow is made or the TRC Baseline is reset the service use as initial Baseline the data of the first launched Base Check task, started by user.

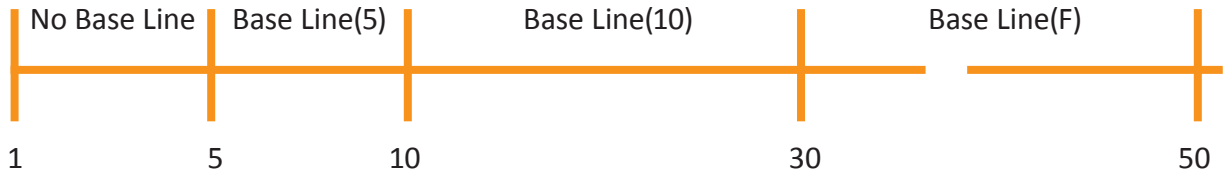
2.7.2 First baseline is set in 10 & 30 days

Data from okay results will be used to build the TRC Baseline after 10 days and the final in 30 days.

When started the service uses first upload to have a temporary Baseline as start reference and will be optimized of data uploaded the first 10-30 days. User must run the SaaSCM service daily of the first month during all working days of that month. User doesn't need to start the self learning process but if needed user can reset it to restart the sequence again.

Optimized Baseline is: Data of Avg densities.

No modifications / optimalizations are add to this baseline anymore after 30 days.
User can delete Baseline and start full sequence to calculate Baseline if needed via Reset TRC Basline.



The first Final Base Line is created with data of the First month. The operator must calibrate daily to create the final Base Line.

1-5 :	No Base Line available, systems reports only absolute values. In overview showed that data is only used to create first Base Line.
5-10 :	First Base Line inclusive tolerances are set. Reported as: Base Line (5)
11-30 :	Base Line and tolerances are optimized based on the first 10 base checks. Reported as Base Line (10)
Above 30 :	The final Base Line is created inclusive its tolerances. Reported as Base Line (F)

2.7.3 Long term drifts

The system will also in time check if the base Line needs to be optimized. This in case of aging hardware, measurement equipment, differences in batches of paper what else what the gives a physical drift of the Base Line what can't be optimized.

Each 50 TRC: After 50 TRC's the system will check automatic if the Base Line needs some optimization. System doesn't make a note to operator. Reported as Base Line(F)

2.7.4 Operator messages related to Base Line

Print warm-up sheets:
This is because the sheets2sheet is out of specs and prints 20 high coverage pages. The absolute values are not showed to the operator only the message in the overview that the system triggered a set of warm-up sheets. The operator should avoid this messages because most of time it is when this check is started with a cold printer. If not then it needs an engineer to analyze.

Error: Different calibration paper used.
When user did load different paper in a drawer/tray without changing the paper settings the system will use this different paper to check. To avoid that it starts building a new TRC/ICC profile based on a wrong start point it shows this error message. The paper color is stored with the event of the first TRC.

Access to data for support

CMI and Xerox analysts with a connection to the data of the customer will have access to extra info.

Error: 3x Warm-up Sheets
When the system must print 3x one after another a set of warm-up sheets. The Sheet 2 Sheet check will trigger warm-up sheets. In case of a cold machine or any other reason the system is unstable between sheets. When the system is 'cold' the system will launch automatic a set of warm-up sheets what normally will reduce the differences. A user should avoid that this will happen.

Error: 3x Maintenance
When the Base Check after TRC is still out of specs the operator gets the message that Maintenance is needed. When 3x after another the system must report 'Maintenance needed' then an internal error will be created to analyze why. If needed we can trigger manually to create a new Base Line based on the last 20 TRC sessions. This in case physical drifts happened without options to get back in an old state.

Error: 3x ICC/ DL profile
When the system must create 3x after an other a new ICC profile this error message will be forwarded to the analyst team. A reason can be that the time between events is high or the production volume is huge and some parts/items needs more maintenance.

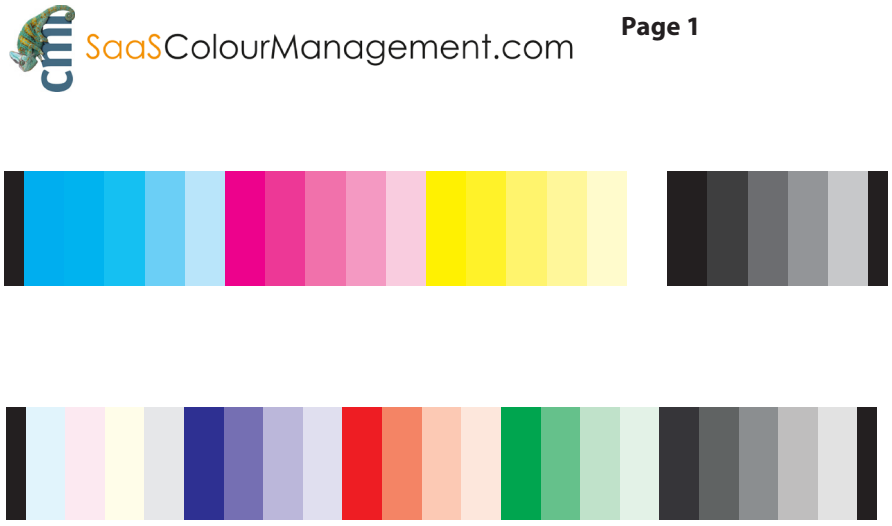
2.7.5 Important warning messages during period of TRC Baseline creation

Base check always fails to temporary TRC Baseline also when a new TRC is created.
Reason: Printer did had a maintenance in this time period
When system did had a big maintenance during the 'first 10 stable jobs' then the TRC Baseline must be re-calculated please re-start and push button <Reset TRC Baseline>. Go to Associated Paper Groups in the Automated Control Settings

(via service page).

Used Paper deltaE > 0.75: warning: paper white point changed / not stable
It is important to create the TRC Baseline with one paper type or a stable paper type. Place different paper in printer and Open Associated Paper Groups in the Automated Control Settings (via the Service page) to select this new paper stock as Calibration paper.

2.7.6 Layout printed target Base Check



Note: A TRC Baseline stays connected to a paper stock in the cloud database. User can switch to a different stock if needed without loosing the TRC Baseline. Or assign a TRC Baseline from a different paper type to a new selected paper type.

Chapter 3 How to Verify Quality

To control colors on a Digital Printer is a color management function. The requested color defined by the source ICC profile (Goal) and is set in a relationship with the closest color in the printer ICC profile. Predictability and repeatability can be checked following the method below.

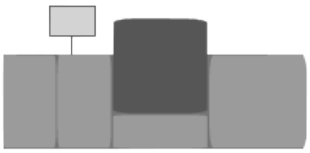
Goal (Source Profile)

Managing color on a digital press is based on simulation. The color information of the simulation is defined in a source ICC profile like ISOCoatedV2, GRACoL or sRGB or named colors like Pantone colors. Create your own source profile if standards
profiles are not in line or make exceptions on spot colors. See manual “Create source profile” or in Basic Setup, “Exception list” to optimize the simulation colors.

Printer ICC / DL Profile

The way a digital device can print the above defined goal is based on the physics of this device and the used substrate. The characteristic or DNA of that output is described in the by SaaSColorManagement.com created Output ICC- or Device Link profile. This profile is installed in the RIP / DFE of the digital printer. CMI Graphic Art profiles are based on accuracy and max gamut, Photo profiles are based on smoothness.

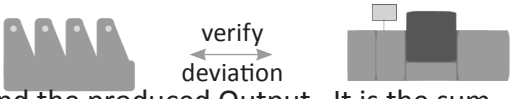
Physical Output



After all items in the queue of the DFE are defined and assigned in that workflow the total system will produce output. This output is the result of these settings as Source profile, rendering intent / color libraries, Rip Settings as image enhancement tools, Output profile, linearization curve and machine drift.
SaaSColorManagement.com works with several options to validate quality and check the difference between two outputs. The color difference between two colors can be calculated and the value we call 'ΔE’ (deltaE). ΔE helps to report similar (0-3.5), just noticeable (3.5-7.5) or a different color (>7.5).
Select deltaEab for the arithmetical equation or DeltaE2000 to be more inline with the human eye. DelatEab ≈ 75% as the human eye will recognize the difference while DeltaE2000 is ≈ 95% accurate. Thus using DeltaE2000 needs different tolerances then DeltaEab.

3.1 Theoretical accuracy

Goal ⟷ Output

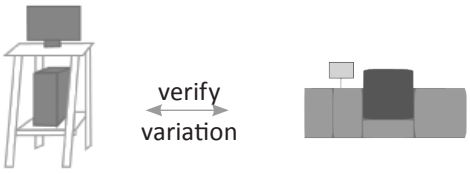


The Theoretical ΔE is the physical difference between the Goal and the produced Output. It is the sum of the physical limitations, ICC profile transform errors, linearization and the drifts of the digital printer. Theoretical because the aims are set by the Source Profile without any relationship to the limitations of the production printer. This method is also used by industry standards like Fogra and GRACoL. CMI gives the option to work with Theoretical Relative aims also known as “substrate corrected aims”. This helps to be lean to the production media.

Theoretical Absolute: 100% as Source Profile inclusive its profile white point. White point of production paper must be close to white point of source profile.
Theoretical Relative: The absolute aims are corrected to the white point of the production media. These relative aims or also known as substrate corrected aims and are a more lean method because it add a relation in the aims with the substrate.

3.2 Predicted / In-Gamut / Base2Profile

ICC/DL ⟷ Output



The Predicted ΔE is the difference between the given colors of the Printer ICC profile and the measured colors from a printed Output.
Predicted because the aims are given by the rendering intent tag of the printer ICC profile thus 100% In Gamut. This method is used to verify if the printed output is in line with the process what is defined by the expected color values given by the printer ICC profile. These aims are also known as 'Gamut Corrected Aims'. The Predicted ΔE shows the variation between the related color after transformation and hardware drifts. Predicted ΔE shows process variations and helps to analyze to if the error is a software error/ setting or a phyical hardware drift.

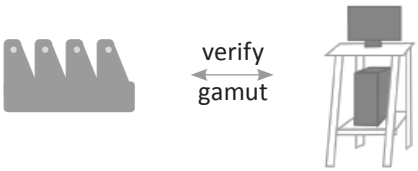
3.3 Measured / Consistency / Base2Base

Output ⟷ Output

The Measured ΔE is the difference between two printed outputs also seen as consistency. The aims are set by an average of measured results in the past and set as Baseline of the substrate. 'Measured' because the aims are set by measurements only. This method is used to analyze color drifts only. It is to confirm repeatability / consistency of the process.

3.4 Gamut Check*

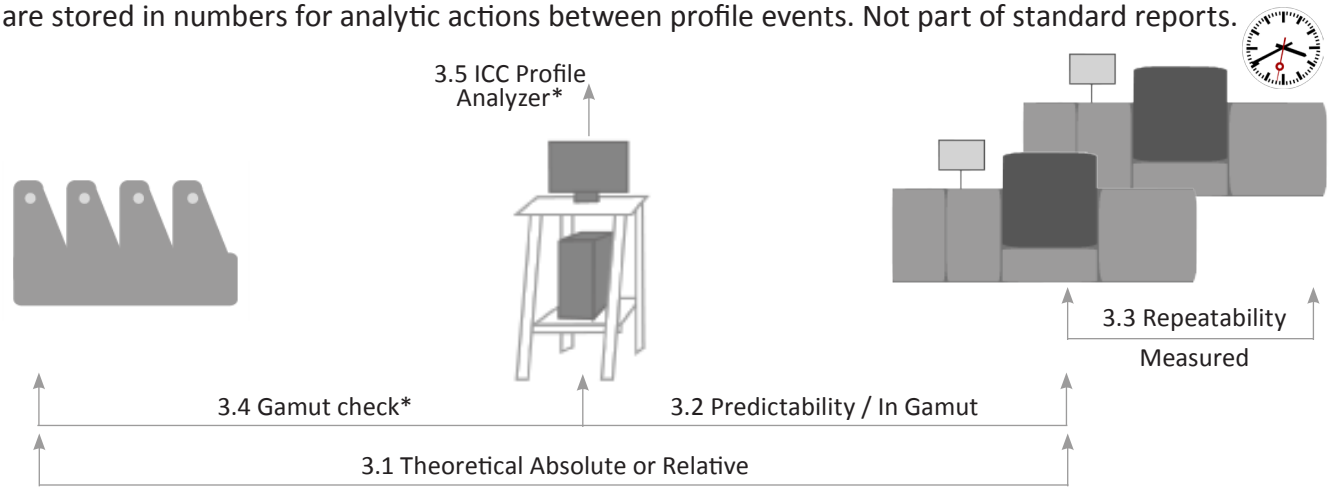
Goal ⟷ ICC/DL



The gamut check is useful to have an understanding of the difference of the gamut between the source- and the printer ICC profile. This can be also in 3D viaualized by a gamut viewer. It is not very usefull in our process because process variations can't be detected. This check is not part of CMI reports.

3.5 ICC Profile Analyzer*

The ICC profile is checked as stand alone file. The tables, round trip and gamut are analyzed. The results are stored in numbers for analytic actions between profile events. Not part of standard reports.



3.6 Automated quality control settings

To fine tune your quality control settings to industry standards or in house standards SaaSColorManagement.com has several options.

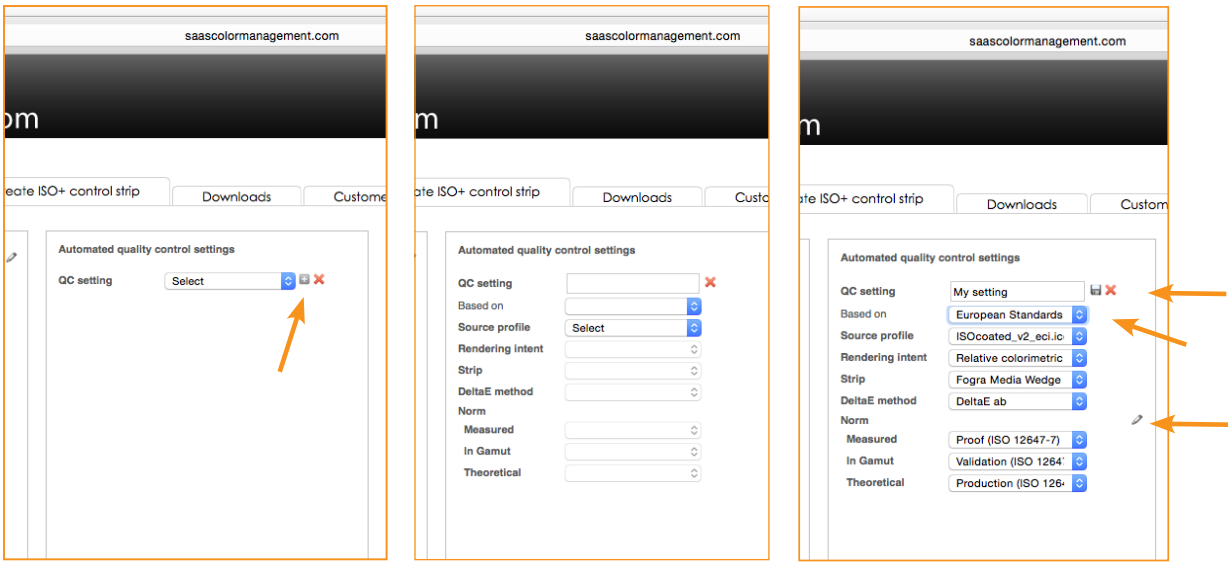
Default Presets:

European Standard:	Based on IsoCoated_V2, Relative aims, Fogra Media Wedge v3 ISO 12647-2 Production-norm for Theoretical ISO 12647-8 Validation-norm for In Gamut ISO 12647-2 Proofing-norm for Measured Fogra report lay-out
US standard	Based on GRACoL2006, relative aims, IDEAlliance control strip 2009 ISO 12647-2 Production-norm for Theoretical ISO 12647-8 Validation-norm for In Gamut ISO 12647-2 Proofing-norm for Measured IDEAlliance report lay-out
s-RGB standard	Base on s-RGB, perceptual aims, CMI RGB Wedge v1 CMI RGB Production-norm for Theoretical CMI Validation-norm for In Gamut CMI High-end for Measured CMI RGB report lay-out

All default settings are based on deltaEab(76).

Custom settings
To create a more lean workflow or follow inhouse standards the CMI preset can be not allows the best to follow. For this reason the quality control setting can be fully optimized.

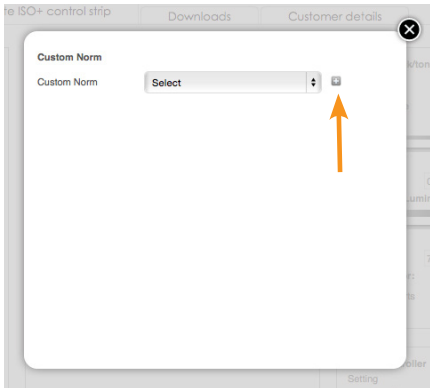
How to start
1. Select the workflow what needs to be optimized
2. Go to Automated Quality control settings and click on the “edit” pencil
3. This gives the option to add a setting via the “+” sign

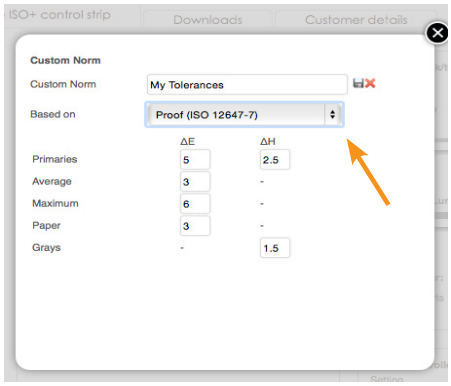


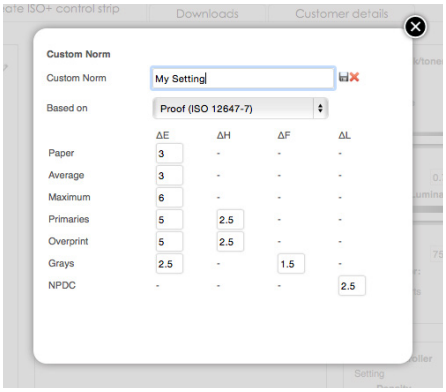
4. Make a setting name as here “My setting”

5. Start with a known setting like European Standard and set all settings in line with the way the production must be checked.
   - Source profile: Set the same source profile as used in your printer queue
   - Rendering Intent: Set the same rendering intent as used in your printer queue
   - Strip: Fogra is most used in Europe, Iddealliance is used in North Americas
   - DeltaE: Default is DeltaEab but only 75% accurate as we see. DeltaE2000 is almost 95% in line with the human eye. Industry standards based on DeltaEab can’t just be changed to deltaE2000 to pass.
   - Norm: Select the norm with tolerances to check if a system is in or out of tolerance. When tolerances are to tight unnecessary resources are asked to keep a system in specs. Out of tolerance is then when the quality is visual not okay.

6. Custom Tolerances
   - Click on the “edit” pencil button behind Norm
   - Click on the “+” sign to create a custom Tolerance





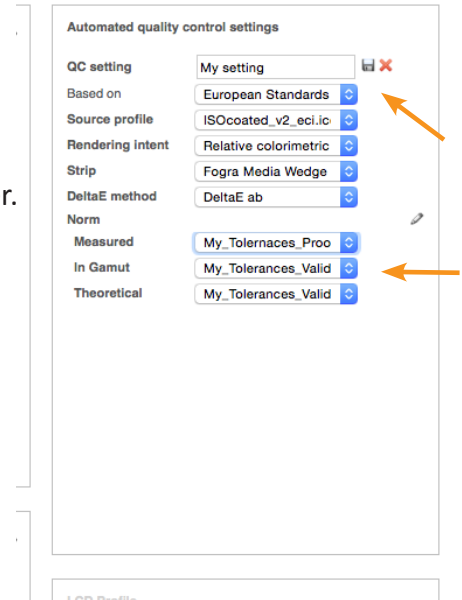


Fogra Media Wedge

IdeAlliance control strip

   - The tolerance options are based on the selected strip
   - Optimize the settings and click on the diskette to save

7 Go back to the total overview of the QC settings and change the default norm tolerances to the custom.



8. Save the QC setting with the diskette in the top of the corner.

Chapter 4 Operator Button control system

System offline:
No response from DFE.

DFE is online:
Ready to start a job.

Verify Queue

Human intervention needed
Action: .....(Calibrate)
Click okay to continue

Cancel Job

Job is Cancelled

No connection or feedback from CMI Agent.

Error: No DFE found
Check if DFE is switched on or check IP address DFE.

Job is in process.

Job is finished and results are in specifications

Verify Queue
Settings not completed

Okay

Not Okay

Continue

Stop

Error + Message
- Printer out of Specs
- No calibration paper
- No Loaded Media
- Verify Failed

Maintenance needed
Area to look:
Cyan density low

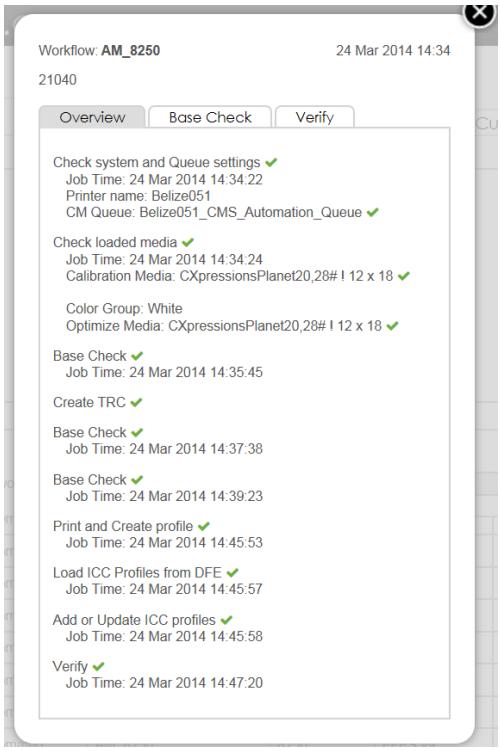
SaaSColorManagement.com

Chapter 5 Overview & Reports

The service will report all processed jobs with results in a easy to follow tables. This to analyze jobs and optimize aims to improve the checks and recovery steps.

After a process is finished the system let the user download a log file via the download button in the workflow. All items as workflow, time stamps, tasks and results are reported.

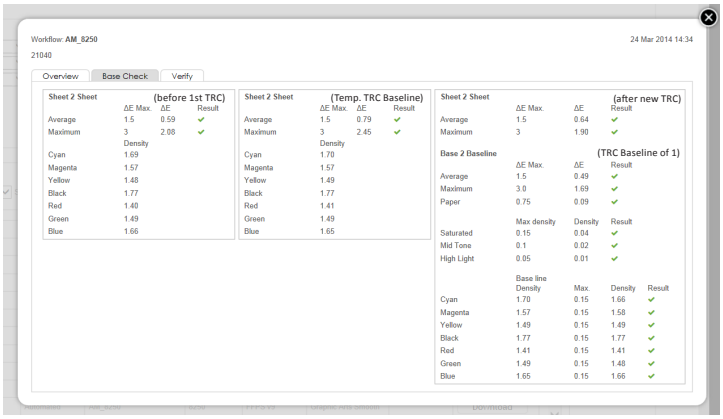
5.1 Overview of first job after creating a new workflow



Overview

First tab of the log file is an overview of the total job.
- Check System and Que settings:
  The service will check if the DFE with the Automated queue is active
- Check Loaded Media:
  Calibration Paper & Paper Color Groups
- Base Check. 1st is used to check repeatability only sheet2sheet
- Create and Install TRC (manual job)
- Base Check to use data as first TRC Baseline
  (Baseline is based on measured spectral data only)
- Base Check Print & Measure to validate Baseline
- Print and Create profile. 1st ICC- or Device Link profile
- Load ICC Profiles from DFE (list ICC profiles on DFE)
- Add or Update ICC profiles (install new ICC profile)
- Verify: Quality of Color Managed output (see 3.2)

With next uploads the Baselines will be enriched to create in a period of a month a stable Baseline what is a good representation of machine repeatability.



Base Check

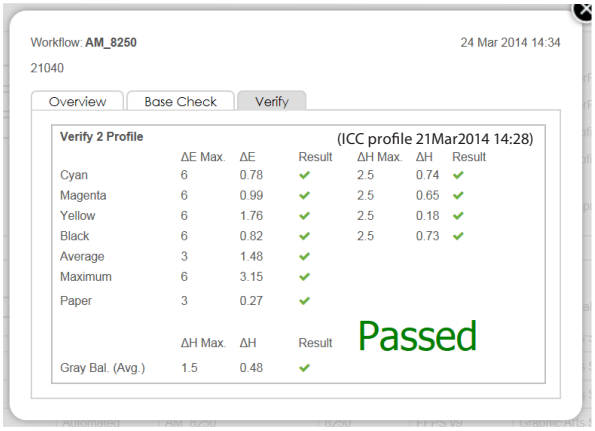
Job overview of all Base Check actions

1st Sheet 2 Sheet: Before we created a TRC

2nd Sheet 2 Sheet: To use the data for 1st Baseline

3rd Sheet 2 Sheet: Stability check between sheets

Base 2 Baseline: Check to set Baseline



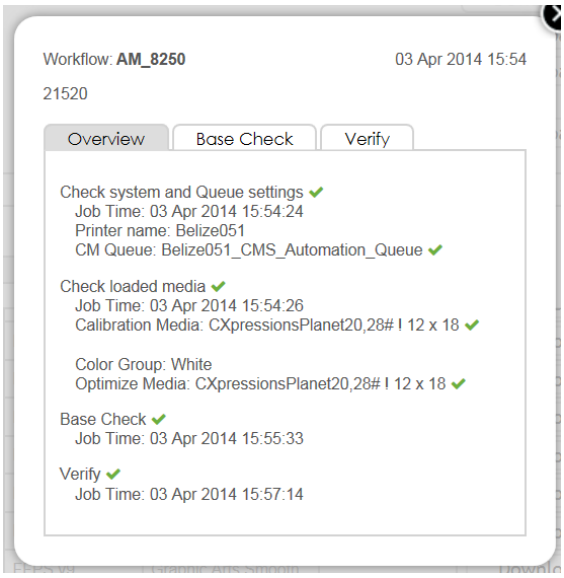
Verify

Verify 2 Profile: Predictability test.

The check is to analyze if ICC profile is correct installed and used. The aims are calculated following the method 'Predicted'. The aims are substrate and gamut depended.

5.2 Standard check of Base and ICC profile

After the 1st install and the BaseLines are created the sequence simplifies.



The system will do a Base check (linearization curve) and a Verify to check if the ICC profile is still correct. If one is incorrect then it will step automatic in recovery steps. See next pages. Here below a normal daily routine option to validate what validates that all output is in specs.

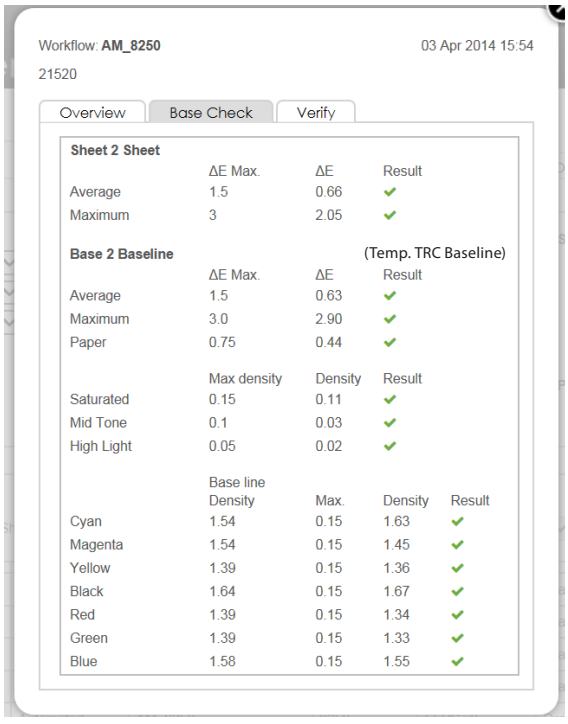
Overview

System and Queue check (is system online etc)

- Check loaded media & paper groups

To print on correct specified paper and check for new paper types / groups

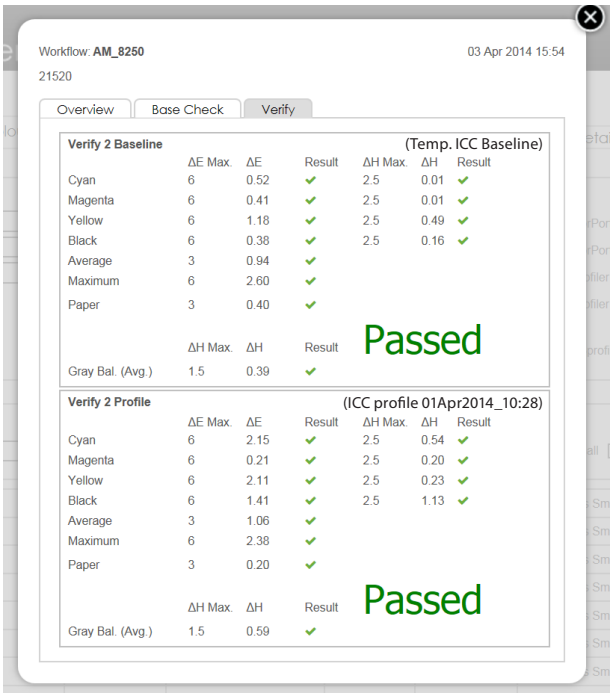
- Base Check 2 TRC Baseline
- Verify 2 ICC Baseline and profile (predicted)



5.3 Base Check

The Base check is a sheet 2 sheet validation and to the TRC Baseline. When the sheet 2 sheet fails the system is not stable between 2 prints. This can be because of a cold device. The service will ask to print a few warm-up pages and run a Base check again.

Base 2 Baseline is in specs. The color output of primaries and overprints is as before. Printer is able to comeback close to the same density level as printed before and stored in the TRC Baseline.



In advance mode we analyze also gray balance and DeltaE to so easier drifts.

5.4 Verify

To validate if the color managed output is still in specs the service validate the actual color output to the Baseline (measured) and to calculated aims using the actual profile (predicted).
The measured value is to use if the system is repeatable in time. The predicted values are to check if the output is in line what is expected using this ICC profile.

Both okay = System is Repeatable and Predictable

Both not okay= System needs new profile

2 Baseline not okay
but 2 profile okay. Hardware drifted, system needs maintenance.

Chapter 6 Equalize spectral output

6.1 What it does

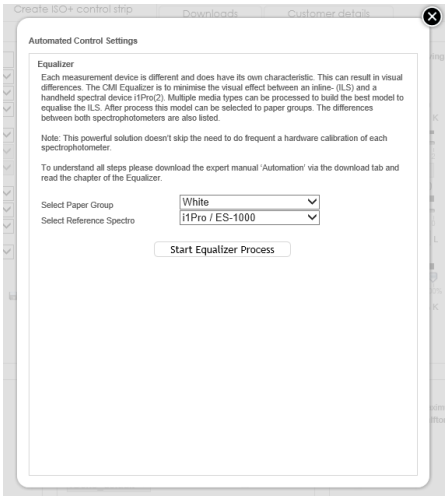
Each measurement device is different and does have its own characteristic. This can result in visual differences. The CMI Equalizer is to minimise the visual effect between an inline- (ILS) and a handheld spectral device i1Pro(2). Multiple media types can be processed to build the best model to equalise the ILS. After process this model can be selected to paper groups. The differences between both spectrophotometers are also listed.
The minimum requierements are: Printer with an ILS and the dfe must be licensed for automatic color management.

Note: This powerful solution doesn't skip the need to do frequent a hardware calibration of each spectrophotometer.

6.2 Installation steps

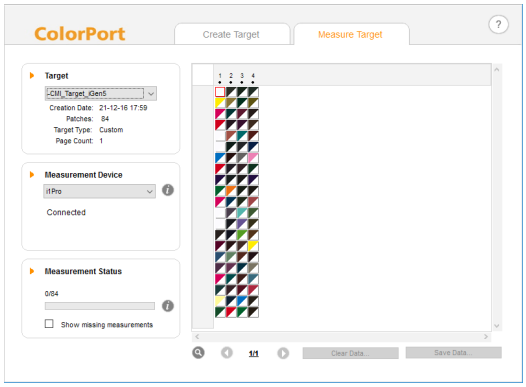
Step 1: Install ColorPort on the same Windows PC as the CMI-Agent is installed. Go to the expert page and find ColorPort for Windows under the download/software. Restart the PC and keep ColorPort closed. There is no need to install xml files to measure. The correct xml will be automatic installed by the CMI-Agent as part of the Equalize process.
Step 2: Create for each paper group an ICC profile on your prefered media.

6.3 Equalize an ILS



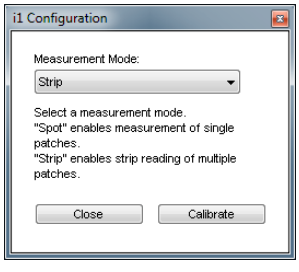
Step1: Print and measure target via ILS

- Go to the Expert page.
- Select the workflow of the printer with the ILS.
- Open 'Automated control' under 'Workflow settings".
- Open 'DFE/Rip Network settings'.
- Click on "Equalizer".
- Select the paper group (an ICC profile must be available for this group).
- Select the reference handheld to use as aims for the ILS.
- Click on 'Start Equalizer Process'.
  The CMI service will send a JMF to print and measure a target via the ILS
  Take only the prints with an arrow and page number (Page 1-4 for iGen and page 1- 6 for V80).

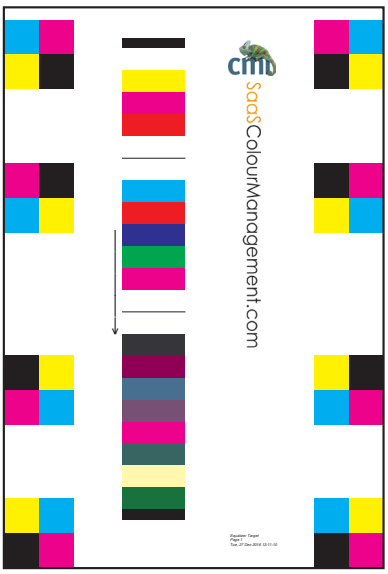


Step 2: Open ColorPort and calibrate handheld

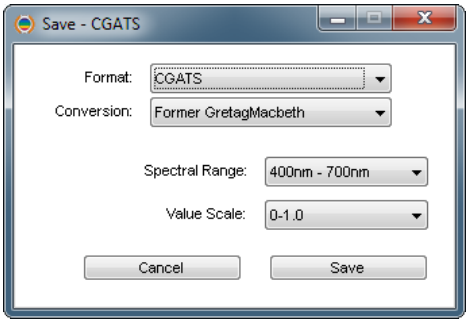
- The CMI service will deliver an xml file for ColorPort to measure the same prints again but now with the handheld.
- Open ColorPort and find the target under 'Measure target' tab.
  When the target is not showed please restart ColorPort.
- Click on the "i" button to start.
- Select strip reading.
- Calibrate the handheld.
- Select strip reading.



- Take the just printed prints.
- Skip the first warm-up pages with the text “Do not use for Equalizer”.
- Start with page 1 and put several blank pages under the target.
- Measure all pages in the direction of the arrow with the handheld.

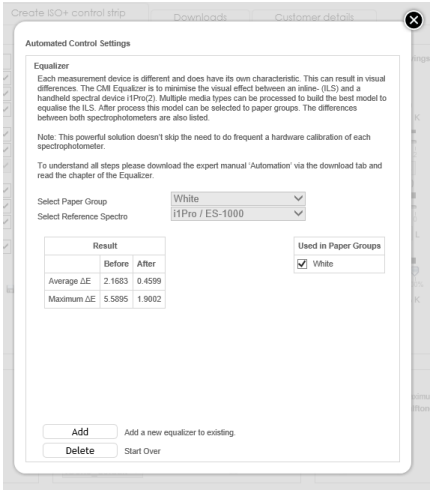


- Check all measurements if it is similar to the reference patch in the interface of ColorPort.
- Save the measurement file as a CGATS with a ‘Former GretagMacbeth’ conversion in the hot folder of the CMI-Agent. This hotofler can be found under Documents/CMI-Agent/Hotfolder/In.
- When the measurement is uploaded a pop-up screen will be showed with the message “Data uploaded” An error message is possible when some patches are not inline with expected measurement data.



Enable the Equalizer model to the paper group

- The CMI-Service will confirm when the process is finished with an overview of the results and the option to enable this Equalize model to a paper group.
- Via the add function more targets can be printed on different or the same media to enrich the model of the equalizer.
- Via the Delete button the excisting model will be deleted and a total new equalizer model can be created.



Chapter 7 Communication options

7.1 Communication methods

- All tasks will be forward to local printer via JMF/JDF, FTP or Shared folders, CMI-Agent receives data (printer settings, measurement data, error message) what will be forwarded to the CMI cloud system to start tasks or communicate reports.
- CMI will handle following documented commands of specific DFE or workflow and forward tasks to systems only via the CMI-Agent. Based on measurement data from ILS or near line spectro the CMI cloud service SaaSColorManagement.com analyze if local device is in specs or create new ICC profiles.
- All tasks are only set in SaaSColorManagement.com and after synchronizing with the local CMI-Agent communication will be started. Because of security protocols CMI-Agent is hard coded only able to communicate with a licensed SaaSColorManagement.com subscription.
- By supporting all kind of protocols almost any printer can be connected with the CMI-Agent. This to automate user total environment of Xerox and non-Xerox equipment.
- Mac or a Windows PC can be used for the CMI-Agent.

7.2 Communication settings

We support all possible environments to automate as much as possible. Via some basic settings the user can enable options, JMF/JDF/FTP services, hot folders to print and forward files. In all cases from 100% to partially automated. The possible options are:

Incl. Xerox® IPACM (IntegratedPlus Automated Color Management), JMF

1: 100% Automated: JMF/JDF, Xerox® IPACM and ILS

2: Automated without ILS: JMF/JDF, Xerox® IPACM and near line Spectro

No Xerox IPACM but with JMF

3: Automated without ILS & Xerox® IPACM: JMF/JDF/FTP/Share and near line Spectro (FFPS & Fiery)

No Xerox IPACM and no JMF

4: Automated without ILS/Xerox® IPACM & JMF: FTP/Share and near line Spectro

7.2.1 100% Automated: via JMF/JDF, Xerox® IPACM and ILS

Minimum requirement:

- Xerox® IPACM license

SaaSColorManagement.com + CMI-Agent

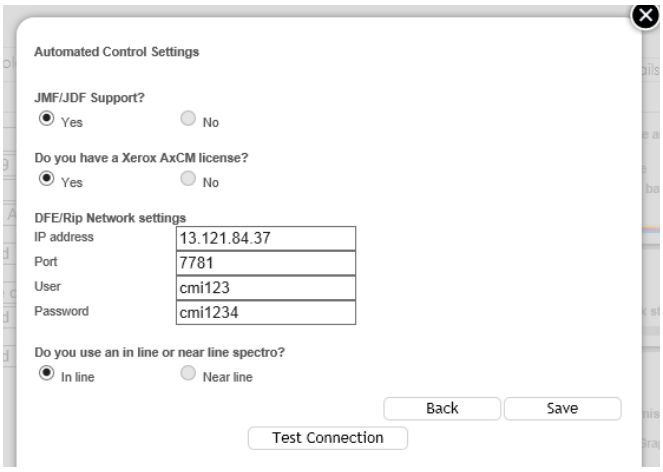
- iGen4, iGen150, 8250

Installation - Activate

- Xerox® IPACM License (FFPS9x / Fiery)
- CMI-Agent (Local PC/Mac)
- SaaSColorManagement.com (www)

Automated Control settings:

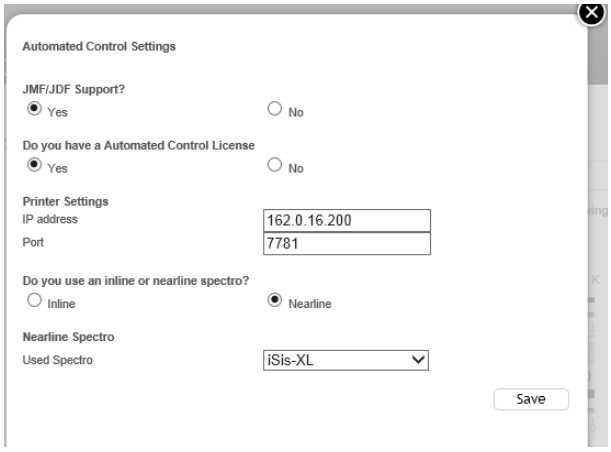
- JMF/JDF: Yes
- XIPACM license: Yes
- Printer IP Address + JMF/JDF Port
- Near line instrument: If applicable



7.2.2 Automated without ILS: via JMF/JDF/Xerox IPACM and near line Spectro

Minimum requirement:

- Xerox IACM license
- SaaSColorManagement.com + CMI-Agent
- X-Rite iSis(XL)/iOne-iO/iOne(2)/ES1000 /ES2000/DTP70
- FFPS 9x or higher / Fiery



Installation procedure - Activate

- XIPACM License (FFPS9x / Fiery)
- CMI-Agent (Local PC/Mac/Raspberry)
- SaaSColorManagement.com (www)

Automated Control settings:

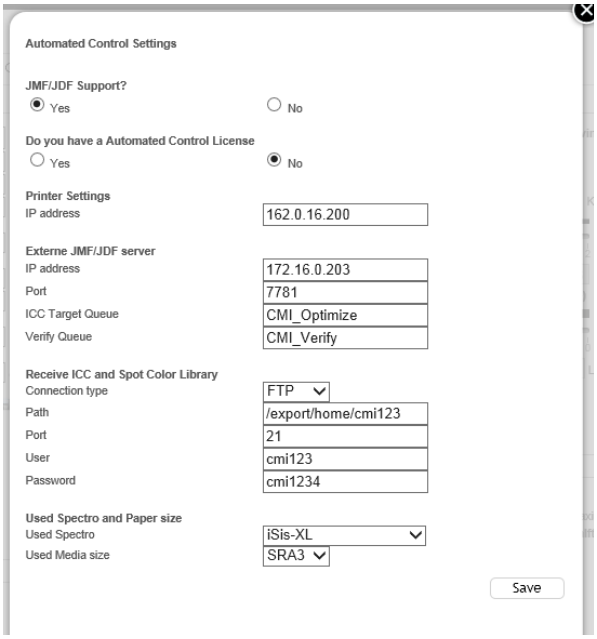
- JMF/JDF: Yes
- XIPACM license: Yes
- Printer IP Address + JMF/JDF Port
- Near line instrument with ColorPort or i1Profiler and manual CGATS uploads. (Printing/install is automated)

Also without the Xerox® Integrated Plus Automated Color Management license the CMI-Agent can automate specific steps. Automate the process as far as possible. Prints files, install / copy ICC profiles in the folders. CMI supports JMF applications, FTP and Shared network folders.

7.2.3 Automated without ILS/XIPACM: via JMF/JDF/FTP/Share and Near Line Spectro

Minimum requirement **FFPS**:

- SaaSColorManagement.com + CMI-Agent
- Xerox Freeflow Print Manager JMF service (for 8 or lower)
- X-Rite iSis(XL)/iOne-iO/iOne(2)/ ES1000/ES2000/DTP70



Installation procedure

Activate

- CMI-Agent (Local PC/Mac)
- SaaSColorManagement.com (www)

Automated Control settings:

- MF/JDF: Yes
- XIPACM license: No
- Printer IP Address + JMF/JDF Port
- FTP connection with FFPS
- Near line instrument with ColorPort or i1Profiler and manual CGATS uploads. (Printing is automated, install profiles is half automated, Spot color library is automated)

Minimum requirement **Fiery**:

- SaaSColorManagement.com + CMI-Agent
- Fiery DFE
- X-Rite iSis(XL)/iOne-iO/iOne(2)/ES1000/ ES2000/DTP70

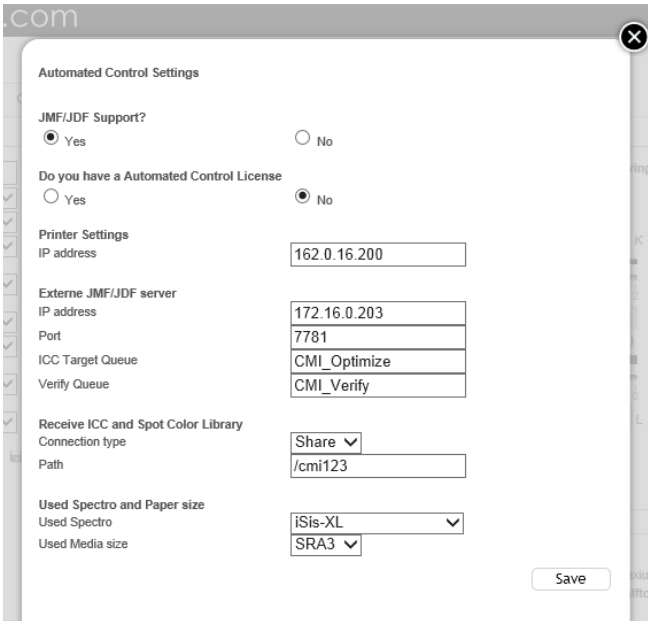
Installation procedure

Activate

- CMI-Agent (Local PC/Mac/Raspberry)
- SaaSColorManagement.com (www)

Automated Control settings:

- JMF/JDF: Yes
- XIPACM license: No
- Printer IP Address + JMF/JDF Port
- Shared network folder to copy profiles
- Near line instrument with ColorPort or i1Profiler and manual CGATS uploads. (Printing is automated, install profiles is half automated)



7.2.4 Automated without ILS/AxCM/JMF: via FTP/Share and Near Line Spectro

Minimum requirement FFPS:

- SaaSColorManagement.com + CMI-Agent
- X-Rite iSis(XL)/iOne-iO/iOne(2)/ES1000/ ES2000/DTP70

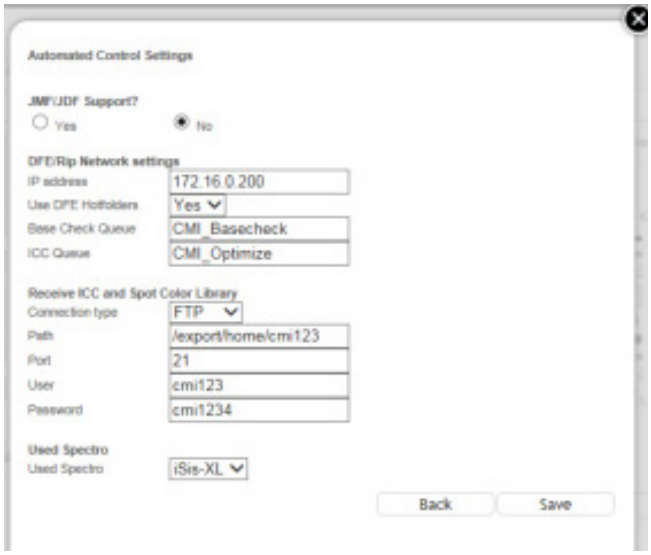
Installation procedure

Activate

- CMI-Agent (Local PC/Mac/Raspberry)
- SaaSColorManagement.com (www)

Automated Control settings:

- JMF/JDF: No
- Printer IP Address + Queues
- FTP connection with FFPS
- Near line instrument with ColorPort or i1Profiler
- Printing is automated, install profiles is half automated, Spot color library is automated)



Minimum requirement any DFE:

- SaaSColorManagement.com + CMI-Agent
- X-Rite iSis(XL)/iOne-iO/iOne(2)/ES1000/ ES2000/DTP70

Installation procedure
Activate

- CMI-Agent (Local PC/Mac/Raspberry)
- SaaSColorManagement.com (www)

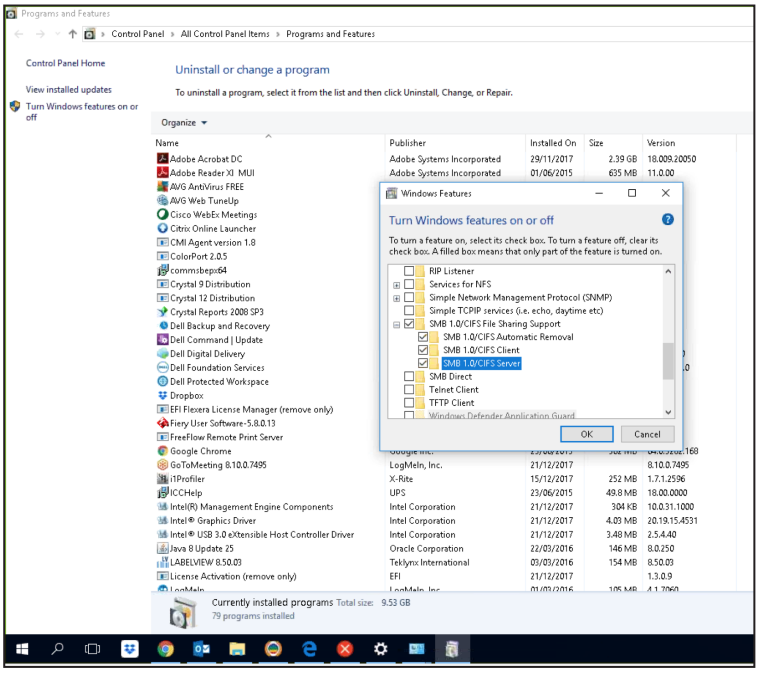
Automated Control settings:

- JMF/JDF: No
- Printer IP Address + Queues
- Shared connection via network folder
- Near line instrument with ColorPort or i1Profiler
- Printing is automated, install profiles is half automated

7.3.0 Error: Can't connect to the file share

The CMI Agent can't drop a file into the set hotfolder.
Using the start menu and typing the IP address (e.g. \\192.168.10.200\) of the PC with hotfolder the CMI-Agent PC creates the message:
You can't connect to the file share because it's not secure. This share requires the obsolete SMB1 protocol, which is unsafe and could expose your system to attack. Your system requires SMB2 or higher. For more info on resolving this issue, see: https://go.microsoft.com/fwlink/?linkid=852747

Open the Program and Feautures window on the CMI-Agent PC via : /Windows Settings / Apps / Program and Features:



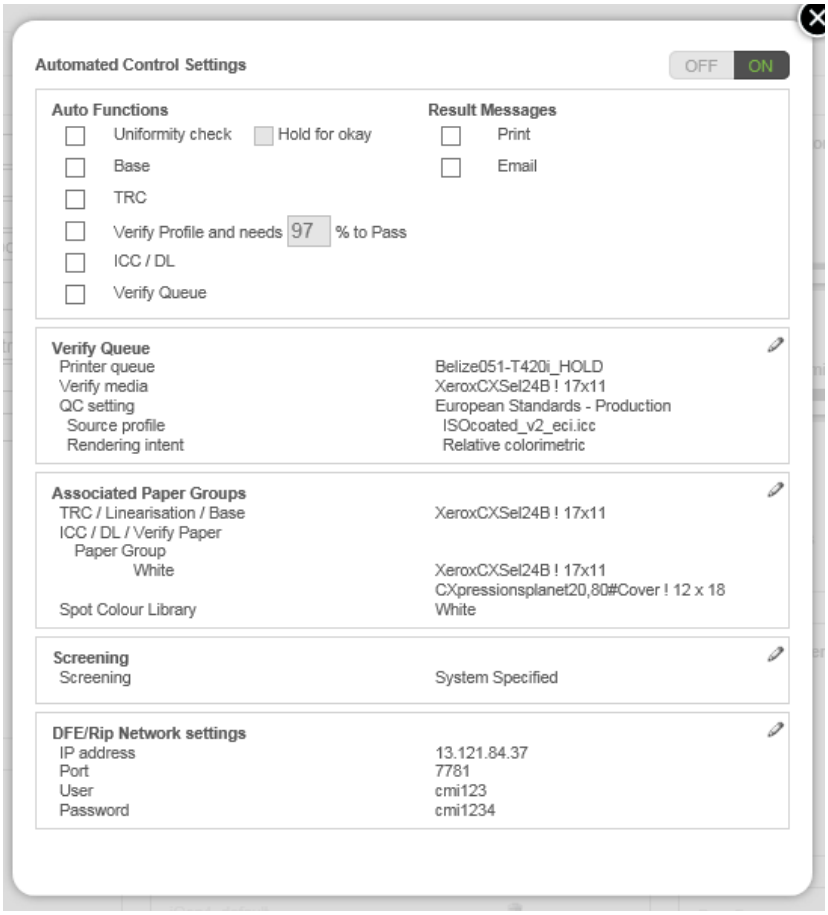
Select on the left side the option: " Turn Windows features on or off"

This will open the Windows Features:
Open SMB 1.0/CIFS File Sharing Support and enable all three SMB1 options.

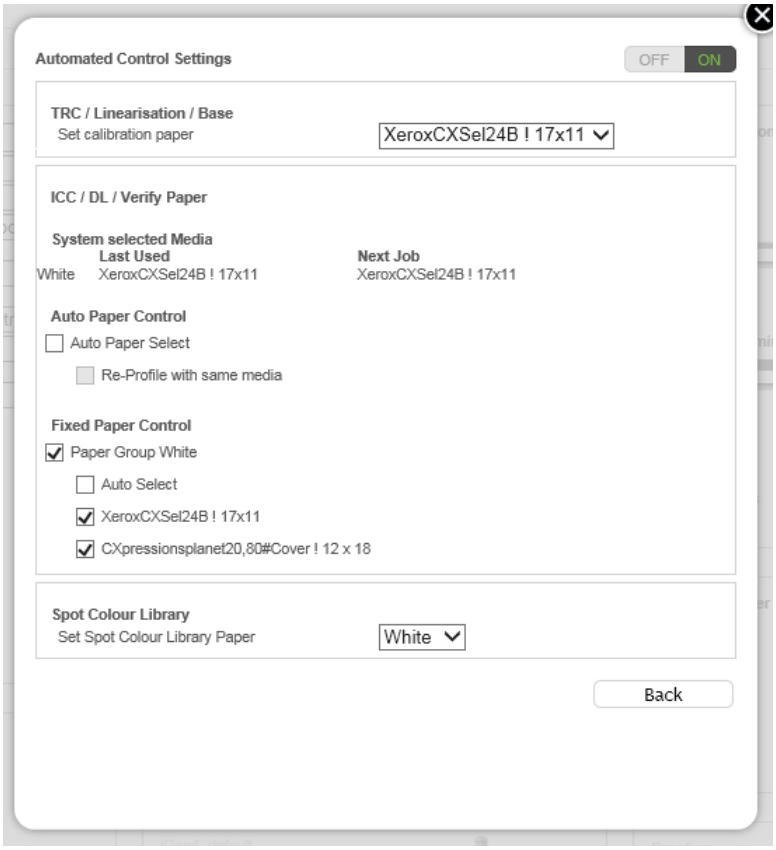
Close and restart the PC.

Chapter 8 Automation Settings

8.1 Job Settings



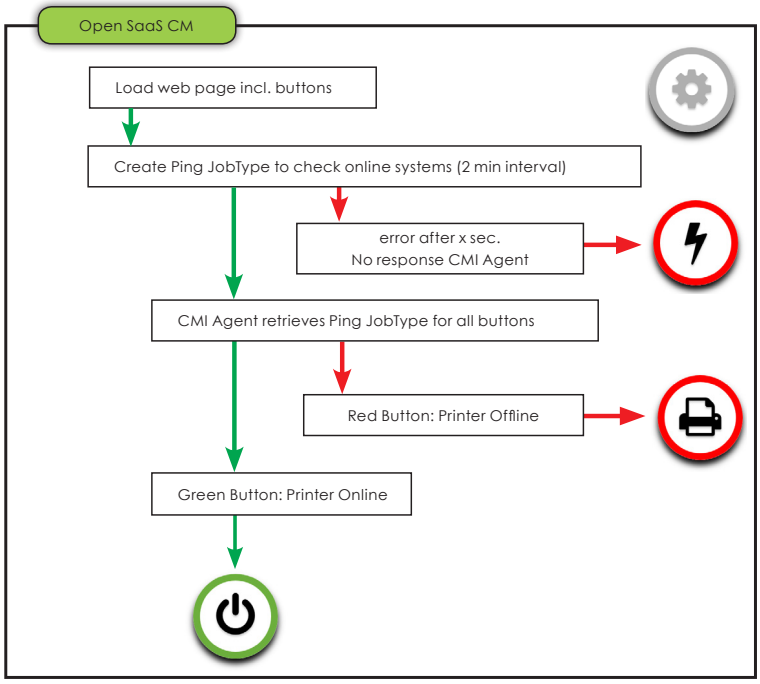
8.2 Paper Control Settings



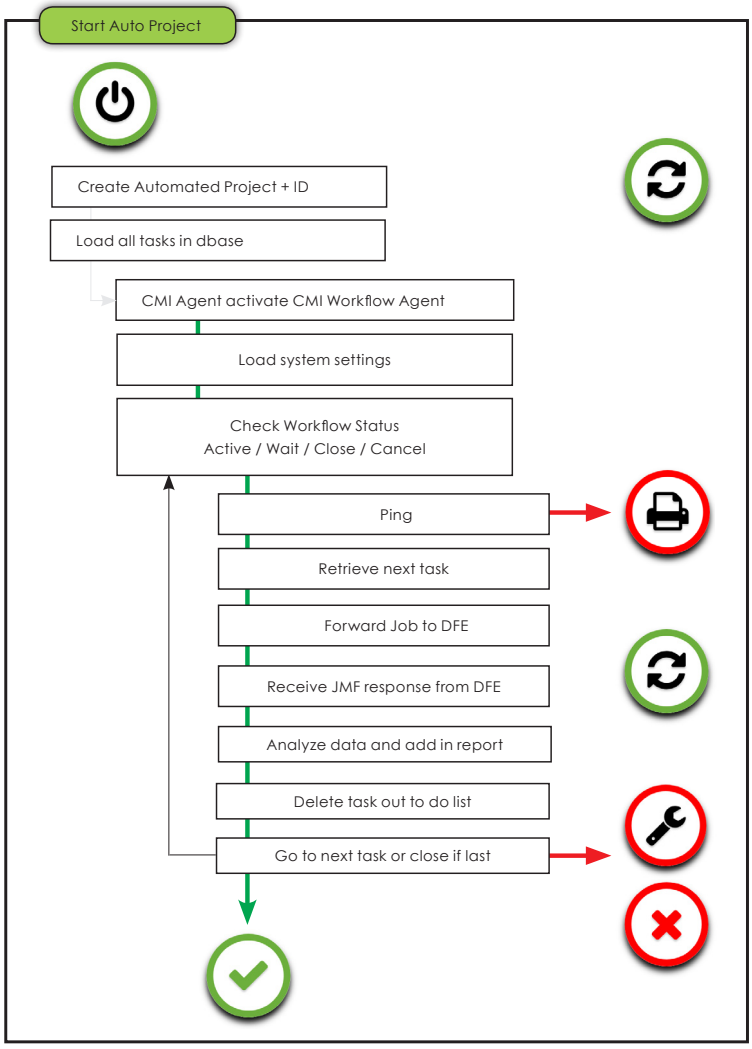
Auto Select Paper Group selection
Coating/Weight/Size
Weight: Light first
Size: 11x17, A3, 18x12, SRA3

Chapter 9 Workflow diagrams

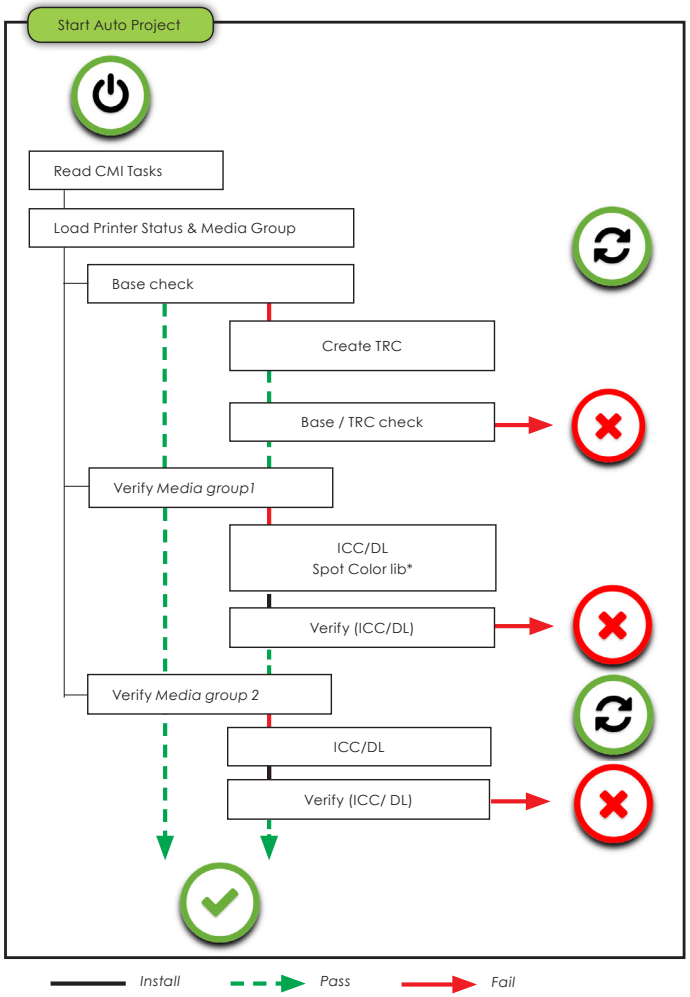
9.1 After Login



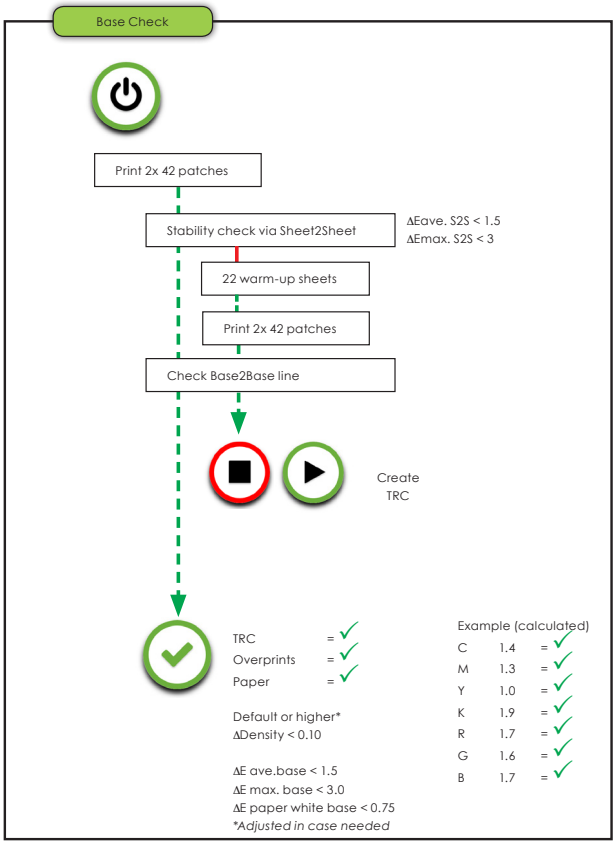
9.2 Start Job



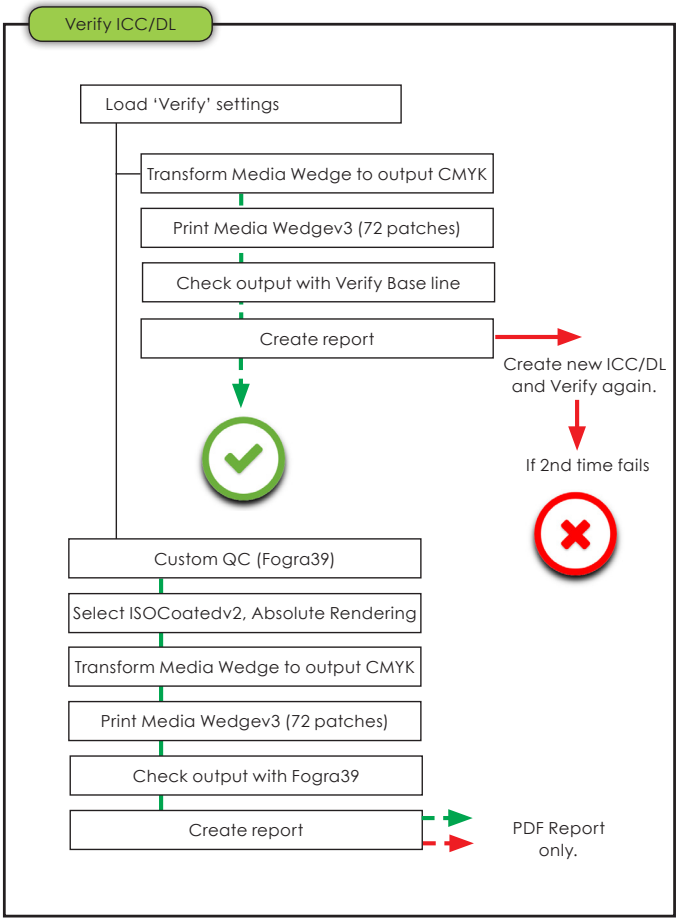
9.3 Full Job



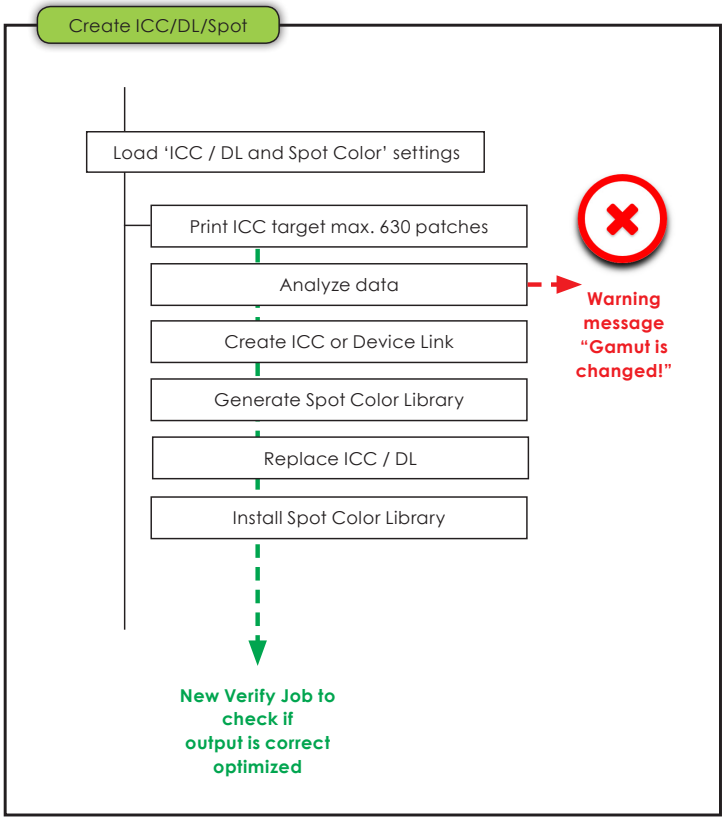
9.4 Base / TRC Check



9.5 Verify check



9.6 Create ICC / DL / Spot Colors



Chapter 10 Tolerances

To use the correct tolerances to optimize automated print processes are one of the key items for correct stable output but also the threshold to start recovery steps as TRC and ICC profile creation. SaaSColorManagement starts with default tolerances and can be optimized based on process performances. Tolerances can be environment and printer specific changed to be lean or in line with the local process performances.

10.1 Base Check

The Base Check is to analyze repeatability of a linearized color printer
ΔEab=SQRT(ΔL^2+Δa^2+Δb^2)
ΔHab=SQRT(Δa^2+Δb^2) (hue error, to see cast in gray and hue difference in colors)
Density is Status E absolute

10.1.1 Sheet2Sheet (Print warm-up sheets)

First steps are to check if the printer itself is warmed-up and stable between two prints.

S2S Average :	< 1.5	ΔEab
S2S Max:	< 3	ΔEab

10.1.2 Base2Baseline

The spectral values will be transformed to densities and Lab.
The computed values are compared with the density and Lab values set in the TRC Baseline.
In default mode

Density:	< 0.10	absolute density difference (Density is Status E absolute)
Paper White point:	< 0.75 ΔEab	

In advanced mode more values are checked to understand better 'just noticeable color' differences in output. Thus this option triggers quicker to create a new TRC.

Density:	< 0.10	absolute density difference
Paper White point:	< 0.75	ΔEab
Average color	< 1.5	ΔEab
Max peak	< 3.0	ΔEab
Neutrals	< 1.5	ΔHab

10.2 Verify

10.2.1 Verify2Baseline

Primaries	< 5	ΔEab	&	< 2.0	ΔHab
Maximum	< 5	ΔEab			
Average	< 3	ΔEab			
Paper	< 0.75	ΔEab			
Average Gray Bal.	< 1.5	ΔHab			

10.2.2 Verify2Profile

Primaries	< 6	ΔEab	&	< 2.5	ΔHab
Maximum	< 6	ΔEab			
Average	< 3	ΔEab			
Paper	< 0.75	ΔEab			
Average Gray Bal.	< 1.5	ΔHab			

10.3 Standard Tolerances for Custom QC reports

These tolerances are defined by ISO and can be seen as industry standards.

10.3.1 Production

Primaries	<5	ΔEab			
Maximum	< 10	ΔEab			
Average	< 4	ΔEab			
Paper	< 3	ΔEab			

10.3.2 Validation

Primaries	< 8	ΔEab	&	< 4	ΔHab
Maximum	< 8	ΔEab			
Average	< 3	ΔEab			
Paper	< 3	ΔEab			
Average Gray Bal.	< 1.5	ΔHab			

10.3.4 Proof

Primaries	< 5	ΔEab	&	< 2.5	ΔHab
Maximum	< 6	ΔEab			
Average	< 3	ΔEab			
Paper	< 3	ΔEab			
Average Gray Bal.	< 1.5	ΔHab			

Note: During the self learning Base Line procedure the tolerances can be changed. In case the tolerances are performing higher then the default (higher delta values), the system will increase these tolerances too. This will create emails so the support team of this customer is informed.

Chapter 11 Overview CMI Documentation and downloads

Available CMI Manuals to get background info around specific topics.

Of course it is the job of a software developer to create software what doesn't need a manual. Correct but for a user who never started a color management workflow it is very useful to be guided to success. No need to read at once one big manual but a manual about each part.

Download these manuals via the Service Page / download page visual

Use of SaaS Service	
Basic User Guide	How to set-up first workflow of SaaSColorManagement.com.
ColorPort	How to measure targets with ColorPort. (part of Printkits)
i1Profiler	Ho to measure targets with i1Profiler. (part of Printkits)
Automated Color Management	
Expert Manual	Installation inclusive background info of automated tasks.
Color Management tools in SaaS service	
Device Link	The use of Device Link profiles, inclusive Editor and Preserve.
Swatch Book	Shows the relation between CMYK and Color. It is part of the Device Link manual download.
Hybrid Rendering	What it is and how to use (OBA, G7, Images, Perceptual).
Create a Source profile	Profile any CMYK offset press and simulate that output via digital print.
Curves	How to control black and the toner layers.
Quality Control	Understanding of the lean quality control system.
RGB workflow	How to control RGB source files and how to verify RGB input.
Neutralizer	Neutralize your grays in ICC via a special gray target.
Color Management settings of DFE/ Rip	
FFPS	How to set the color settings for a FreeFlowPrintserver.
Fiery	How to set the color settings for a Fiery.
Creo	How to set the color settings for a Creo.
PX140	How to set the color settings for a PX140 FX DFE.
490/980	TRC and ICC creations for a 490/980 (Perle).
Caldera	Caldera DFE is part of the IJP2000
iController	TRC and ICC creations for an Impika.
PitStop	How to use the Pantone libraries with PitStop.
Emtex	How to use ICC and Pantone libraries in Emtex.
Other	Generic method to color manage any printer
PrintKits with targets and xml files to measure	
DTP70	XY instrument. Inclusive ColorPort manual.
iO table	Robot works with iOnePro. Inclusive ColorPort manual.
iO table 2nd generation	Robot works with i1Pro(2) Inclusive i1Profiler manual.
iOnePro	Handheld device. Inclusive ColorPort manual.
iOnePro2	Handheld device. Inclusive i1Profiler manual.
iSis	XY instrument max width 9inch/23cm. Incl. ColorPort manual.
iSisXL	XY instrument max width 13inch/33cm Incl. ColorPort manual.
Special PrintKit	
Source Profiles	All kind of Source Profiles inclusive CMI ISOCoatedV2.
Test Files 11x17	Test files with images in RGB and CMYK and Pantone swatch book.
Test Files A3	Test files with images in RGB and CMYK and Pantone swatch book.
Verify RGB	Golden Job in RGB inclusive an RGB control strip.

Xerox Cloud Consortium
Member

xerox
Business
Innovation
Partner