



PDF Days Europe 2022 | Berlin

The Ghent Workgroup 2022 specifications

or why standards are not relevant, too loose, and badly constructed

Claim to fame



- Working with PDF technology since 1997
 - Enfocus, Gradual Software, Four Pees
- Working in standardization since 1998
 - DDAP / ISO around PDF/X & PDF/A
 - GWG (Ghent Workgroup)
- Now
 - CTO at Four Pees
 - Executive Director & co-chair of the Specification Subcommittee at GWG



Setting the scene

We're not in Kansas any longer

Graphic arts



- Business card, roll-up banner, magazine, photo print, brochure, car wrap, highway billboard, floor tile, newspaper, photobook, mug, wallpaper, traffic sign, t-shirt, plate, pen, agenda, calendar, notebook, stamp, passport, money, plane wrap, rug, cap, curtain, greeting card...
- Sheetfed print, roll print, offset, digital, pad print, gravure, flexo...

Standards



- ISO
 - PDF/X
 - PDF/VT
 - PDF/VCR
- GWG (Ghent Workgroup)
 - Based on PDF/X
 - Different variants per market segment / technology



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Agenda

We all have one

Three strange claims



- In graphic arts, standards are irrelevant
- Graphic arts standards are way too broad
- Standards are badly constructed



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Irrelevant

Printers don't care about standards

The purpose of PDF standards



- Set up common rules for PDF files...
 - What can you do
 - What are you not allowed to do
 - What should you do
- ...so that those PDF files are fit for use

Fit for use



- “so that the PDF can be printed *as expected*”
 - The “X” in PDF/X comes from?
- Does a PDF need to be PDF/X or GWG compliant in order to be printed?
 - No
- Does it help?
 - Yes, the chance a file is good is higher



Too broad

Standards are so relaxed as to be unusable

Graphic arts



- Business card, roll-up banner, magazine, photo print, brochure, car wrap, highway billboard, floor tile, newspaper, photobook, mug, wallpaper, traffic sign, t-shirt, plate, pen, agenda, calendar, notebook, stamp, passport, money, plane wrap, rug, cap, curtain, greeting card...
- Sheetfed print, roll print, offset, digital, pad print, gravure, flexo...

Fit for use



- PDF/A: so the PDF can be archived long-term
- PDF/UA: so the PDF can be used by accessibility software

Graphic arts



- Business card, roll-up banner, magazine, photo print, brochure, car wrap, highway billboard, floor tile, newspaper, photobook, mug, wallpaper, traffic sign, t-shirt, plate, pen, agenda, calendar, notebook, stamp, passport, money, plane wrap, rug, cap, curtain, greeting card...
- Sheetfed print, roll print, offset, digital, pad print, gravure, flexo...

Fit for use



- PDF/A: so the PDF can be archived long-term
- PDF/UA: so the PDF can be used by accessibility software
- PDF/X: so the PDF can be printed
 - Covers only very, very basic requirements
 - Because of the broadness of the market segment
- GWG: so the PDF can be printed
 - Covers slightly more of the requirements



Badly constructed

Standards are delivered the wrong way

Audience



- People who need to understand or implement the standard
 - Industry experts, integrators, educators
 - Technical people at vendors
- Not the end-users



4 Requirements

Note: Only requirements defined in the list for a given variant have to be met.

4.1 ISO Compliancy

A PDF file shall be compliant to the ISO standard as defined in the Variants' table.

Note 1: The other requirements of this document never discard any of the requirements of the applicable PDF/X standard, rather to the contrary: a valid PDF file shall always comply with all of the PDF/X requirements and shall in addition also comply with the GWG requirements for the respective Variant.

Example: compression using LZW is not allowed even if it is not explicitly mentioned in this document since it is prohibited by PDF/X.

Note 2: It is a common understanding that XMP validation on a PDF/X-4 file is only done on document level XMP and not XMP present elsewhere in the PDF file, e.g. for a single image object.

4.2 Page Scaling

No page dictionary in the PDF shall contain the **UserUnit** key.

4.3 Crop Box

If a **CropBox** key is present in any page dictionary, it shall have the same value as the **MediaBox**.

4.4 Page Size and Orientation

The effective size defined by the **TrimBox** key shall be equal for all pages of a PDF file. If



5 Variants

5.1 GWG_MagazineAds_2015 CMYK

Requirement	Severity	Value
ISO Compliancy (4.1)	Error	PDF/X-4:2010
Page Scaling (4.2)	Error	
Crop Box (4.3)	Error	
Empty Pages (4.5)	Error	
Number of Pages (4.6)	Error	
Overprint Grayscale (4.7)	Warning	
Overprint White Text (4.8)	Error	
Overprint White Paths (4.9)	Warning	
Overprint 100% Black Text (4.10)	Warning	
Overprint 100% Black Text defined in DeviceGray (4.11)	Warning	
Overprint Thin 100% Black Line (4.12)	Warning	
Overprint Thin 100% Black Line defined in DeviceGray (4.13)	Warning	
Font Courier (4.14)	Warning	
Rich Black Text (4.15)	Warning	K=0.85 T=2.8
Small Text (4.16)	Warning	9.0

ID	Text ID	Version	Title	Text
D0001	d-pdf-standard	1	PDF Standard	The ISO 32000-2 standard document as published by the ISO.
D0002	d-element	1	Element	A graphics object as defined in the PDF Standard (D0001), section 8.2.
D0003	d-page-element	1	Page Element	An Element (D0002) that is not a processing step PDF object as defined in ISO 19593-1 3.1 and that does not lie completely outside the surface of the printed product, whereby the surface of the printed product is defined in ISO 19593-1 7.4.1. If the document has an OCProperties dictionary, the Element (D0002) has to be visible as defined in the default state (value of the D key in the OCProperties dictionary).
D0004	d-path-element	1	Path Element	A type of Page Element (D0003) defined as a "path object".
D0005	d-text-element	1	Text Element	A type of Page Element (D0003) defined as a "text object".
D0006	d-image-element	1	Image Element	A type of Page Element (D0003) defined as "inline image object" or "image XObject".
D0007	d-1bit-image-element	1	1-Bit Image Element	An Image Element (D0006) containing only color channel(s) with one-bit samples.
D0008	d-continuous-tone-image-element	1	Continuous-Tone Image Element	An Image Element (D0006) that is not a 1-Bit Image Element (D0007).
D0009	d-image-mask-element	1	Image Mask Element	An Image Element (D0006) where the image dictionary contains an ImageMask key set to <i>true</i> .
D0010	d-white-colour	1	White Colour	A colour defined by any of the following combinations: <ul style="list-style-type: none"> - Colour space set to DeviceCMYK and colour values set to 0, 0, 0, 0. - Colour space set to Separation and colour value set to 0. - Colour space set to DeviceN and the value of all colorants (ignoring None colorants) set to 0. - Colour space set to DeviceGray and colour value set to 1.
D0011	d-white-fill-colour	1	White Fill Colour	A White Colour (D0010) set as the colour space used for filling an Element (D0002).
D0012	d-white-stroke colour	1	White Stroke Colour	A White Colour (D0010) set as the colour space used for stroking an Element (D0002).
D0013	d-black-colour	1	Black Colour	A colour defined by any of the following combinations: <ul style="list-style-type: none"> - Colour space set to DeviceCMYK and colour values set to 0, 0, 0, 1. - Colour space set to Separation, with name set to <i>Black</i> and colour value set to 1. - Colour space set to DeviceN with one colorant set to <i>Black</i> and colour value set to 1, and the value of all other colorants (ignoring None colorants) set to 0. - Colour space set to DeviceGray and colour value set to 0.
D0014	d-black-fill-colour	1	Black Fill Colour	A Black Colour (D0013) set as the colour space used for filling an Element, where the CA value in the extended graphic state for the Element equals 1 and the blend mode is set to <i>Normal</i> .
D0015	d-black-stroke-colour	1	Black Stroke Colour	A Black Colour (D0013) set as the colour space used for stroking an Element, where the ca value in the extended graphic state for the Element equals 1 and the blend mode is set to <i>Normal</i> .
D0016	d-ctm	1	CTM	The current transformation matrix as defined in the PDF Standard (D0001) in section 8.4.1.

ID	Text ID	Version	Title	Text	Notes (informal)
R0001	r-base-standards	1	Base ISO standards	A PDF file shall be compliant to the ISO standard(s): <A>. In case of (perceived) conflict, the requirements of the base ISO standards shall always take precedence over any requirements defined here.	
R0002	r-page-scaling	1	Page scaling	No page dictionary in the PDF file shall contain the UserUnit key.	
R0003	r-visible-page-area	1	Visible page area	For all pages in the PDF file, the CropBox shall coincide with the MediaBox .	This can be accomplished by explicitly defining the same values as the MediaBox , or by using the CropBox key, in which case it falls back to the values defined in the MediaBox .
R0004	r-same-size-orientation	1	Same page size and orientation	The size of the TrimBox shall be the same for all pages in the PDF file. No pages in the PDF file shall be rotated through the use of the Rotate key.	
R0005	r-empty-page	1	Empty page	No page in the PDF file shall be completely empty. A page is considered empty if a rendered version of all Page Elements (D0003) yields a total ink coverage equal to zero.	
R0006	r-one-page	1	One page	The number of pages in the PDF file shall be exactly one (1).	
R0007	r-overprint-white-text	1	Overprinting white text	A Text Element (D0005) that is set to fill, or stroke and fill, and uses a White Fill Colour (D0011), shall not use Fill Overprint (D0020). A Text Element (D0005) that is set to stroke, or stroke and fill, and uses a White Stroke Colour (D0012), shall not use Stroke Overprint (D0021).	
R0008	r-overprint-white-path	1	Overprinting white paths	A Path Element (D0004) that is set to fill, or stroke and fill, and uses a White Fill Colour (D0011), shall not use Fill Overprint (D0020). A Path Element (D0004) that is set to stroke, or stroke and fill, and uses a White Stroke Colour (D0012), shall not use Stroke Overprint (D0021).	
R0009	r-overprint-pure-black-text	1	Overprinting pure black text	A Text Element (D0005) that is set to fill, or stroke and fill, and uses a Black Fill Colour (D0014) and has an Effective Font Size (D0019) smaller than <A> point shall use Fill Overprint (D0020). A Text Element that is set to stroke, or stroke and fill, and uses a Black Stroke Colour (D0015) and has an Effective Font Size (D0019) smaller than <A> point shall use Stroke Overprint (D0021). - If the colour space in use for either of the above rules is defined as DeviceCMYK , the value of the OPM key additionally shall be set to 1. - If the colour space in use for the fill or stroke part of the above rules is defined as DeviceCMYK , the value of the OPM key additionally shall be set to 1.	

ID	Requirement title	Magazine Ads CMYK		Magazine Ads CMYK + RGB		Newspaper Ads CMYK		Newspaper Ads CMYK	
		Severity	Additional values	Severity	Additional values	Severity	Additional values	Severity	Additional values
R0001	Base ISO standards	error	A = ISO 15930-9	error	A = ISO 15930-9	error	A = ISO 15930-9	error	A = ISO 15930-9
R0002	Page scaling	error		error		error		error	
R0003	Visible page area	error		error		error		error	
R0004	Same page size and orientation	ignore		ignore		ignore		ignore	
R0005	Empty page	error		error		error		error	
R0006	One page	error		error		error		error	
R0007	Overprinting white text	error		error		error		error	
R0008	Overprinting white paths	warning		warning		warning		warning	
R0009	Overprinting pure black text	warning	A = 12	warning	A = 12	warning	A = 12	warning	A = 12
R0010	Overprinting pure black thin lines	warning	A = 2	warning	A = 2	warning	A = 2	warning	A = 2
R0011	Overprinting pure black small text in DeviceGray	warning	A = 12	warning	A = 12	warning	A = 12	warning	A = 12
R0012	Overprinting pure black thin lines in DeviceGray	warning	A = 2	warning	A = 2	warning	A = 2	warning	A = 2
R0013	Overprinting device gray	warning		warning		warning		warning	
R0014	Use of the Courier font	warning		warning		warning		warning	
R0015	Rich black text	warning	A = 0.85, B = 2.8	warning	A = 0.85, B = 2.8	warning	A = 0.85, B = 2.2	warning	A = 0.85, B = 2.2
R0016	Registration problems with small white text	warning	A = 9.0	warning	A = 9.0	warning	A = 10.0	warning	A = 10.0
R0017	Registration problems with small multi-channel text	warning	A = 9.0	warning	A = 9.0	warning	A = 10.0	warning	A = 10.0
R0018	Registration problems with thin white lines	warning	A = 0.25	warning	A = 0.25	warning	A = 0.25	warning	A = 0.25
R0019	Registration problems with thin multi-channel lines	warning	A = 0.25	warning	A = 0.25	warning	A = 0.25	warning	A = 0.25
R0020	Use of spot colors	error	A = 0	error	A = 0	error	A = 0	error	A = 0
R0021	Spot colors with different suffixes	ignore		ignore		ignore		ignore	
R0022	Case-sensitive spot color names	ignore		ignore		ignore		ignore	
R0023	Different spot colours that are visually identical	ignore		ignore		ignore		ignore	
R0024	Registration color	warning		warning		warning		warning	

Three strange claims



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**working
together!**

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That's all folks!

Questions, rebuttals, insults...