The 6 **C**s of color management World of Fiery Webinar

onversio

Presenters:

Consistence

oratic

Kerry Moloney — Senior Product Marketing Manager Roland Campa — Senior Product Line Manager

cteri

fierv

contro

Housekeeping

- Welcome! We'll begin shortly
- All attendees are on mute
- If you need support, have any questions or comments please write us on the chat or Q&A
- Our Fiery team is here to help!
- This webinar is being recorded
- Resources, slides, and the recording will be emailed to you



Team introductions



Joanna Portella HOST



Kerry Moloney SPEAKER



Roland Campa SPEAKER



Poll question 1

What level of color management for print does your company perform?

- We only use factory default profiles
- We use factory default profiles and recalibrate
- We have custom calibrations and profiles
- We create custom calibrations and profiles, and recalibrate and verify
- I'm not sure





Session introduction

- Don't panic, don't log off it's a color nerd-free zone
 - Why good color matters
 - Why it might be more important than you think
 - Why it might be easier than you think





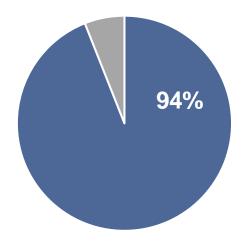
What are the Cs of color management?

- First there were the <u>3 Cs</u> 2005
- Then the <u>4 Cs</u> 2015
- Then the <u>5 Cs</u> 2016
- We are here to tell you about how Fiery has the 5 Cs, and even 6 Cs covered





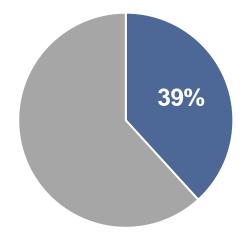
- Color consistency and color matching
 - 94^{%*} of print buyers regard color consistency across all print communication as critical





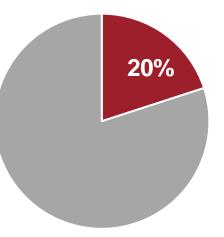
* Propelling Your Business Forward in Everchanging Competitive Environment, NAPCO Research 2022

- Color consistency and color matching
 - 94^{%*} of print buyers regard color consistency across all print communication as critical
 - 39^{%*} of print buyers express that they want print providers to improve color consistency and offer better color matching



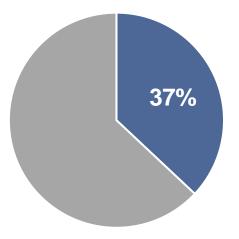


- Color consistency and color matching
 - 94^{%*} of print buyers regard color consistency across all print communication as critical
 - 39^{%*} of print buyers express that they want print providers to improve color consistency and offer better color matching
 - Whereas only 20[%] of the print providers see the need to improve in the area of color quality and consistency



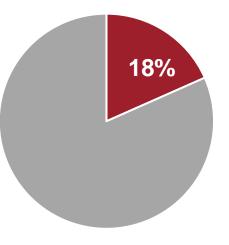


- Color consistency and color matching
 - 94^{%*} of print buyers regard color consistency across all print communication as critical
 - 39^{%*} of print buyers express that they want print providers to improve color consistency and offer better color matching
 - Whereas only 20[%] of the print providers see the need to improve in the area of color quality and consistency
- Print color standards
 - 37[%]* of print buyers push towards print color standards





- Color consistency and color matching
 - 94^{%*} of print buyers regard color consistency across all print communication as critical
 - 39^{%*} of print buyers express that they want print providers to improve color consistency and offer better color matching
 - Whereas only 20[%] of the print providers see the need to improve in the area of color quality and consistency
- Print color standards
 - 37[%] of print buyers push towards print color standards
 - Whereas only 18^{%*} of the print providers see the need to stick to print color standards

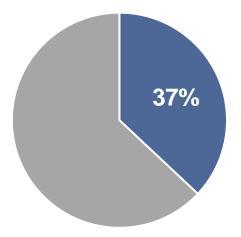




Print industry findings cont.

High-quality color printing

 - 37^{%*} of print buyers have high-quality color printing as their #1 criteria for choosing a print service provider





* Propelling Your Business Forward in Everchanging Competitive Environment, NAPCO Research 2022

Three types of print providers



Color management is our competitive advantage



Our print buyers are not color demanding



Our print buyers want "better" color — we rely too much on color tweaking



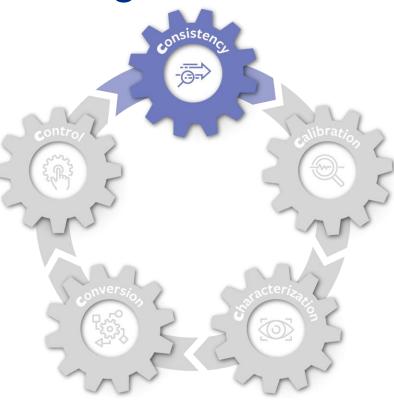


The **CONCEPT**



Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.





Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.

Calibration

• Getting the **printer/media/ink/toner** combination into a predictable and maintainable, a "**targeted state**".





Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.

Calibration

• Getting the **printer/media/ink/toner** combination into a predictable and maintainable, a "targeted state".

Characterization

• **Profile creation** which spans from color accuracy, ink saving, all the way to getting the most out of the printer gamut.





Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.

Calibration

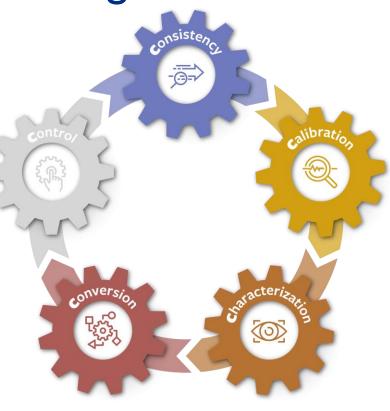
• Getting the **printer/media/ink/toner** combination into a predictable and maintainable, a "targeted state".

Characterization

• **Profile creation** which spans from color accuracy, ink saving, all the way to getting the most out of the printer gamut.

Conversion

• When one color space is **converted** into another, and when spot colors are converted to process colors.





Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.

Calibration

• Getting the **printer/media/ink/toner** combination into a predictable and maintainable, a "**targeted state**".

Characterization

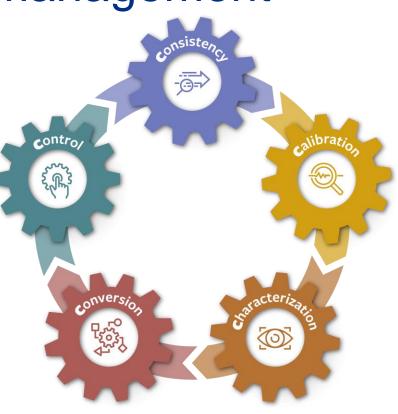
• **Profile creation** which spans from color accuracy, ink saving, all the way to getting the most out of the printer gamut.

Conversion

• When one color space is **converted** into another, and when spot colors are converted to process colors.

Control

• Where continuous verifications track **color quality over time** and where corrective actions guarantee stability over time with the goal to never leave the "green" zone.





Consistency

• Driven by the **printer**, media and toner/ink quality, selfcalibrating techniques. Getting the printer into a "**defined state**" state is the key.

Calibration

• Getting the **printer/media/ink/toner** combination into a predictable and maintainable, a "targeted state".

Characterization

• **Profile creation** which spans from color accuracy, ink saving, all the way to getting the most out of the printer gamut.

Conversion

• When one color space is **converted** into another, and when spot colors are converted to process colors.

Control

• Where continuous verifications track **color quality over time** and where corrective actions guarantee stability over time with the goal to never leave the "green" zone.





Poll results, and a chat question

Anyone want to have a guess at the 6th C?

- Color chaos?
- Caution?
- Convenience?

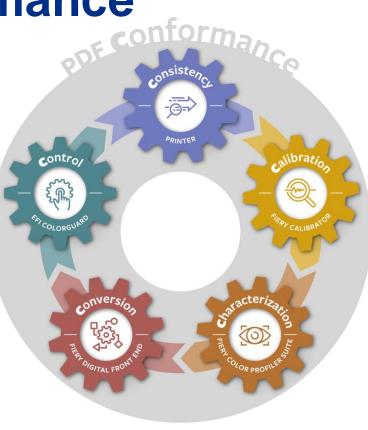




The 6th C: Conformance

 PDF conformance is the 6th C of color management

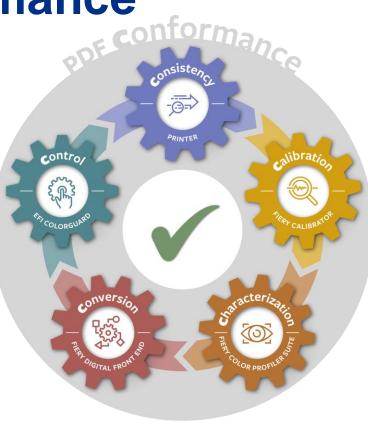
"The best color management in the world isn't going to save you if PDF components such as source profiles, transparencies, and overprints are interpreted incorrectly."





The 6th C: Conformance

- The circle is complete only when **all** of the Cs are taken care of
- And for Fiery users, we've made it super easy to achieve







How the 6 Cs relate to **Fiery** products



Relation to Fiery products

Consistency

• Driven by the **printer**, media and toner/ink quality, self-calibrating techniques, etc.

Calibration

• Driven by Fiery Calibrator

Characterization

Driven by Fiery Color Profiler Suite

Conversion

• Driven by the Fiery digital front end

Control

• Driven by **EFI™ ColorGuard™**, where verification schedules track color quality over time, where recalibration schedules guarantee stability over time with the goal to never leave the "green" zone.







1st C: Consistency

 Driven by the printer, media and toner/ink quality, printer selfcalibrating techniques, etc.







Printer-specific pre-calibrations

- **Examples** of printer-specific pre-calibration techniques:
 - Auto Adjust Gradation
 - Auto Correct Color Mismatch
 - Auto Image Adjustment
 - Shading Correction, etc.
- Pre-calibration techniques can be executed from the printer itself
- Fiery Calibrator **includes access** to these techniques for many engines to makes it easy to execute them as part of the **calibration**

Printer-specific preparation Select a method: Shading Correction Shading Correction Auto Adjust Gradation - Full Auto Adjust Gradation - Quick Auto Correct Color Mismatch Measurement method: EFI ES-2000	Calibrator	-		Х
Shading Correction () Shading Correction Auto Adjust Gradation - Full Auto Adjust Gradation - Quick Auto Correct Color Mismatch Measurement method:	Printer-specific preparation			
Shading Correction Auto Adjust Gradation - Full Auto Adjust Gradation - Quick Auto Correct Color Mismatch Measurement method:	Select a method:			
Auto Adjust Gradation - Full and Auto Adjust Gradation - Quick Auto Correct Color Mismatch	Shading Correction			
	Auto Adjust Gradation - Full sing Auto Adjust Gradation - Quick			
EFI ES-2000 V	Measurement method:			
	EFI ES-2000 🗸			
	Back Next		Cancel	





2nd C: Calibration

 Driven by Fiery Calibrator; getting the printer/media/ink/toner combination into a predictable and maintainable state





About Fiery Calibrator

- Included in all Fiery servers
- Fully integrated solution accessible from Fiery Command WorkStation[®] or Fiery Color Profiler Suite
- Support of new calibration **and** recalibrations
- Support of inline, handheld, and scanning measurement instruments
- On selected engines, support for:
 - Gamut extending inks and specialty toners
 - Fluorescent inks and toners
 - White
- Support for Idealliance[®] G7[®] Grayscale calibration*



	Fiery Calibrator
Select a task	
• Recalibrate	
Update an e	existing calibration to match its color benchmark.
Create cali	pration
Create a ne condition.	w calibration and profile to establish color behavior for a new printing
* G CRRTIFIE	Next Cancel
CEPT	STET
FIF	n SY



* Requires a Fiery Color Profiler Suite license



3rd C: Characterization

 Driven by Fiery Color Profiler Suite; spans from color accuracy to ink saving, all the way to getting the most of of the printer gamut





Fiery Color Profiler Suite



- Fully integrated color management solution for Fiery Driven printers
- The only tool that can create profiles and configure color management directly on a Fiery digital front end





Fiery Color Profiler Suite cont.

- Easy-to-use tools get expert-level results from all Fiery driven technologies:
 - Cutsheet toner printers
 - Wide to superwide inkjet printers
 - High-speed inkjet printers
- It extends Fiery server color capabilities to enable:
 - ICC profile creation, inspection, and editing
 - Color quality assurance
 - Output enhancement



Fiery Color Profiler Suite cont.

- The applications within Color Profiler Suite support all industryleading inline, handheld, and scanning **measurement devices**
- All industry color standards and specifications supported











4th C: Conversion

• Driven by the **Fiery digital front end** when one color space is converted into another





More than color Conversion







SPOT COLOR OVERPRINTING

AUTO

TRAPPING



TEXT AND GRAPHICS ENHANCEMENTS



BUILT-IN SPOT

COLOR LIBRARIES

fogra ProcessStandard Digital

BUILT-IN STANDARDS COMPLIANCE



IMAGE SMOOTHING



BRAND COLOR REPRODUCTION









More than color **Conversion** cont.

- Spot color control
 - Fiery SpotOn[™], Spot Pro, and TrueBrand[™]
- Page element quality control
 - Fiery Preflight and Postflight
- Image enhancement
 - Fiery ImageViewer and Image Enhance Visual Editor





Chat question

How often do you do last-minute color adjustments?

- Never
- Occasionally
- Often





5th C: Control

 Driven by EFI ColorGuard, where verification schedules track color quality over time, where recalibration schedules guarantee stability over time with the goal to never leave the "green" zone







EFI ColorGuard DEMOS		?
	Shop Summary his summary includes the most recent information for scheduled verifications.	ad EFI ColorGuard desktop
	2 VERRICATION SCHEDULES 2 VERRICATION 2.37 AVERAGE AE 6.02 MAXIMUM AE	
	Devices Licensed (3) Unicensed (0) All (3)	
	Brand-A_Color_Printer-1_110ppm Rey 07 A110 240146/78142 LICORD UNITI, AUG 32 2001 1157 FM 20 DMS REMAINING	
	Verification Schedule Create Schedule Calibration Schedule Create Schedule Schedule when to notify press operators to verify the color of a print device from the EFI ColorGuard desistop application. Schedule when to notify press operators to calibrate a print device from the EFI ColorGuard desistop	
	Brand-A_Color_Printer-1_135ppm Rey 007 AUX 251 X97 Mad 20 LICHIED UNITIL AUG 24, 2001 11:57 PM 25 Days REMAINING	
	Verification Schedule Create Schedule Create Schedule	
	O Upcoming schedule @ Aug 6, 2020 7:00 AM Schedule when to notify press operators to calibrate a print device from the EPI ColorGuard desktop application. Last 7 dayst P 2 Failed View all schedules Vere all schedules	



Shop Summary





Schedule	×		
Follow the steps to create a schedule.			
Name		Select Notification Recipients Set up notifications for schedule events.	×
My Verification Schedule for Printer 1 with 110ppm media		Schedule	
Device Job proper		7:00 AM Su Mo Tu We Th Fr S	a
Brand-A_Color_Printer-1_110ppm V BizCard_	angup_A3 V	Notifications	
Print Letatus IP address: 255.230.11.239 Model: Fiery DXT-A110		Email address 🔘	0 0
Verification Preset		operator@company.com	
GRACoL2013 - CRPC6 + Validation Print (ISO 12647-8:2012)	~	manager@company.com	
Verification Preset Details: Color Reference: GRACoL2013 - CRPC6 (Premium Coated) - Idealliance Control Wedge 2013.txt Tolerance Set: Validation Print (50 12647-8:2012) - Wedge Patch Set: Idealliance Control Wedge 2013.t8		+ Add Recipient	×
	Next		Back Done



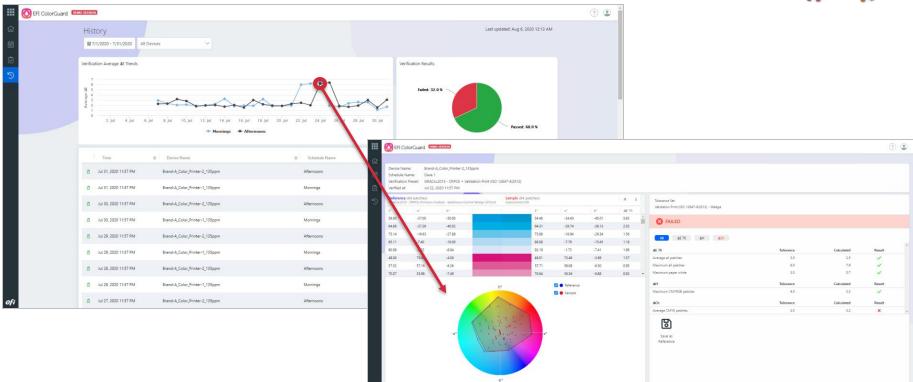
Verification Schedule Wizard



		×	Verif	ication Preset > Tolerance Set			
ication Preset				Tolerance set:			
				My custom tolerance set			
Verification preset:							
My house standard				ΔE formula:			
				ΔE 2000		~	
Color reference:							
FOGRA51 - PSO Coated v3 - Fogra Media Wedge V3.0.it8	~			Tolerance criteria	Limit	\Lambda Warn	× Fail
Tolerance set:							
Validation Print (ISO 12647-8:2012) - Wedge	~	C)		Average all patches	3	0	۲
				Maximum all patches	8	0	۲
Patch set:				Average outer gamut patches		۲	
Fogra Media Wedge V3.0.it8	~			Maximum for 95% of patches		۲	
		,		Maximum paper white	3	0	۲
				Primary color ∆E limits			
	Cance	Save		Average CMYK patches		۲	
				🗆 Maximum Cyan			

Preset & Tolerance Editor





History & Trends

EFI ColorGuard

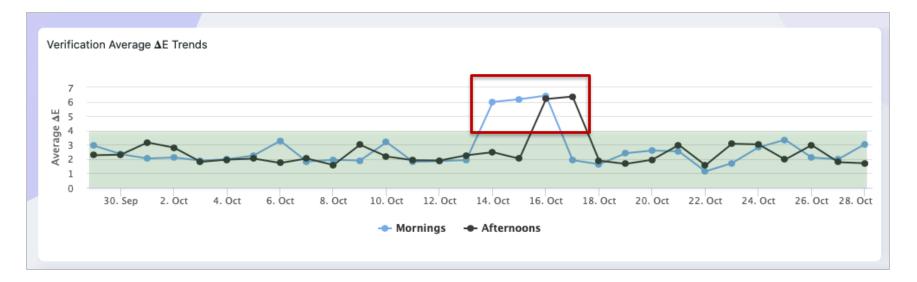
- Schedules and automates the color verification and recalibration process for each Fiery[®] Driven[™] print system
- Allows you to compare colors to a custom reference <u>or</u> industry standard to ensure print production consistency and accuracy
- Allows you to monitor color verification results in real time, and act based on quality trends







EFI ColorGuard





EFI ColorGuard

- EFI ColorGuard completes the 5 Cs of color management
- By providing color "control" over time, plus print analytics, history and trends, reporting, and more





6th C: Conformance

- PDF conformance certification that guarantees correct interpretation of PDF jobs
- Driven by the Ghent Workgroup (GWG)
- Easily achieved with Fiery JobExpert[™]

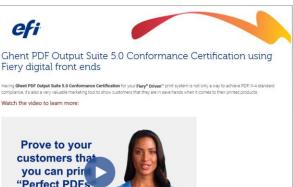




PDF Conformance Certification

- Fantastic marketing tool for print service providers to acquire new customers and bind existing ones
 - Comes with certification and labels that can be placed in email signatures and on web pages
 - Print shop and owner names appear on the international GWG web page
- Proofs that the print shop can process PDFs perfectly (by honoring transparencies, overprints, use of source profiles, etc.), which is as crucial as being able to meet industry color standards
- fiery.efi.com/gwg





ere's a reminder of the benefits of Ghent PDF Outout Suite 5.0 Conformance Certification for your Fiery® Driven" print system

efi M

let's get started

Prove to existing customers their work is in safe hands
 Acquire new customers due to your conformance status

Reduce waste and increase profits from less reprints
 Keep customers happy with right-first-time prints
 Be seen on the Ghent Workproup international websiti



Fiery JobExpert

Your built-in expert for optimal print output

- 1. Analyze each PDF print job in detail
- 2. Automatically set the optimal Fiery job settings
- 3. Efficiently process each job to achieve the best possible print quality

With Fiery JobExpert CULINARY TOURS | COOKING CLASSES | COOKING TOOLS | SPICES | COFFEE & TEA CULINARY TOURS | COOKING CLASSES | COOKING TOOLS | SPICES | COFFEE & TEA Wrong brand M color MANOR & MASON EW COOKING CLASSES, CULINARY DESTINATIONS W COOKING CLASSES, CULINARY DESTINATIONS OURMET PRODUCTS AND KITCHEN TOOLS Transparency clipping and blending issues

efi M

Wrong profile applied

Without Fiery JobExpert

Incorrect output







GWG Certification samples



🖶 Print 🕮 Excel 🗮 CSV 🕩 Copy

CTP/Printing Canon C8000\

Epson SC-P80

Kodak Trendse

2 > >>

Search

WorkSho



The 6 Cs sum-up and check list



Your printer. Check w hich calibration ar are available on your press. Check if the available within your calibration software

TIP: When choosing your next press, as this new engine do to look after its own c



Get to a targeted state. Look into how r in place. Is it sufficient to cover the differ using?

TIP: If a media type or weight difference visual color difference, it warrants its ow

About profiling. Check if you have profil

features it has, and if those features are

color management software that's integr

needs?





Your printer. Check which calibration and auto-correction routines are available on your press. Check if the initiation of those is available within your calibration software TIP: When choosing your next press, ask the question, what can this new engine do to look after its own color?

Get to a targeted state. Look into how many calibrations you have in place. Is it sufficient to cover the different types of media you are using? TIP: If a media type or weight difference is enough to show a

visual color difference, it warrants its own calibration.



About profiling. Check if you have profile creation software, what features it has, and if those features are sufficient for your profiling needs? TIP: Don't underestimate the importance in terms of ease-of-

use of color software management that's integrated with the



Your DFE (RIP). Check that your DFE has the correct built-in technology for both process and spot color handling, as well as a PDF engine that supports the latest standards.



TIP: Remember a DFE is more than just color conversion. learn about its other color and quality control features to get the verv best results.



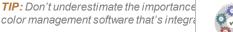








TIP: Control software also allows you to prove compliance to your customers as it tracks color over time.



About PDF/X-4 conformance. The best color management in the world isn't going to save you if a PDF element isn't interpreted correctly, and that negatively affects color.

TIP: It's a good idea to certify all your DFE and press combinations to ensure the same quality assurance throughout your print shop

IT DFE (RIP). Check that your DFE has the correct built-in nology for both process and spot color handling, as well as a engine that supports the latest standards.

: Remember a DFE is more than just color conversion. learn but its other color and quality control features to get the very t results. And again, integration — if a DFE has bi-directional nmunication to the profile creation solution, life gets easier.

ping things in check. Your printers, consumables, and ironment will change over time. Get to know how color control ware enables you to understand your environment, as well as gs order with calibration and verification schedules.

: Control software also allows you to prove compliance to your tomers as it tracks color over time.

but PDF/X-4 conformance. The best color management in the rld isn't going to save you if a PDF element isn't interpreted rectly, and that negatively affects color.

: It's a good idea to certify all your DFE and press combinations nsure the same quality assurance throughout your print shop.



















6 Cs — learning more



6 Cs — resources

 For more details on the 6 Cs products and services, visit the <u>fiery.efi.com/6Cs</u> Reference of the second s

How Fiery products relate to the 6 Cs of color management:

The 6 Cs of color management See how they can help **your** print business.



Consistency: Fiery Driven printers

Explore the range of Fiery* Driven** printers from market-leading companies in the print manufacturing industry.



Calibration: Fiery Calibrator

Fiery Color Profiler Suite and Fiery digital front ends both take advantage of Fiery Calibrator – a comprehensive calibration tool that integrates fully with printer-specific calibration procedures.



Characterization: Fiery Color Profiler Suite

Fiery Color Profiler Suite's comprehensive set of tools are fully integrated into Fiery digital front ends to provide the best ease of use and optimal color quality for every stage of the printing workflow.



Conversion: Fiery digital front ends

Fiery servers provide state-of-the-art imaging technology, combined with expert color management tools, to deliver high-quality images with accurate, consistent color.



Control: EFI ColorGuard

EFI* ColorGuard* lets you schedule verifications and recalibrations to keep your color in check, plus gain insights into your color quality across Fiery Driven print systems anytime, anywhere from a web browser.

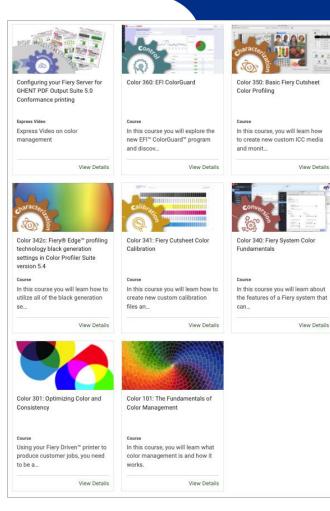


Conformance: Ghent PDF conformance

Chent PDF Output Saile 5.0 Conformance Certification for Fiery⁴ Driven⁴ print systems is not only a way to achieve PDF/X-4 standard compliance, it's also very valuable marketing tool to show customers that they are in save hands when it comes to their printed products.

6 Cs — eLearning

 To get trained on the 6 Cs topics, visit <u>fiery.efi.com/learn6Cs</u>



6 Cs — EFI Communities

 Post questions, find answers, chat with Fiery and industry experts at <u>communities.efi.com</u>





Time for questions...

