## PRINECT USER DAYS

8th and 9th October 2014

5. International Prinect User Days, October 8<sup>th</sup> and 9<sup>th</sup>, 2014 PDF/X-4 & Co. successful processing with Prinect and other color management tips

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#### HEIDELBERG-





#### Content - PDF/X-4 & Color Management in Prinect

- 1. PDF/X-4 What is it?
- 2. PDF/X-4 in Prinect
  - 2.1 PDF/X-4 in Prinect Preflight Check
  - 2.2 PDF/X-4 in Prinect Color Management Settings
- 3. Color Toolbox quick info
- 4. Other Color issues in Prinect (e.g. spot color)

- 1. PDF/X-4 What is it?
- PDF/X = International Standard defined in the ISO 15930
- Start 2001: with PDF/X-1,

currently in preparation: PDF/X-5

• X means 'Exchange':

defines the exchange of digital data in the graphical arts industry

- Eliminates issues from PDF not relevant for the print industry, Mainly used: PDF/X-1a, PDF/X-3 and PDF/X-4
- Focus on Color and Color Management:

The destination Color is defined by the Output Intent (ICC-Profile)

1. PDF/X-4 – What is it?

#### Compared to PDF/X-1a and PDF/X-3

	PDF/X-1a (2003)	PDF/X-3	PDF/X-4
PDF-Version	PDF 1.3	PDF 1.4	PDF 1.6
Object Color	CMYK, Gray, spot colors	CMYK, Gray, spot colors, ICCBased and Lab	CMYK, Gray, spot colors, ICCBased and Lab
Output Color (only 'ptr')	CMYK	CMYK, Gray and RGB	CMYK, Gray and RGB
Transparency	No	No	Yes
Layers	No	No	Yes (only OCCD*)

# PDF/X – What is it? The impact in practical work

General

- Responsibility for "Color-Adjustment" moved from Data-Provider to print shop (Prepress-Department)
- Good Know how in Color Management is needed

PDF/X-4 supports media neutral workflow

- Color of Objects can be in Device Color Space (only CMYK, Gray, spot color, DeviceN) or in Device Independent Color Space (e. g. ICC-Based)
- ICC-Based Objects have to have an ICC-Profile attached

2. PDF/X-4 in Prinect

Where and how is it treated?

Preflighter (Qualify / Prepare) can

- check for PDF/X-Compliance
- create Errors, Warnings, Information regarding PDF/X-issues
- make a few corrections

Color Conversion (Prepare) (aka 'Color Carver')

Many Options to define the Color Management process

 $\rightarrow$  A chance for good results!

But also

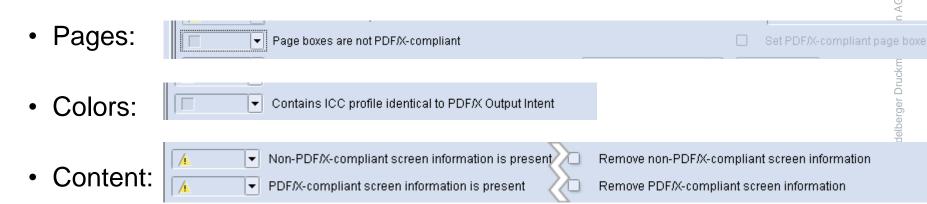
→ A risk for 'just some result' (Voodoo-Results)



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## 2.1 PDF/X-4 in Prinect – Preflight Settings especially for PDF/X (X-1a, X3 and X4)

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Actions	Reporting	Document	Pages / 1ups	Images	Fonts	Colors	Separa	tions	Content		
Actions         Reporting         Document         Pages / 1ups         Images         Fonts         Colors         Separations         Content         Openations         Openations <t< th=""></t<>											
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PDF/X Preflig	ght Settings —										
A	PDF does	not comply with	the requirements of				PD	)F/X-4	-		
	▼ Trapped s	tatus is unknowr	n					Set trap	pped status as		No
	<ul> <li>Document</li> </ul>	t title is missing						Set doo	cument name as d	ocument title	
	<ul> <li>Creation of</li> </ul>	r modification da	ate is missing					Insert c	current date		
A	▼ Filter is no	t PDF/X-complia	nt					Compr	ress to ZIP		
A	<ul> <li>PDF/X out</li> </ul>	put intent is miss	sing								
	<ul> <li>PDF/X Out</li> </ul>	put Intent is not									



## 2.1 PDF/X-4 in Prinect – Preflight Settings Resulting Preflight Report

X-4				HEIDELBERG				
	Document overview							
File name: Title: Creator: Producer: Author: Creation Date: Modification Date: File size: Trapped: Output Intent: PDF/X Version: PDF Version: Number of pages: Media Box: Trim Box:	DevLink_te Adobe InD Adobe PDI - 04/29/2011 10/06/2014	888.90 pt	4)					
		10 F						
Summary	🗱 Error	🛝 Warning	Fixed	Info				
Ocument	-	-		E-				
PDF/X	÷	<del>.</del>	1900 - C	•				
Pages	87	-						
④ Colors	-	7		-				
Fonts     Fonts	2	1	121	2				
Images	32	_	-	21				
Content	19 A	*		*				

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## 2.1 PDF/X-4 in Prinect – Preflight Settings **Resulting Preflight Report**

- HEIDELBERG any PDF Document overview  $\rightarrow$  Not OK Keile RGB CMYK Spot.pdf File name: Title: Creator: Producer: Acrobat Distiller 4.0 for Windows Author: Creation Date: 12/07/2001 02:02:04 PM Modification Date: 12/07/2001 02:02:05 PM 106.2 KByte / 108721 Byte File size: Trapped: Unknown Output Intent: PDF/X Version: PDF Version: 1.3 1 Number of pages: Media Box: 595.00 x 842.00 pt Trim Box: 595.00 x 842.00 pt A Warning × Error Summary Fixed Info Document -2 PDF/X Pages 1 Colors Fonts 11 × Images 1 8 Content PDF/X A PDF does not comply with the requirements of PDF/X-4
  - PDF/X output intent is missing

#### Pages

Trim box is not set directly or identical to media box Fonts ArialMT: Font is not embedded #11



## Colorspace, the final Frontier, ...

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#### 2.2 PDF/X-4 in Prinect – Color Management Settings



- 1. General Part for handling of the Document itself
- 2. Settings for the Target (Press-Profile) as well as Device Independent Colors
- 3. Settings for the Source-Data to be processed
- 4. Some general and special Overprint-Settings
- 5. Some Advanced settings for spot colors, Gray Colors and Marks

#### Hint: Tooltips are extremely helpful in Color Conversion!

#### 2.2 PDF/X-4 in Prinect – Color Management Settings

• Document Settings (mainly self explaining)

	Color Conversion on AllColorCarvers	▼				
Doc	ment Color Management Device Colors / DeviceLi	ink Overprint Advanced				
Docu						
	Add Settings as PDF Comment					
	Remove Traps					
	Compress Processed Images	ZIP (lossless)	-	Quality 90		

#### 2.2 PDF/X-4 in Prinect – Color Management Settings **Device Independent Colors**

Ψ.	Color Conversion on AllColorCarvers						<u> </u>
	current Color Management Device Colors / DeviceLin ce Independent Colors	k Overprint Advanced					
					Rendering Intent		BPC
•	Treat ICCBased CMYK as Device CMYK			CMVK / Grayscale Images	Perceptual		
0	Treat ICCBased RGB and Calibrated RGB as Device RGB			CMYK / Grayscale Graphics	Perceptual		0
	Treat ICCBased Gray and Calibrated Gray as Device Gray			RGB / L*a*b Images	Perceptual		
				RGB / L*a*b Graphics	Perceptual		0
				Spot Color Images	Perceptual		0
				Spot Color Graphics	Perceptual		
Outp	ul .						
	Press Profile	PrintenECI Offset 2007/ISOccated_v2_eci.icc				Browse	
	Use Press Profile from Job Settings, if Available		9	Use PDFX Output Intent, if Available, as Press Profile			
	Emibed Applied Press Profile as PDF/X Output Intent		0	Use PDF/K Output Intent, if Available, as CMYK Input Prof	le		

- ICC-Based Objects are Objects with a linked ICC-Profile.  $\rightarrow$  therefore Device Independent
- For CMYK/Gray/RGB these linked ICC-Profiles can be ignored and then treated the way defined under "Device Colors/DeviceLink"
- 'BPC' means "Black Point Compensation" and is normally only useful in case of "relative Colorimetric" Rendering intent

#### 2.2 PDF/X-4 in Prinect – Color Management Settings Output

Ψ.	Color Conversion on AllColorCarvers						
	ument Color Management Device Colors / DeviceLin	k Overprint Advanced					
Devi	e Independent Colors				Rendering Intent		BPC
	Treat ICCBased CMYK as Device CMYK			warmen a weather and a state of the	Souther and a strategy of the	10	
9	Treat ICCBased CMYK as Device CMYK			CMYK/ Grayscale Images	Perceptual	•	
	Treat ICCBased RGB and Calibrated RGB as Device RGB			CMYK / Grayscale Graphics	Perceptual		
	Treat ICCBased Gray and Calibrated Gray as Device Gray			RGB / L*a*b images	Perceptual	•	
				RGB/L*a*b Graphics	Perceptual		0
				Spot Color Images	Perceptual		0
				Spot Color Graphics	Perceptual		0
Outp	ul						
	Press Profile	PrintenECI Offset 2007/ISOcoated_v2_eci.icc				Browse	
	Use Press Profile from Job Settings, if Available			Use PDFX Output Intent, if Available, as Press Profile			
	Embed Applied Press Profile as PDF/X Output Intent		0	Use PDF/X Output Intent, if Available, as CMVK Input Profile			
10000			1000				

- Press-Profile is the general "Output" Profile [Target, Destination, ...]
   = the ICC-Profile for the final Output-Process!
- Output Intent-Settings should be used depending on the Workflow

Be careful with these settings:

The incoming PDF can contain an Output Intent.

 $\rightarrow$  For PDF/X, it must contain one!

#### 2.2 PDF/X-4 in Prinect – Color Management Settings for PDF/X-4

						-
Ψ.	Color Conversion on AllColorCarvers					
101212-014	connext Color Management Device Colors / DeviceLin ice Independent Colors	k Overgrant Advanced				
Dee	Le antependen cours			Rendering Intent		BPC
9	Treat ICCBased CMYK as Device CMYK		CMYK/ Grayscale Images	Perceptual		
0	Treat ICCBased RGB and Calibrated RGB as Device RGB		CMVK / Grayscale Graphics	Perceptual		
	Treat ICCBased Gray and Calibrated Gray as Device Gray		RGB / L*a*b Images	Perceptual		
-		•	RGB ( L*a*b Graphics	Perceptual		0
			Spot Color Images	Perceptual		0
			Spot Color Graphics	Perceptual	( <b>•</b> )	0
Out	на					
	Press Profile	PrintenECI Offset 2007/ISOceated_v2_eci.icc			Browse	
	Use Press Profile from Job Settings, if Available		Use PDF/X Output Intent, if Availab	le, as Press Profile		
	Embed Applied Press Profile as PDF/X Output Intent		<ul> <li>Use PDF/X Output Intent, if Available</li> </ul>	ile, as CMVK Input Profile		

- Leave "Treat ICCBased RGB ... as Device RGB" unchecked!
- Does your incoming PDF contain ICCBased CMYK and/or Gray? What is it supposed to be?
  - → Depending on the answer, switch Checkboxes for ICCBased CMYK / Gray ON or OFF!
- Is the Output Intent of the Incoming PDF really your desired Output or do you need a Process-Conversion (e.g. coated → uncoated)?
   → Check "Use Output Intent as Press Profile" or ".. As CMYK-Input-Profile")

### 2.2 PDF/X-4 in Prinect – Color Management Settings Device Colors / DeviceLink

Document Color Management Device Colors / DeviceLink Overprint Advanced Device Dependent Colors										
		ICC/DeviceLink Profile						Rendering Intent		BPC
1	RGB Images	Monitor/eciRGB.icc					Browse	Perceptual	-	
ł	RGB Graphics	Monitor/eciRGB.icc					Browse	Perceptual	•	
)	CMYK Images	Printer/ECI Offset 2007/ISOcoated_v2_eci.icc					Browse	Perceptual	-	
	CMYK Graphics	Printer/ECI Offset 2007/ISOcoated_v2_eci.icc						Perceptual	-	
	Multicolor Images	Printer/Multicolor/MC6_Ave-PT1_OG_300K98G50.icc						Perceptual	-	
	Multicolor Graphics	Printer/Multicolor/MC6_Ave-PT1_OG_300K9						Perceptual	-	
	Grayscale Images							Perceptual	-	
	Grayscale Graphics	Gray/GenericGray.icm						Perceptual	-	
	Grayscale Images: Apply CMYK Pro	file Preserv	e in CMYK Images:		ĸ	Speci	ial 🔽 🗆 CMY	Primaries	-	
	Grayscale Graphics: Apply CMYK Pi	ofile Preserve	in CMYK Graphics:		к		ial 🔄 CMY	Primaries	-	
Color Management for Overprinting Device CMYK Graphics				Color N	lanage	ement for Subsets of Device CMYK				
	Color Management for Device CMY	< with Active Color Blending		$\checkmark$	Color N	lanage	ement for CMYK Spot Colors Mappe	d to CMYK All Colors	-	

- Upper Part defines the Incoming Data, including Rendering Intent and BPC (Black Point Compensation).
- Using ICC-Profiles or Device Link-Profile is possible.
   When using DeviceLink-Profiles, Rendering intent and BPC have no influence!

#### 2.2 PDF/X-4 in Prinect – Color Management Settings Device Colors / DeviceLink

- What is a Device Link Profile?
  - A Device Link is a profile that contains exactly one predefined transformation from input- to output-channel.
  - No Device-Independent color spaces referenced
- Is there a need to use Device Link Profiles?
  - Only in some specific cases. Device Link profiles
    - might be generated with options that are not available in the Color Carver. (e.g. "Keep GCR")
    - Can enable the Color Carver to use different Press profiles
    - ? Do you utilize them for other purposes?
- What is the Risk of DeviceLink?
  - Color conversion settings are not transparent in the Color Carver

#### 2.2 PDF/X-4 in Prinect – Color Management Settings Device Colors / DeviceLink

Dev	rice Dependent Colors		 				_	
		ICC/DeviceLink Profile				Rendering Intent		BPC
	RGB Images	Monitor/eciRGB.icc			Browse	Perceptual	-	
	RGB Graphics	Monitor/eciRGB.icc			Browse	Perceptual	-	
	CMYK Images	Printer/ECI Offset 2007/ISOcoated_v2_eci.icc			Browse	Perceptual	-	
	CMYK Graphics	Printer/ECI Offset 2007/ISOcoated_v2_eci.icc			Browse	Perceptual	-	
	Multicolor Images	Printer/Multicolor/MC6_Ave-PT1_OG_300K98G50.icc				Perceptual	-	
	Multicolor Graphics	Printer/Multicolor/MC6_Ave-PT1_OG_300K98G50.icc				Perceptual	-	
	Grayscale Images	Gray/GenericGray.icm				Perceptual	-	
	Grayscale Graphics	Gray/GenericGray.icm			Browse	Perceptual	-	
	Grayscale Images: Apply CMYK Prof	île Preserve in CMYK Images:	К	Special	CMY	Primaries	-	
	Grayscale Graphics: Apply CMYK Pr	ofile Preserve in CMYK Graphics:	К	Special	CMY	Primaries	-	
	Color Management for Overprinting	Device CMYK Graphics	Color	Managemer	nt for Subsets of Device CMYk	<		
	Color Management for Device CMYk	Swith Active Color Blending	Color	Managemer	nt for CMYK Spot Colors Mapp	ed to CMYK All Colors	-	

- Special Settings for:
  - Gray-Color Handing, Black-Preservation and Color-Preservation (for Gray and CMYK-Conversion)
  - Special Cases

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Special

Basic K = K

Κ

### 2.2 PDF/X-4 in Prinect – Color Management Settings Black Preservation

- Preserve Black tries to preserve the K-Values from the Source-Data in the final result: Preserve in CMYK Images: Special Κ
  - K = K:

	_	
Preserve in CMYK Graphics:		

Keeps the K-Value the

same as before. All other color are matched "normally".

 $\rightarrow$  Mainly for Text and Line-Art, but not images

Basic: •

> Same as K=K plus adjustment of the Gradation of the K-channel. (not max Dot!)

 $\rightarrow$  Mainly if average in document is Text and/or Line

• Special:

a 4 Dimensional matching method to keep the K-Values plus taking into account the Lightness and gradation to get smooth results in all colors.  $\rightarrow$  Used most frequently!



#### 2.2 PDF/X-4 in Prinect – Color Management Settings **CMY** Preservation

CMY-Preservation



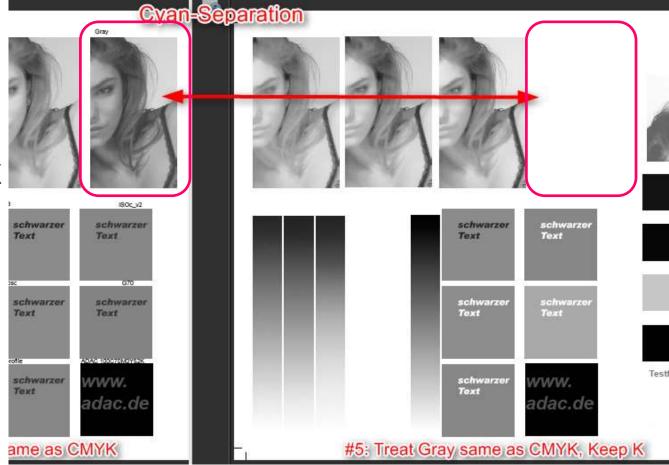
can be used to :

- Keep the primary colors (CMY) (100%)
- Keep the primary colors (CMY) and their tonal values (0-100%)
- Additionally keep the secondary colors (RGB, 100%)
- Additionally keep the secondary tonal values (RGB, 0-100%)

#### 2.2 PDF/X-4 in Prinect – Color Management Settings Example: Preserve K (Special) for Gray Image-conversion

Display of the Cyan-separation:

- Left: Standard
   → Gray → 4C
- Right:
   Pres. K Special
   → Gray → only K



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## 2.2 PDF/X-4 in Prinect – Color Management Device Colors / DeviceLink (lower part)

Color Management for Overprinting Device CMYK Graphics

Color Management for Subsets of Device CMYK

Color Management for Device CMYK with Active Color Blending

Color Management for CMYK Spot Colors Mapped to CMYK

- ... for Overprinting Device CMYK-Graphics
  - $\rightarrow$  as by default Overprinting CMYK-Graphics are not color matched

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- ... for Device CMYK with Active Color Blending"
  - → When (CMYK-) Blending is used in Design Application, these objects are not touched by the Color Management. With this option, they can be matched
- ... for Subsets of Device CMYK
  - → Objects with for example Magenta and Black (DeviceN) can be treated like normal CMYK-Objects.
- ... for CMYK Spot Colors Mapped to CMYK
  - → Uncheck if you want to effect process conversion but need to respect pre-defined CMYK output values for spot colors set in Color Table



#### 2.2 PDF/X-4 in Prinect – Color Management Settings Device Colors / DeviceLink – for PDF/X-4

- Is your PDF/X-4 delivered for your output process? = Is the Output Intent the Press Profile you use?
  - $\rightarrow$  Yes! Then no need to define anything.
  - $\rightarrow$  No, the Output Intent is not your desired Press Profile!
    - A Process-Conversion is needed:
    - Activate the CMYK-Profiles.
    - Ensure to check "Use PDF/X Output Intent as CMYK-Input-Profile".
    - How shall DeviceGray-Data be treated?
      - Untouched?  $\rightarrow$  Don't activate Grayscale Options.
    - Conversion?  $\rightarrow$  Make settings (e. g. Keep Black could be sensible)
- Device RGB is not allowed
  - thus RGB-Input-channels do not take effect.

#### 2.2 PDF/X-4 in Prinect – Color Management Settings Special Settings for Overprint and Knockout

×			Ň
	_	verprint Advanced	
<b>∣Ove</b>	rprint		
	Set Colors (save gray and black) to Knockout	<ul> <li>Retaining</li> </ul>	ain CMYK Overprint Mode unchanged
	Set Gray and Black to Knockout	💽 Ena	ble CMYK Overprint Mode (OPM=1), unless otherwise specified
	Set CMYK White to Knockout	O Alwa	ays enable CMYK Overprint Mode (OPM=1)
	Set Black to Overprint if Above or Equal	100 % 🔾 Alwa	ays disable CMYK Overprint Mode (OPM=0)
	🗹 Text 🗹 Lines 🗹 Graphics	🗹 Bitmaps	
	Turn Overprinting Device Gray into K		

- Self explaining? Tooltips should help ...
- PDF/X-4 does not need special settings.

### 2.2 PDF/X-4 in Prinect – Color Management Settings

General Settings (Advanced: for spot colors, Marks and Gray-Colors)

			Ŀ			
	0	Overprint	Advanced			
•	Map Spot Colors Respecting Job Settings Map All Spot Colors to Process Disregarding Job Settings					II "Transparent" or "DieLine" Colors II "Normal" or "Opaque" Colors
_						
Gray ☑	Turn R=G=B Graphics into Gray	R=G=B	Tolerance Limit	0.5	i	%
	Turn C=M=Y, K=0 Graphics into Gray	C=M=Y	Tolerance Limit	0.5		] %
Mark	is Color					
•	Turn 4x100% CMYK into Spot Color 'All'					
	Remove Spot Color 'All'					
	Turn Spot Color 'All' into K					
Grap	hics & Text					
	Set Color Values to Zero, if Below			0.0	1	%
	Doc Spot Gray Mark	Document       Color Management       Device Colors / DeviceLink         Spot Colors       •       Map Spot Colors Respecting Job Settings         •       Map Spot Colors Respecting Job Settings         •       Map All Spot Colors to Process Disregarding Job Settings         •       Use Color Definitions from Job Settings         •       Use Color Definitions from Job Settings         •       Turn R=G=B Graphics into Gray         •       Turn C=M=Y, K=0 Graphics into Gray         •       Marks Color         •       Turn 4x100% CMYK into Spot Color 'All'         •       Remove Spot Color 'All'         •       Turn Spot Color 'All' into K         Graphics & Text       •	Document       Color Management       Device Colors / DeviceLink       Overprint         Spot Colors       •       Map Spot Colors Respecting Job Settings       •       •         •       Map Spot Colors Respecting Job Settings       •       •       •         •       Map Spot Colors to Process Disregarding Job Settings       •       •       •         •       Use Color Definitions from Job Settings       •       •       •         •       Use Color Definitions from Job Settings       •       •       •         •       Use Color Definitions from Job Settings       •       •       •         •       Turn R=G=B Graphics into Gray       R=G=B •       •	Document       Color Management       Device Colors / DeviceLink       Overprint       Advanced         Spot Colors       •       Map Spot Colors Respecting Job Settings       •       Map Spot Colors to Process Disregarding Job Settings         •       Map All Spot Colors to Process Disregarding Job Settings       •       •       •         •       Use Color Definitions from Job Settings       •       •       •         •       Turn R=G=B Graphics into Gray       R=G=B Tolerance Limit       •         •       Turn C=M=Y, K=0 Graphics into Gray       C=M=Y Tolerance Limit         Marks Color       •       •       •         •       Turn 4x100% CMYK into Spot Color 'All'       •       •         •       Turn Spot Color 'All' into K       •       •         Graphics & Text       •       •       •	Document       Color Management       Device Colors / DeviceLink       Overprint       Advanced         Spot Colors	Document       Color Management       Device Colors / DeviceLink       Overprint       Advanced         Spot Colors <ul> <li>Map Spot Colors Respecting Job Settings</li> <li>Map All Spot Colors to Process Disregarding Job Settings</li> <li>Remove A</li> <li>Use Color Definitions from Job Settings</li> <li>Gray Colors</li> <li>Turn R=G=B Graphics into Gray</li> <li>R=G=B Tolerance Limit</li> <li>0.5</li> <li>Turn C=M=Y, K=0 Graphics into Gray</li> <li>C=M=Y Tolerance Limit</li> <li>0.5</li> <li>Marks Color</li> <li>Turn 4x100% CMYK into Spot Color 'All'</li> <li>Remove Spot Color 'All' into K</li> <li>Graphics &amp; Text</li> <li>Graphics &amp; Text</li> </ul>

- Spot Colors: General decision for using spot colors are converting them into process Colors.
- Gray Colors: Specialties for Gray-Colors defined in RGB and/or CMY(K)
- Marks Color: Some special settings, self explaining?

 $\rightarrow$  PDF/X-4 needs spot color-use settings only

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#### 2.2 PDF/X-4 in Prinect – Color Management Settings

- Some Special Color Management Features can be checked in advance during Preflight.
  - $\rightarrow$  Advance note that Color Carver special settings could be required

	-			-				<u></u>			
Example:	Actions	Reporting	Document	Pages / 1ups	Images	Fonts	Colors	ζ			
•	Preflight Set							>			
	<b>A</b>	•	Contains device F	RGB colors				>			
	A	•	Contains CIE L*a	*b colors or calibrat	ed RGB		$\sim$	>			
	A	-	Contains CMYK c	olors with ICC profil	e		$\sim$	2			
	Á	-	Contains ICC pro	file identical to PDF/	X Output Inten	t i		<pre></pre>			
	Á	-	Contains calibrat	ed gray				>			
	A	Ŧ	Contains Device I	N colors with ICC pr	rofile (NChann	el)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	2			
		-	Marks color 'All' is	used inside trim bo	хс			<pre></pre>	Keep	Spot Color "All"	
	A	•	Contains colored	gray (R=G=B or C=I	M=Y, K=0)			>		Turn Colored Gr	ay into Gray
	<u> </u>	•	Contains 4-color	CMYK black				2		Turn 4-color CM	YK Black into K
		-	Contains repeat p	oattern (pattern coloi	r space)			5			
		•	Maximum dot are	a in elements is abo	ove			>	340.0		] %
			Check images					Image area is at least			Dots
	Á	-	CMYK White is ov	erprinting				5		Check images	
		-	0% spot color is a	overprinting			X	>		Check images	
	<u> </u>	•	Gray is overprintir	ng				\$			
	A	•	"Normal" or "Opa	que" spot color is ov	/erprinting			5			
	A	•	"DieLine" or "Trar	isparent" spot color	is knockout		X	>			
	A	-	CMYK element wi	th ICC profile is ove	rprinting	1	1	7			
		-	Other color is ove	rprinting		Prefi	ght Setting	5			
14		نين		وتدامعه ي		A		<ul> <li>Transparen</li> </ul>	cy is pre	sent	
15		- Spo	t color not found	f in the color table	96	A		<ul> <li>Color blendi</li> </ul>	ing is pr	esent	
1.000		1-1 04-	* a aliaŭ Philaina # 12			4		Layers (option	onal cor	dents) are pres	ent



#### 2.2 PDF/X-4 in Prinect – Color Management Settings Specialist notes

- Keep K, also for ICC Based CMYK.
- Keep K, also working for Gray-Conversion
- Preserve K does not take into account any Ink-limits of Target Profile; it just tries to keep the K-numeric value the same.
- Some customers link two Prepare Sequences:
  - 1. sequence to convert incoming data into their Process Standard.
  - 2. sequence for conversion with an Ink-Reduction-ICC-Profile (for the same Print-Process / see also Color Toolbox)

3. Color Toolbox is powerful!

You can:

. . .

- create and modify ICC-Profiles
- create Ink Reduction Profile
- use existing ICC-Profiles to "import" Measuring values (for creating own ICC-Profiles)
- create Device Link Profile
- illustrate and compare Measurement Data (and/or ICC-Profile)
- create Profile with "Inverse Gamut-Mapping"-Feature (always)
- compare with Process Standard
- create Multi color ICC Profiles

... more in the Color Toolbox Workshop ...

#### 3. Color Toolbox

#### **Create ICC-Profile**

- with Illustration of Color Data
- Several Predefined Settings for most Use cases, but:

All Settings can be overwritten

	Measure	Compare	Analysis	Create	Edit	Process standard		
	Display of th	e test chart		_				
Test chart								
xy diagram								
ab diagram					Profile G	eneration Setup	A DESCRIPTION OF	×
La/Lb diagram						ocess parameters	r	
					Proces	s/Technology	Digital Printing	<b>•</b>
Dot gain					Paper o	lass/Media	Proof glossy	•
Gray balance					Proces	s colors/Profile type	CMYK 🔲 3 color C	MY
					-		🗌 Gray	
						omposition/Black gen		000 01
					UCR se	etting	Total dot area	260 %
							Maximum black	98 %
					GCR se	etting	Custom	Modify
					Profile	calculation options		
					Gamut	mapping	Default	Modify
					Paperv	vhite correction	Default	Modify
					Smooth	ning of measured value	es Default	Modify
					Profile	parameters		Show
							Load	Store
							OK Cancel	2

#### 3. Color Toolbox

#### create Ink Reduction Profile

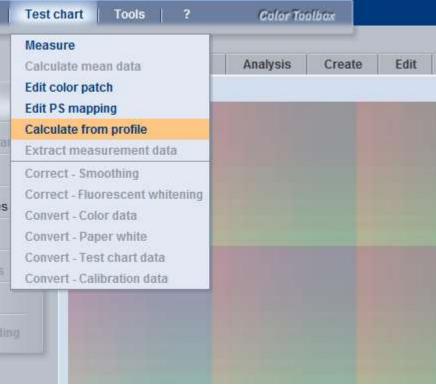
- Presetting is inside
- own GCR-Values as well as UCR-Values can be set

Print process parameters	(Luce i		1220		
Process/Technology	Ink Saving				
Paper class/Media	Wood-free coated				
Process colors/Profile type	Wood-free coated Wood-free uncoated				
Color composition/Black ger	neration				
UCR setting	Total dot area	280	%		
	Maximum black	98	%		
GCR setting	Custom	Modif	y		
Profile calculation options					
Gamut mapping	Default	Modif	y		
Paper white correction	Default	Modif	y		
Smoothing of measured valu	es Default	Modif	y		
Profile parameters		Show	r II		
	Load	Store			

#### 3. Color Toolbox

#### modify existing ICC profiles

Use existing ICC-Profiles to "import" Measuring values to create own ICC-Profiles



#### 3. Color Toolbox

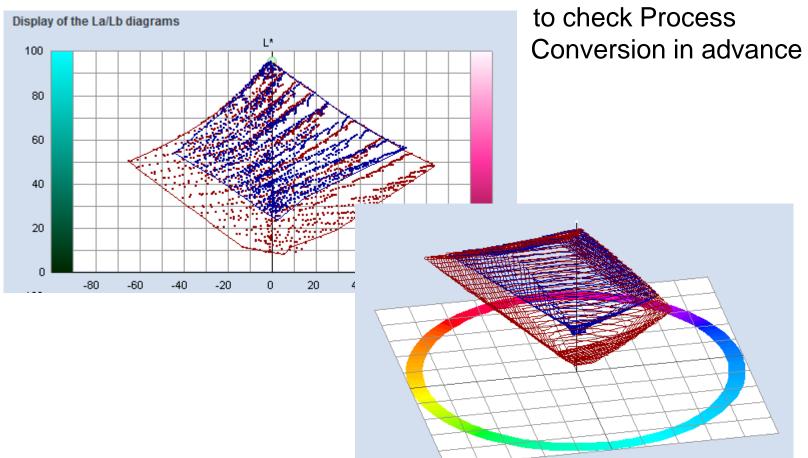
#### **Create Device Link Profiles**

- New feature: Keep GCR inside the max dot area of the Target Profile.
- Preserve Black Feature
- Preserve Colors

Device link profile			×				
Calculation of device link pro	ofiles						
Profile 1: FOGRA39_U330	_K95_9-10_Default.icc		Open				
Profile 2: FOGRA47_U300	_K98_G50_Default.icc		Open				
Rendering Intent:	Perceptual	-					
Preserve black:	Special	-					
Preserve colors:	Primaries and tonal values	-					
Shadow compensation C Keep GCR							
Description tag:							
DevLnk_perc_KS_noGCRKeep_PT_ FOGRA39_U330_K95_9-10_Default FOGRA47_U300_K98_G50_Default							
Calculate device link profile Calculate							
Save profile							
Calculation not started			Save				
		Clos	e ?				

#### 3. Color Toolbox

#### • Illustrate and Compare Measurement Data



#### 4. Other Color issues in Prinect

#### Preferences

Default job settings							
Marks and Colors							
Color standard: EURO 💌	Assignment of job colors to mark colors:						
Set new SpotColor to: Output 💌	<ul> <li>Automatically per surface</li> </ul>						
	🔾 User-defined: Global 🛛 🔾 User-defined: In Layout						
Use ProofColor from Prinect Signa Station	Allow spot colors for BCMY						
Print Order Target Color Space							
Black Up	For target "Process" take: CMYK, else L*a*b* 💌						
Cyan	For target "Output" take: CMYK, else L*a*b* ▼						
Magenta							
Yellow	Take color definitions for new colors from color tables						
Submit print order to press Autoresolve naming conflicts for new colors							
Printing Process	Printing Process						
Output Profile: ISOcoated_v2_eci	Change None						
Process Standard: ISO 12647-2_2008 FograWB NP - 1 (gl	ossy coated) Change None						

- Some predefinitions regarding Color can be made here as Presetting for new Jobs.
- It can still be changed inside the Job at a later stage. •

- 4. Other Color issues in Prinect Color Tables ...
- Are defined in the Administration-Area
- Color Tables can contain CMYK and/or Lab-Values for spot colors. In case of Multicolor, Color Tables can contain Hexachrome-Values instead of CMYK
- Prinect contains all Pantone-Tables as well as HKS-Tables.
- User Color Tables can be defined (CMYK or Hexachrome and Lab)
- Search order for spot colors in spot color-Tables is from Top to Bottom (Can be changed by Drag and Drop)

#### 4. Other Color issues in Prinect Color Tables ...

	🗹 Active 🛛 📅 System 🔍 User	Drag and drop to change order!					
× ×	Color Table	Process Color Model	Ink definition				
Order	🗹 🤝 FTBLAU	СМҮК	CMYK, L*a*b*				
rch (	☑ 7 PANTONE® Goe™ uncoated	СМҮК	L*a*b*				
Search	PANTONE® hexachrome coated	Hexachrome	Hexachrome, L*a*b*				
V V	☑ 7 PANTONE® Goe™ coated	СМҮК	L*a*b*				
<u> </u>	🗹 📅 PANTONE® solid coated	СМҮК	L*a*b*				
	PANTONE® color bridge coated	СМҮК	CMYK, L*a*b*				
	PANTONE® solid to process coated	СМҮК	CMYK, L*a*b*				
	_						

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## 4. Other Color issues in Prinect Color Tables (ctd)

• Preferences define the spot color-Handling for new Jobs

For target "Process" take:	CMYK, else L*a*b*	•
or target "Output" take:	CMYK, else L*a*b*	-
T.1	r new colors from color tal	bles
Take color definitions to	i nen coloro nom color la	

But can be changed inside the Job at a later stage

- Take color definition for new colors from color tables define whether to take the Color Definition out of the incoming PDF or out of a Color Table (Preflight can check for spot colors not defined in Color Tables!)
- Autoresolve naming conflicts is an option for mismatching Pantone spot color names in incoming Data.

## 4. Other Color issues in Prinect Spot Color inside a Job (1)

General Color Table of Job

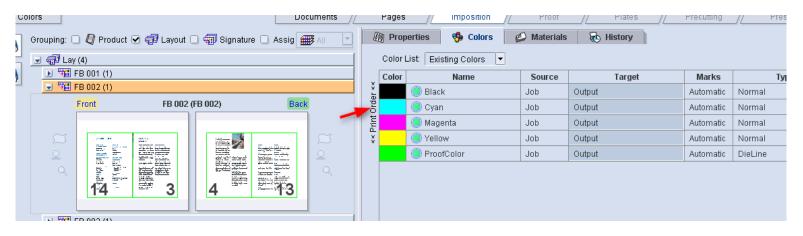
C	olors	0			1 Documents	Pa	ges Imposition	Proof		
0 🗶	Acc	ianme	nt of job colors to mark colors	"Proces	s" target CMYK, else L*a*b*	-	Submit print ord	er to press		
					'target CMYK, else L*a*b*	<b>•</b>	parations			
			r-defined: O Global O in lay		Take color definitions for new colors from color tables					
		Allow s	pot colors for BCMY	🗹 Auto	Autoresolve naming conflicts for new colors					
		Color L	.ist: Existing Colors 💌							
		Color	Name	Source	Target	Marks	Туре	Usage		
	er <<		🔘 Black	Job	Output	Automatic	Normal	Printing Unit		
	Ord		🔘 Cyan	Job	Output	Automatic	Normal	Printing Unit		
	Print Order		🔘 Magenta	Job	Output	Automatic	Normal	Printing Unit		
	ž		Yellow	Job	Output	Automatic	Normal	Printing Unit		
			🦲 Heidelberg Blau	varying	varying	Automatic	Normal	Printing Unit		
1			🔘 Heidelberg Grau	Color ta	Output	Automatic	Normal	Printing Unit		
-			PANTONE 294 C	Color ta	Output	Automatic	Normal	Printing Unit		
1			🔘 PANTONE Black 6 C	varying	varying	Automatic	Normal	Printing Unit		
Þ			ProofColor	Job	Output	Automatic	DieLine	Proof		

 Remark: In some cases when changing entries in the Color Tables a new Prepare is necessary. But users will get informed.

### 4. Other Color issues in Prinect Spot Color inside a Job (2)

#### Surface depending Color Table





## PRINECT USER DAYS

8th and 9th October 2014

5. International Prinect User Days, October 8th and 9th, 2014

#### Thank you for your attention!



