Ghent Workgroup

6 things about color and PDF…

David Zwang
Chair
Steve Carter
Co-chair Packaging Subcommittee

October 29, 2020

David Zwang

Zwang & Company

Ghent Workgroup

- David Zwang, travels around the globe helping companies increase their productivity, margins and market reach. With over 40 years of industry experience, David specializes in process analysis, automation, engineering, and strategic development of firms in the fields of publishing and packaging across the globe. His expertise in production optimization, strategic business planning, market analysis, and related and has transformed many businesses. He is currently the Chairman of the GWG (Ghent Workgroup) and sits on many national and international standards bodies.

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Steve Carter

Mean Dad Consulting

Industry Consultant

30+ years leveraging technology to elevate packaging graphic production, from design through final print and known as a “Mean Dad!”

Steve has a passion for solving problems using technology. He has years of experience leveraging many different technologies to enhance the graphic design-to-print production process. He has spent the better part of his career in executive and management roles with Phototype, Southern Graphic Systems (SGS), and TSI Graphics, managing strategic initiatives involving technology working directly with printers and CPG companies. He now consults in the industry.

Among his many other work-related activities, he believes strongly in helping drive future technology innovation at the industry level. He currently serves as the co-chair of the Ghent Workgroup Packaging subcommittee, a member of the ISO TC130 WG2 committee, and a member of the EskoWorld Advisory board.

We Want Your Questions!

- Please ask any questions by typing them in the chat window.
- We will answer as many as possible at the end of the session.
- If we don’t have the opportunity or time to answer your question, one of us will get back to you after the session.

Now on with the show!

- 1 -
Common Color Spaces

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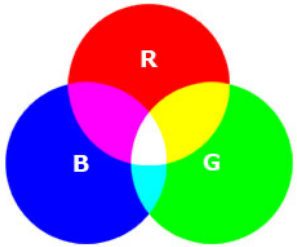
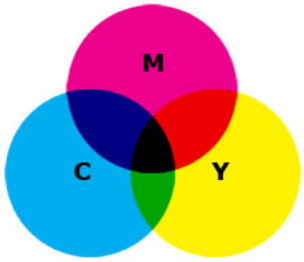
Common Color Spaces

- RGB
- DeviceGray
- CMYK
- CMYK + Spots

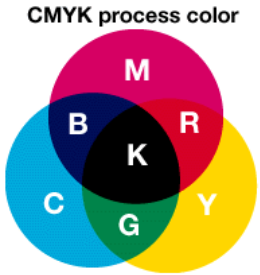


RGB - Subtractive Colors

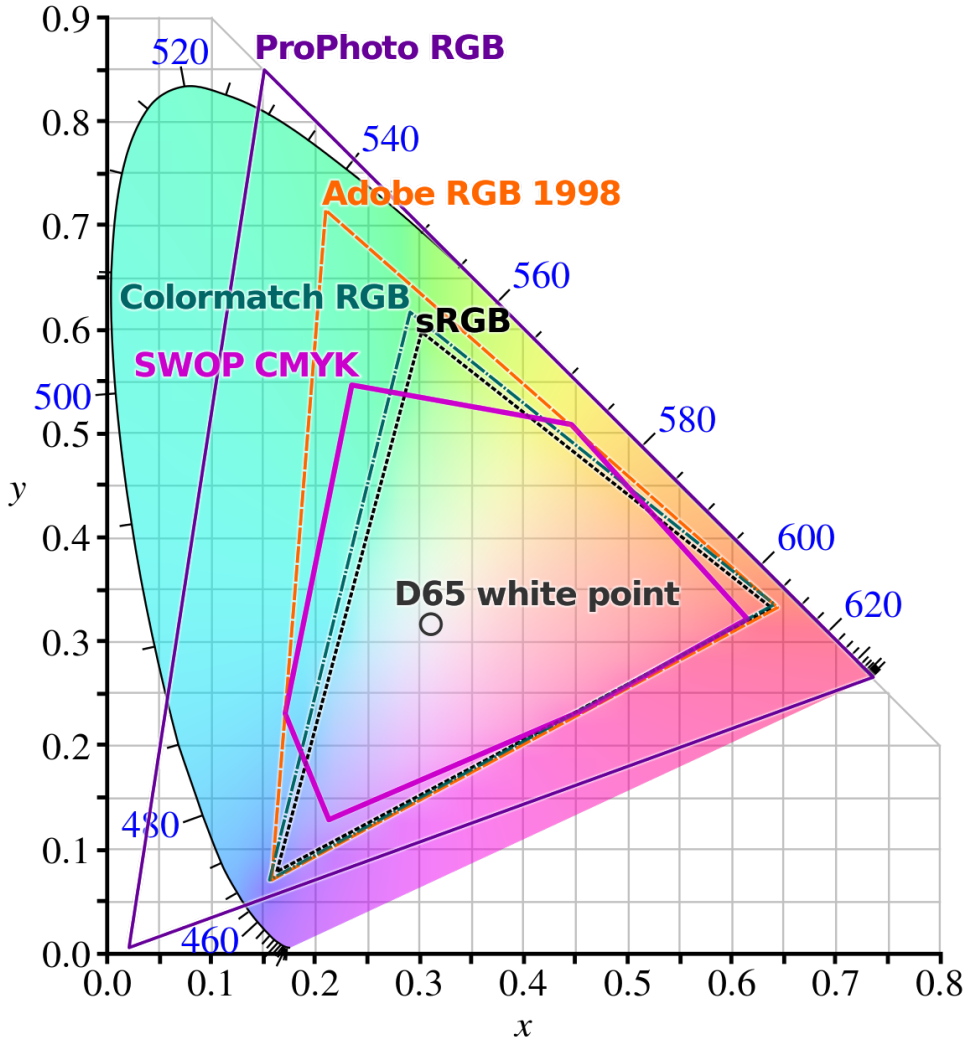

DeviceGray



CMYK - Additive Colors



Color Space Relationships



- 2 -
Image/Object Profiles

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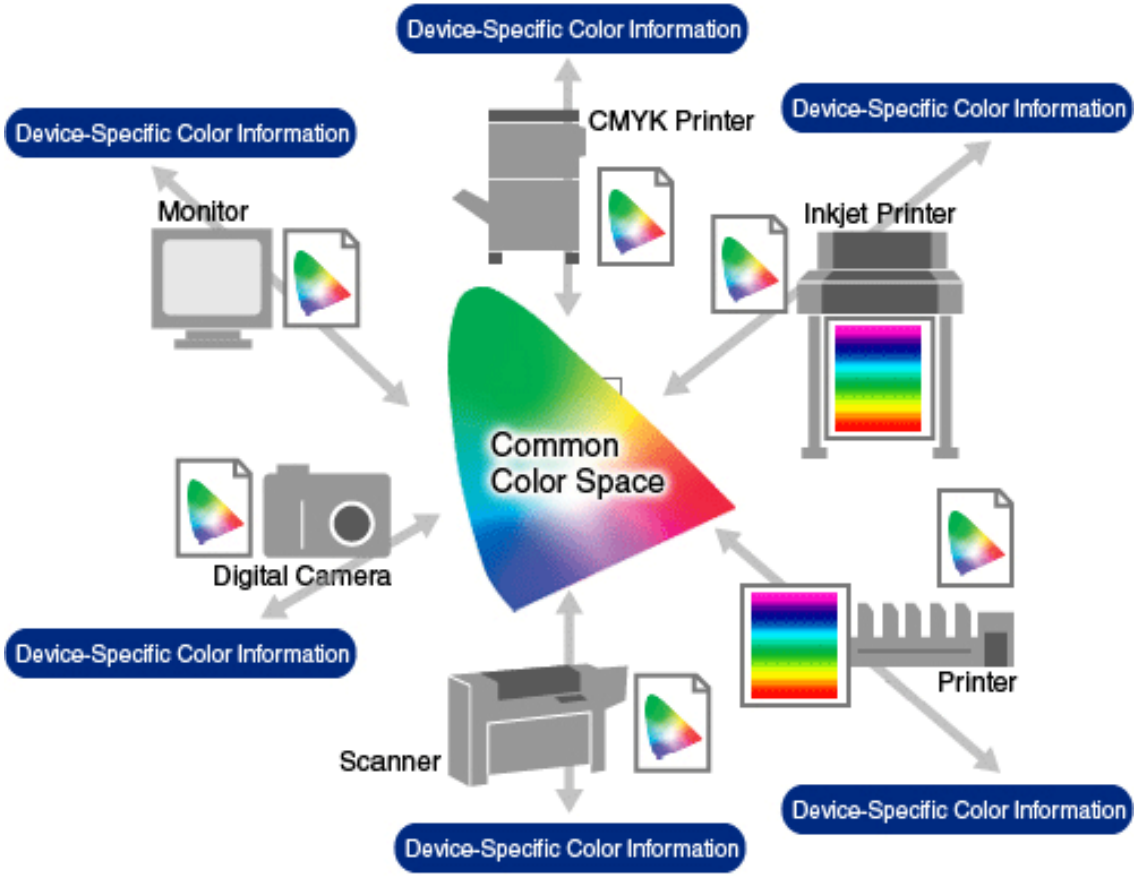
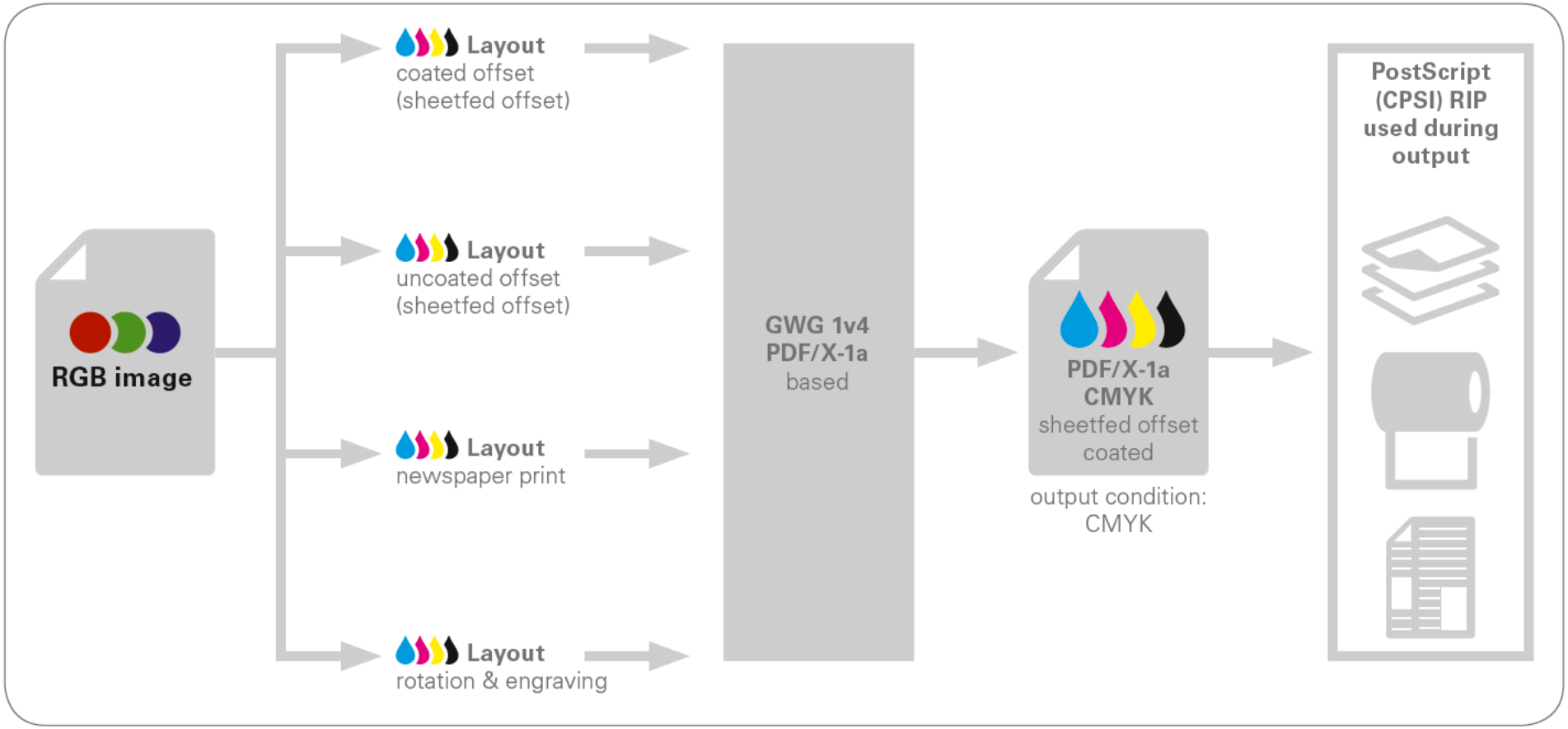
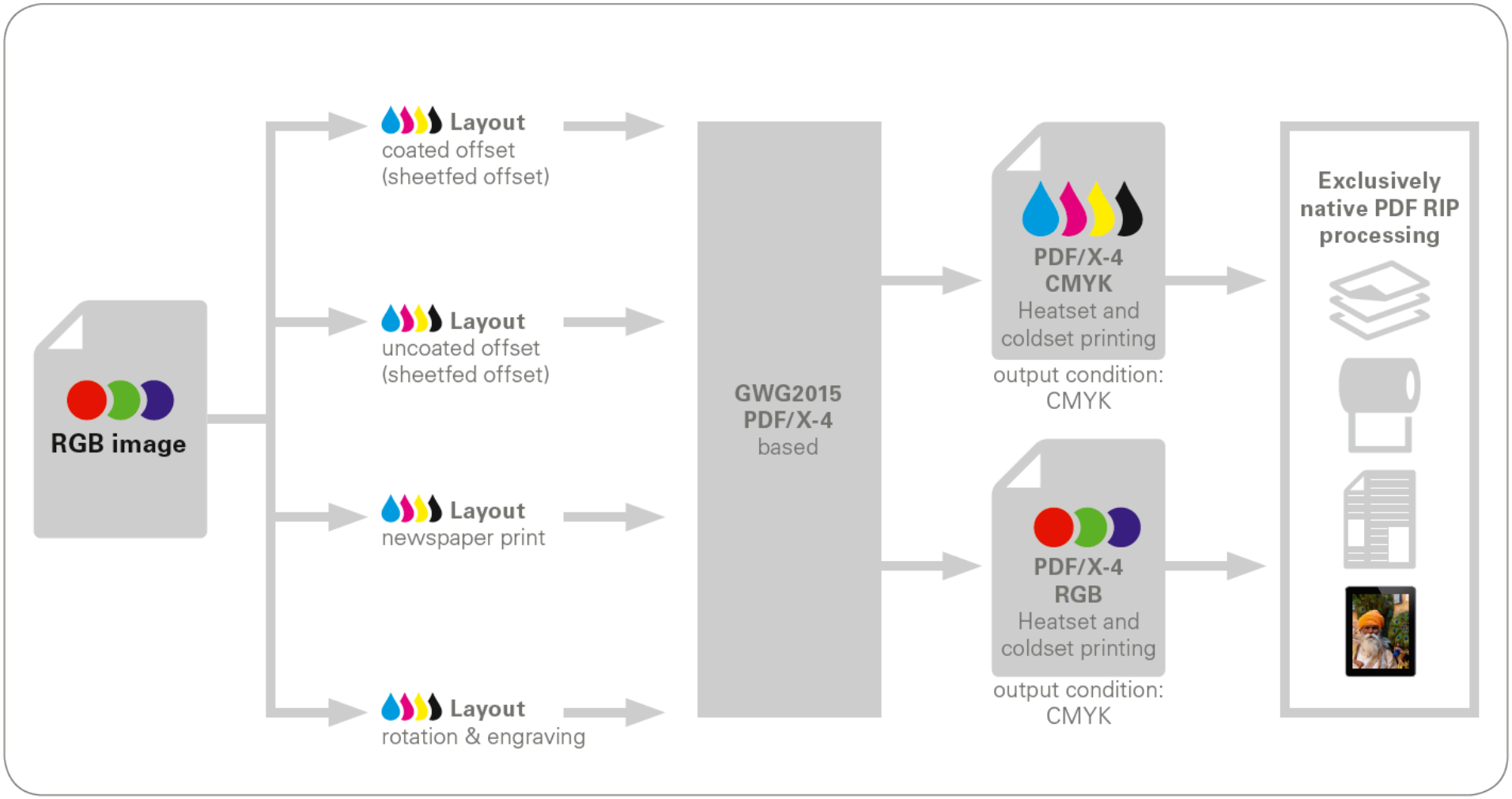
Profiles – what and why



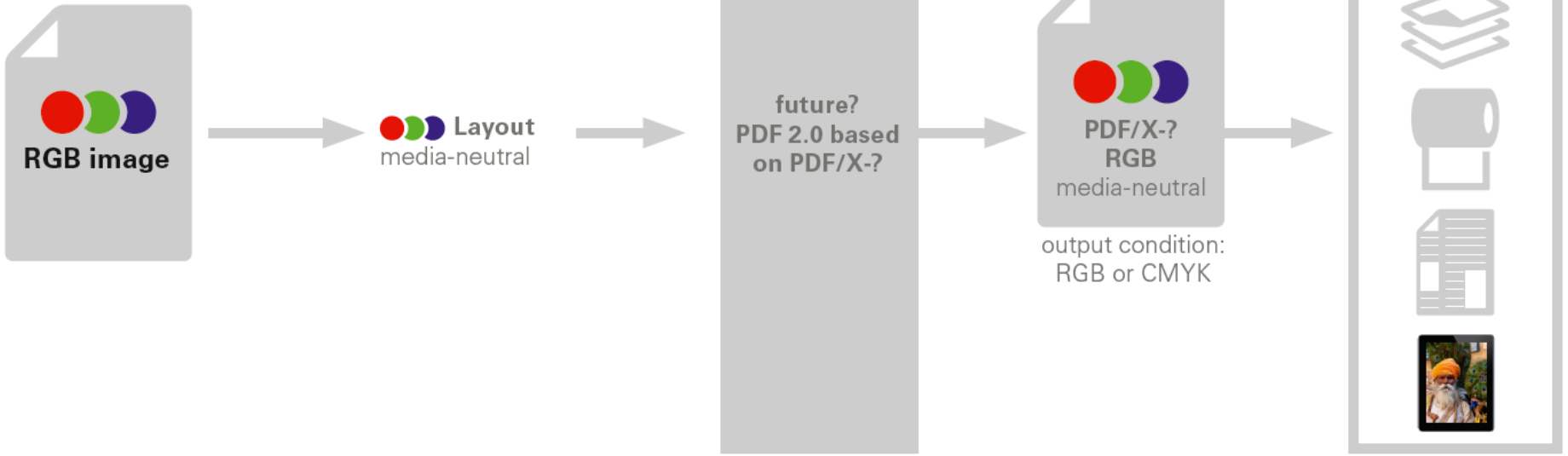
PDF/X-1a

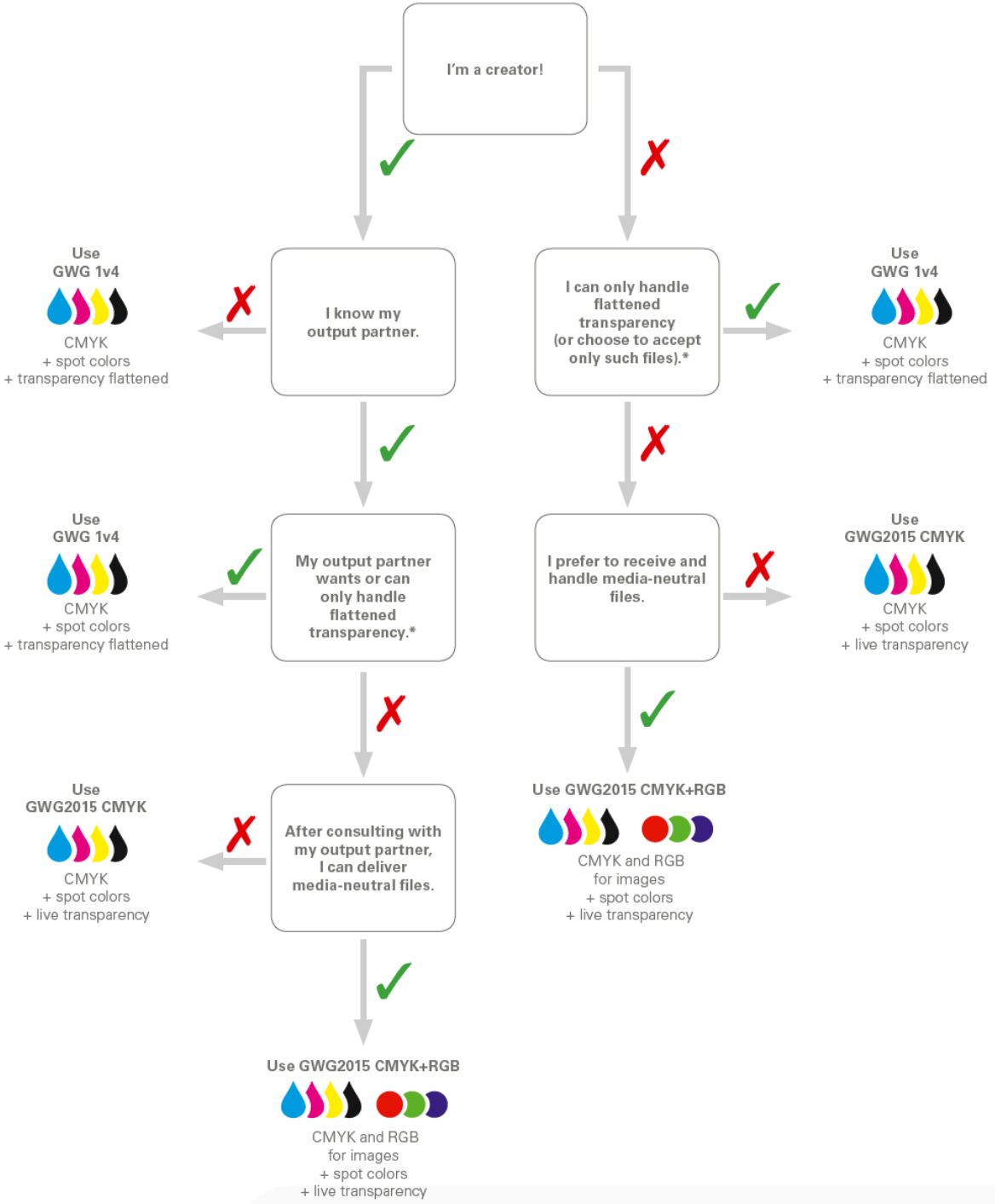

RGB image
Layout
coated offset
(sheetfed offset)
Layout
uncoated offset
(sheetfed offset)
Layout
newspaper print
Layout
rotation & engraving
GWG 1v4
PDF/X-1a
based
PDF/X-1a
CMYK
sheetfed offset
coated
output condition:
CMYK
PostScript
(CPSI) RIP
used during
output

PDF/X-4


RGB image
Layout
coated offset
(sheetfed offset)
Layout
uncoated offset
(sheetfed offset)
Layout
newspaper print
Layout
rotation & engraving
GWG2015
PDF/X-4
based
PDF/X-4
CMYK
Heatset and
coldset printing
output condition:
CMYK
PDF/X-4
RGB
Heatset and
coldset printing
output condition:
CMYK
Exclusively
native PDF RIP
processing

PDF/X-6 (future)




I'm a creator!
I know my output partner.
I can only handle flattened transparency (or choose to accept only such files).*
My output partner wants or can only handle flattened transparency.*
I prefer to receive and handle media-neutral files.
After consulting with my output partner, I can deliver media-neutral files.
Use GWG 1v4
CMYK
+ spot colors
+ transparency flattened
Use GWG 1v4
CMYK
+ spot colors
+ transparency flattened
Use GWG 1v4
CMYK
+ spot colors
+ transparency flattened
Use GWG2015 CMYK
CMYK
+ spot colors
+ live transparency
Use GWG2015 CMYK
CMYK
+ spot colors
+ live transparency
Use GWG2015 CMYK+RGB
CMYK and RGB
for images
+ spot colors
+ live transparency
Use GWG2015 CMYK+RGB
CMYK and RGB
for images
+ spot colors
+ live transparency

- 3 -

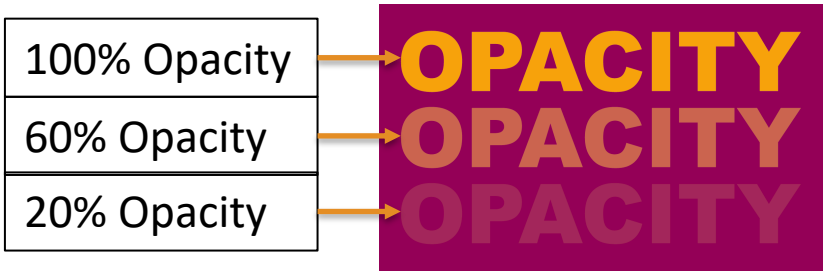
Transparency

Transparency & Opacity

- What is Transparency?
  - Technically called Native Transparency, which is also called vector-based transparency, is a useful tool available in many illustration and page layout programs. These tools provide the ability to add transparent effects to design objects that can greatly enhance the creative palette. Things like vignettes, drop shadows, feathered edges, glows, etc., are all examples of Native Transparency. All Native Transparency is part of Blending Modes in PDF terms.

Transparency & Opacity

- What is Opacity?
  - Opacity: Opacity is technically part of blending modes in PDF terms. It describes the properties of a color and how it should react (blend) with other colors (or objects) below it in the PDF file. It is typically used in conjunction with transparency for artistic effects.



Transparency & Opacity

- Difference between Opacity and Transparency
  - The first important thing to understand is that transparency and overprint are not the same thing. Transparency is used primarily to create artistic effects like shadows and feathering, which is different than just overprinting. Opacity determines how much of the color (or effect) overprints the underlying object or color. In other words, it determines how the underneath color or object is affected by the transparency effect and how it is to be seen in the final output or rendering.

Don’t believe everything you see in Acrobat

- File as built in Illustrator

Note: This is process black ink

Note: All 800 Pantone inks are opaque colors

Note: There is some hiden text

Note: This is process yellow ink

PDF/X-4

Don’t believe everything you see in Acrobat

- File shown with overprint preview

Note: This is process black ink

Note: All 800 Pantone inks are opaque and set to overprint

Note: This is process yellow ink set to overprint

Don’t believe everything you see in Acrobat

- File as it was printed

Note: This is process black ink

Note: All 800 Pantone inks are opaque and set to overprint

Note: This is process yellow ink set to overprint

- 4 -

Output Parameters

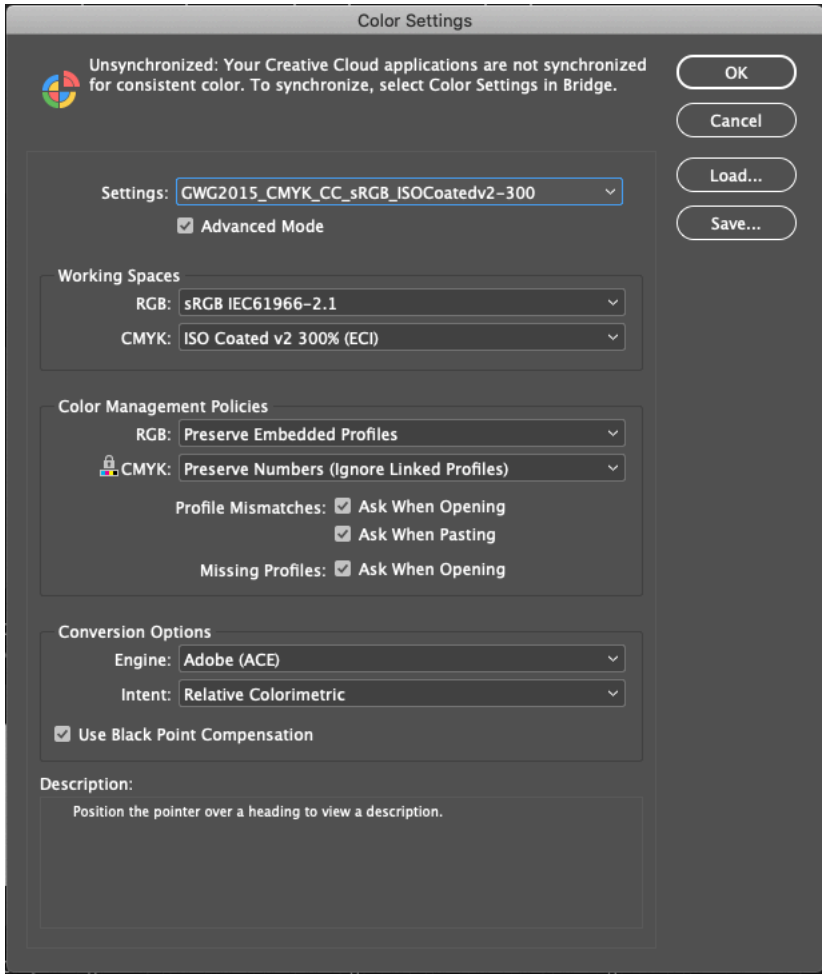
Print Output Parameters

- Output Intent
  - Defines a specific printing condition
  - Encapsulates the print technology to be used (sheet or web offset, flexo, gravure, inkjet, digital press, etc), and the media that it will be printed on
  - Provides the way to set correct expectations and deliver those instructions for processing
  - Standardized intents include SWOP, Fogra27, GRACoL, etc.
  - A PDF/X file must include an “output intent”
  - An output intent contains
    - The name of the output condition
    - Facilitates automated production

Adobe Cloud Color Conflicts

- Application Color Settings can conflict with PDF Output Settings

Adobe Application Color Settings



Key Settings

- Working Spaces
- Color Management Policies

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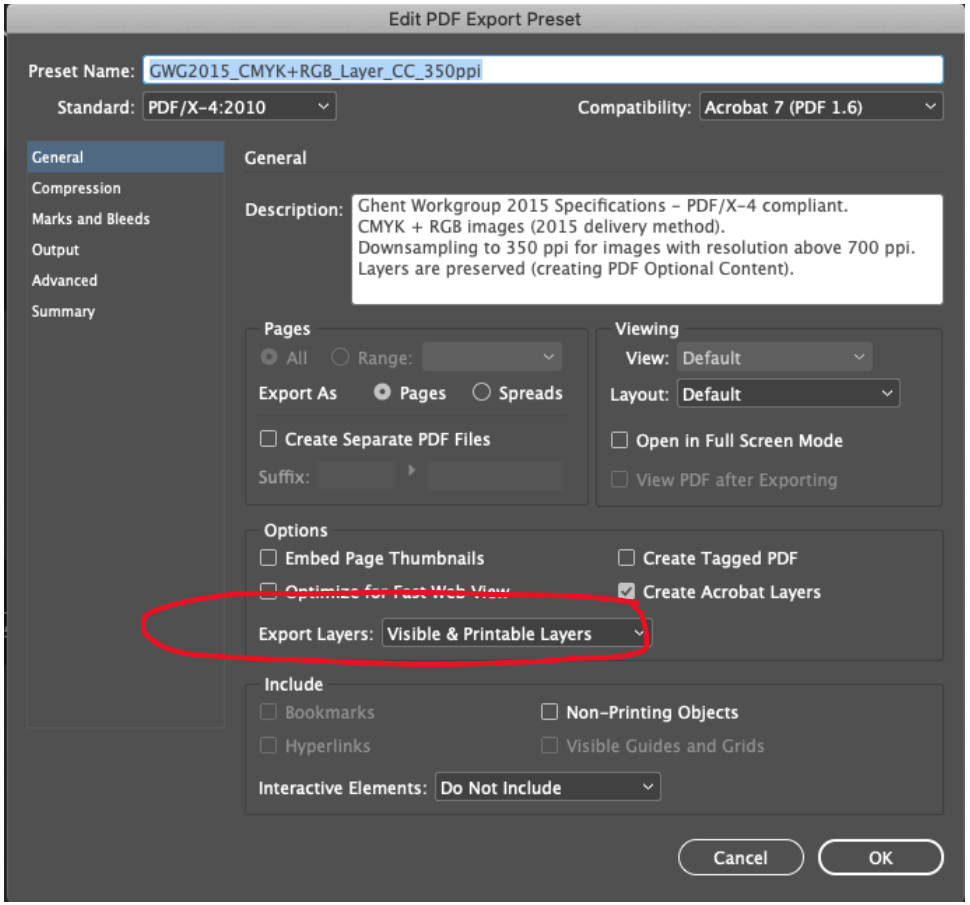
PDF Export Settings



Key Settings

- Layers

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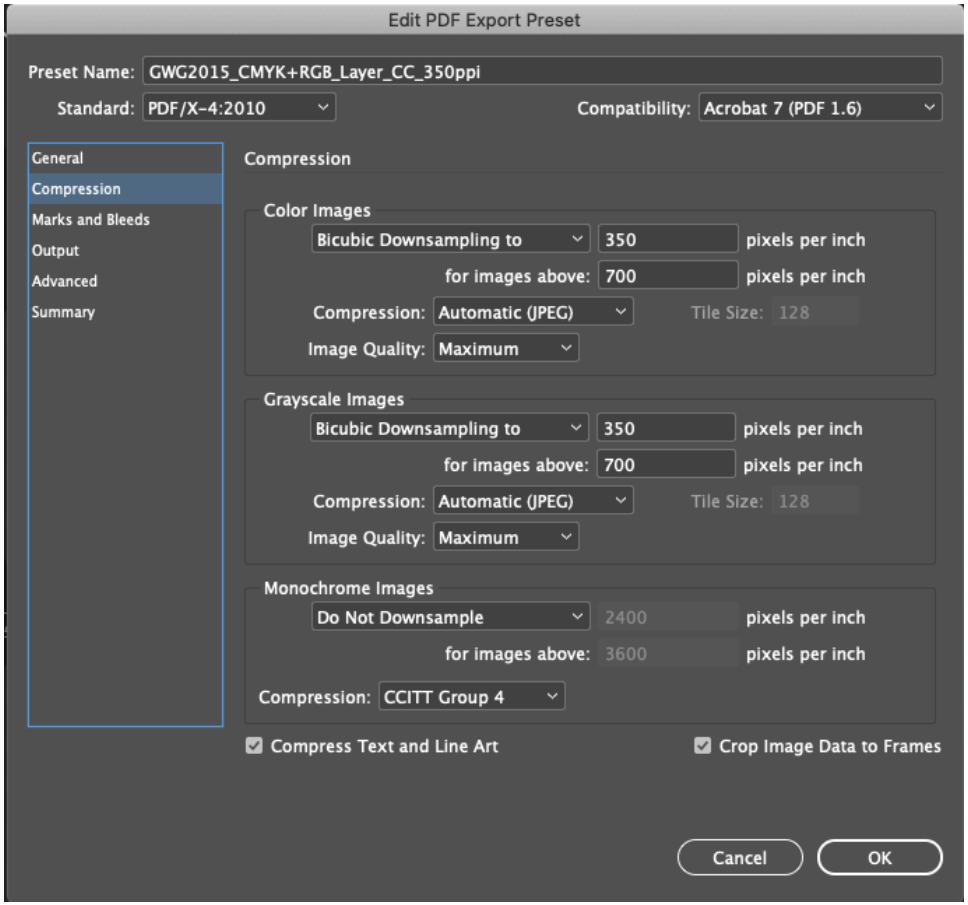
Resolution and Downsampling



Key Settings

- Communicate with PSP
- GWG presets

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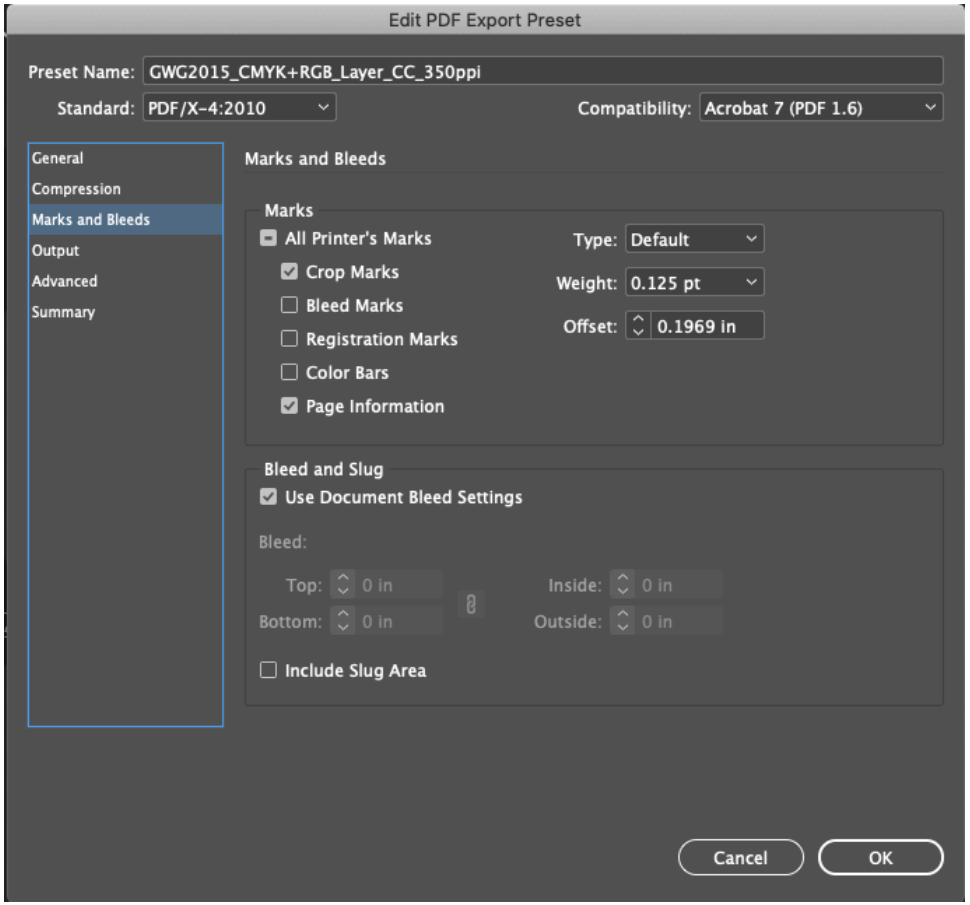
Marks Settings



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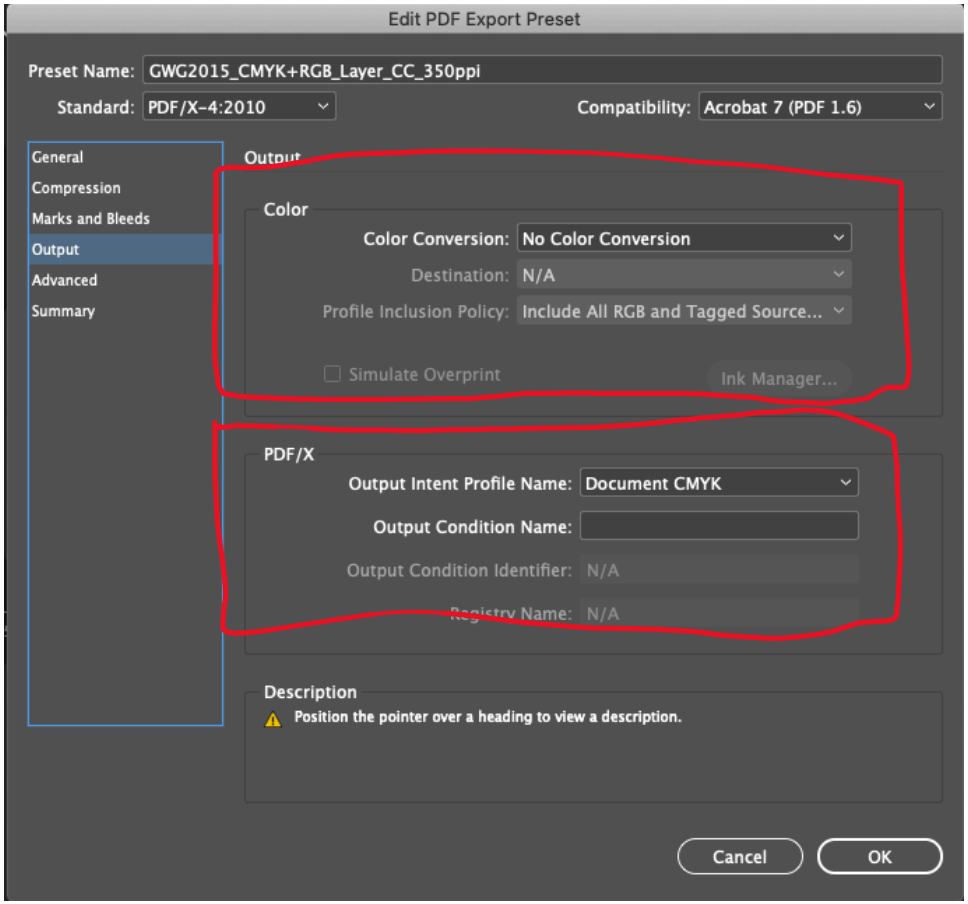
Color Conversion!



Key Settings

- Color Conversion or NOT
- Output Intent

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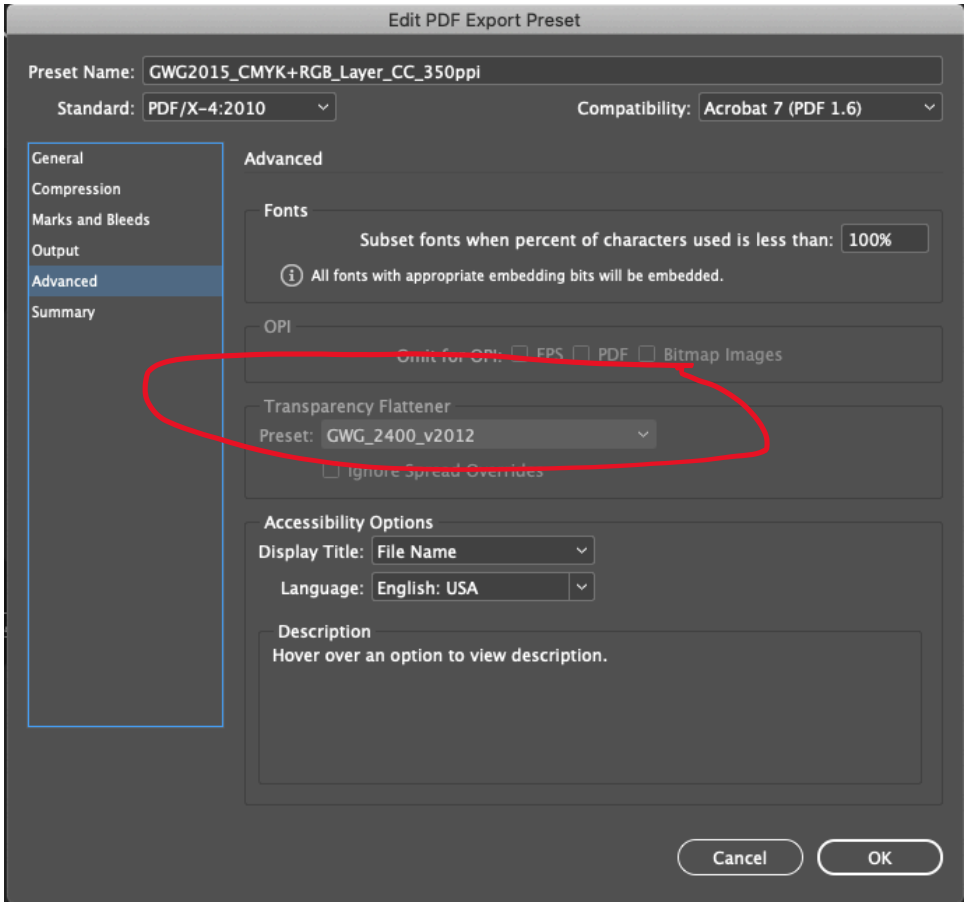
Fonts and Flattening



If use PDF/X 1a (shouldn't)

- The Flattening could be an issue

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RIP Settings

RIP Processing

- Honor or Force Intents (embedded profiles)
  - Object intents
    - Pro
    - Con
  - Output intent
    - Pro
    - Con

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GWG Ouput Test Suite

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Testing Workflow

GWG Output Suite 5.0

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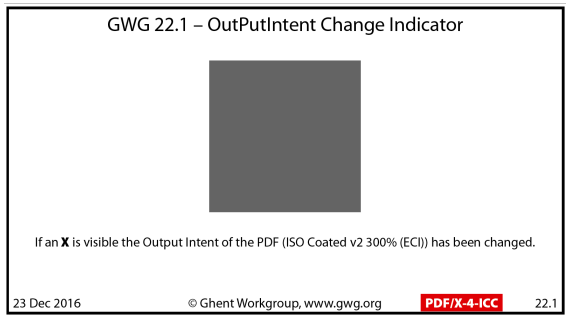
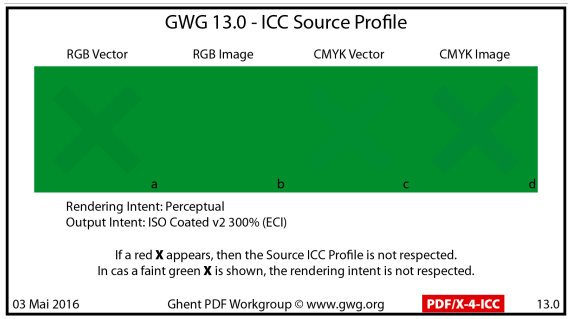
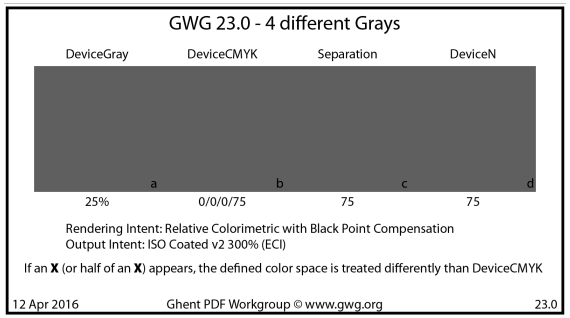
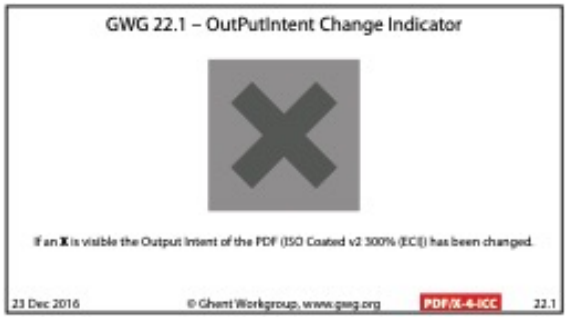
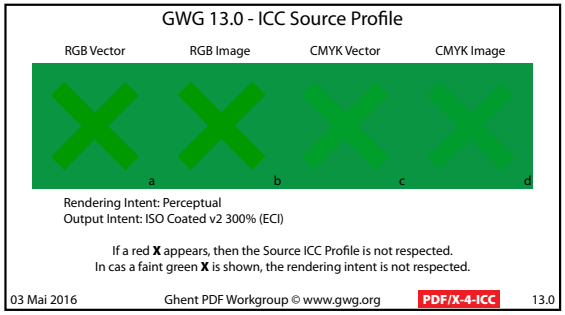
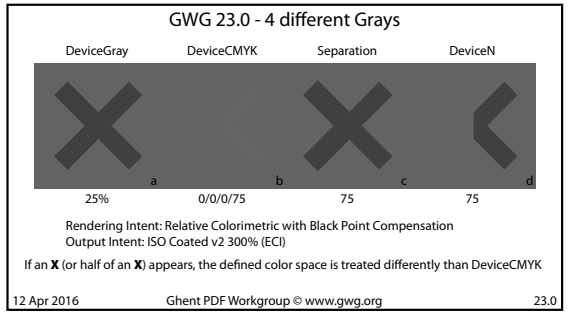






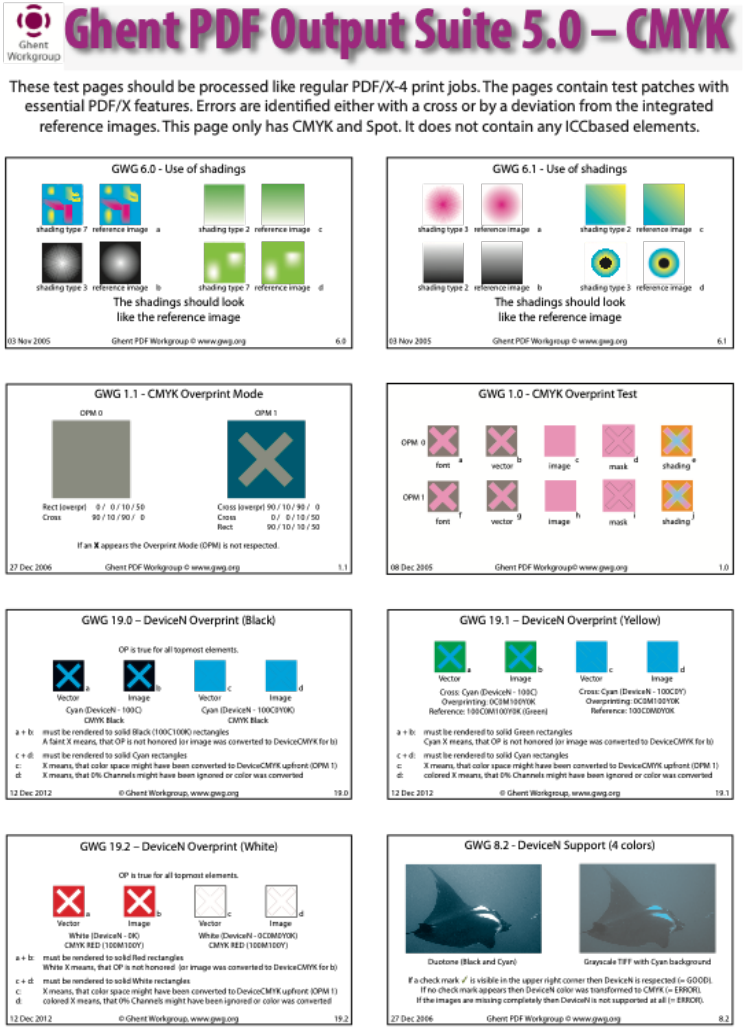






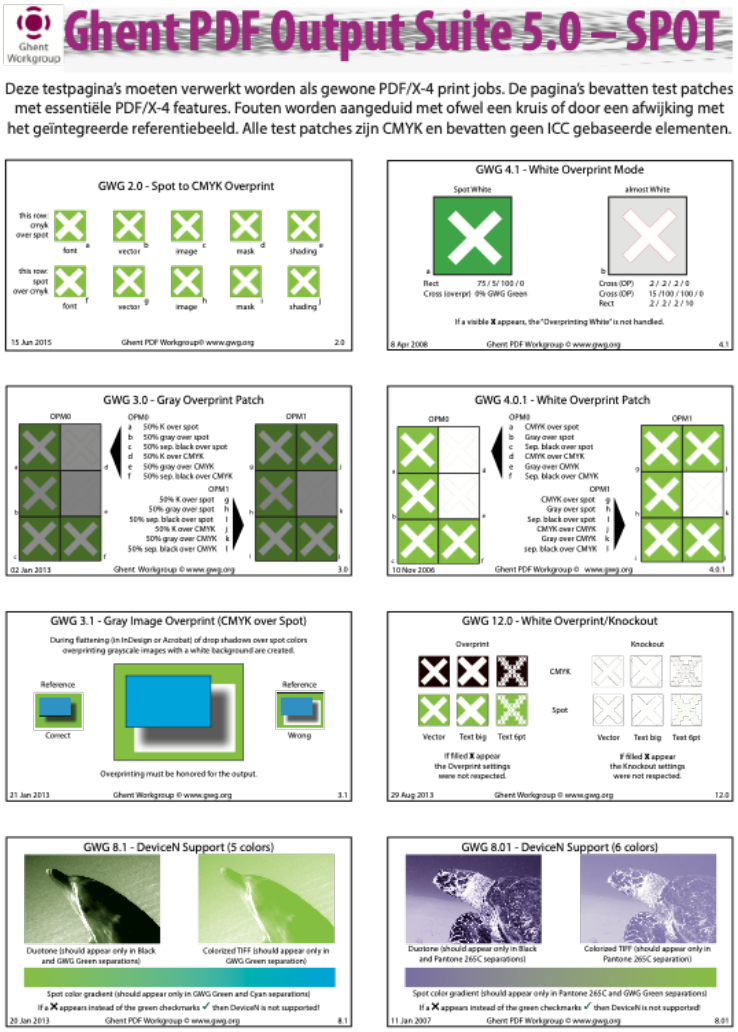
Testing Workflow

GWG Output Suite 5.0



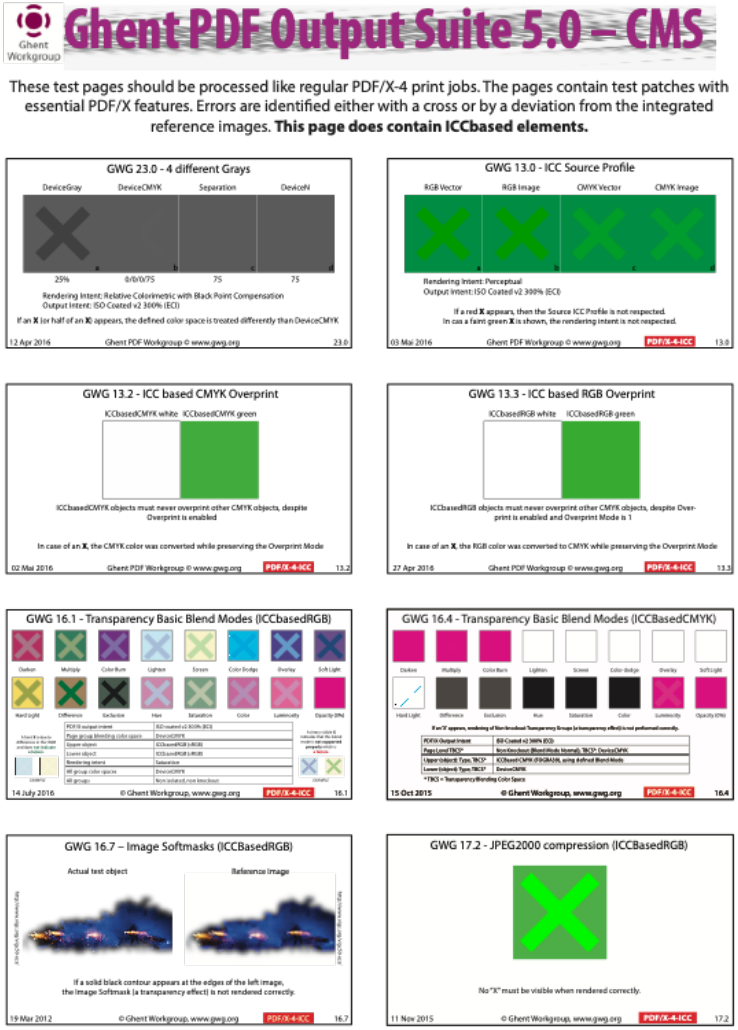
Testing Workflow

GWG Output Suite 5.0



Testing Workflow

GWG Output Suite 5.0



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GWG Reference Materials

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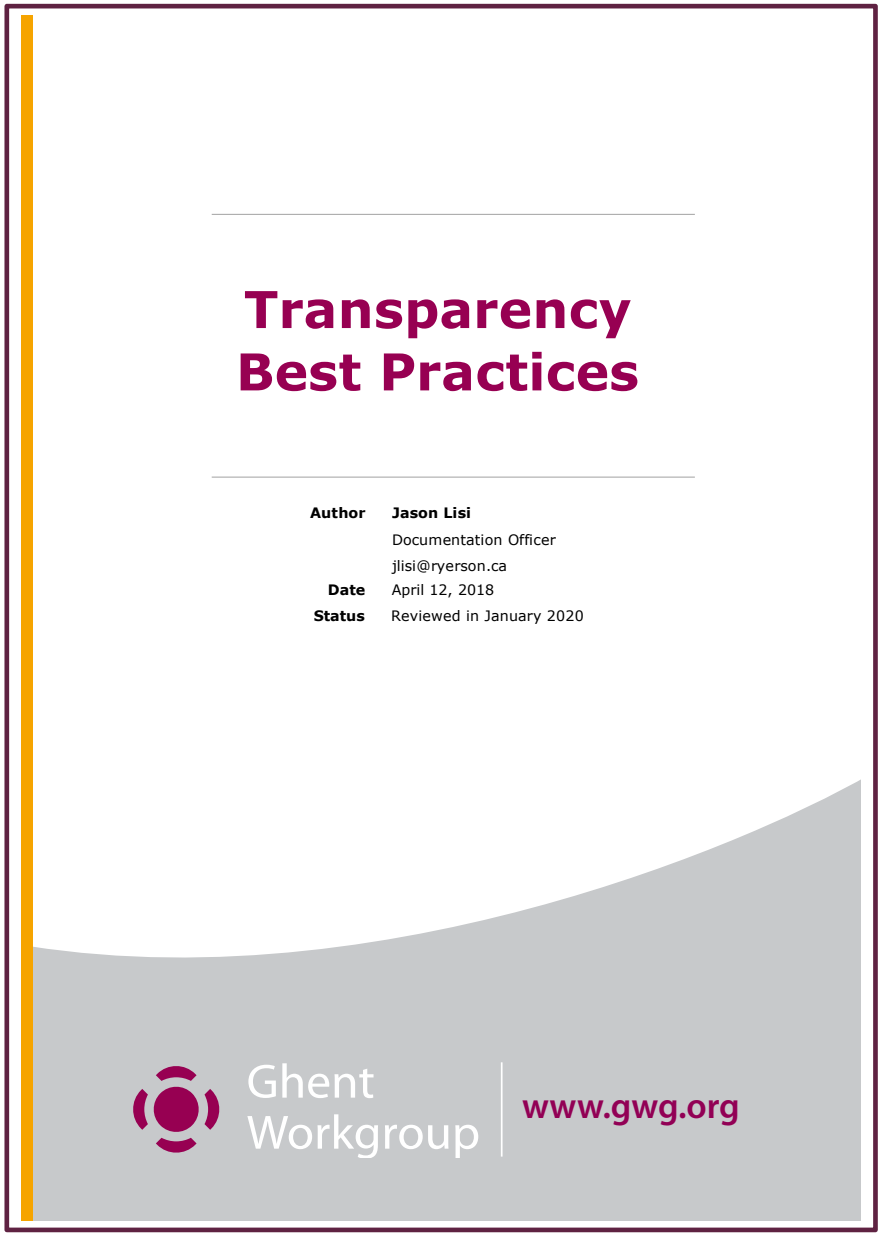
PDF/X Information

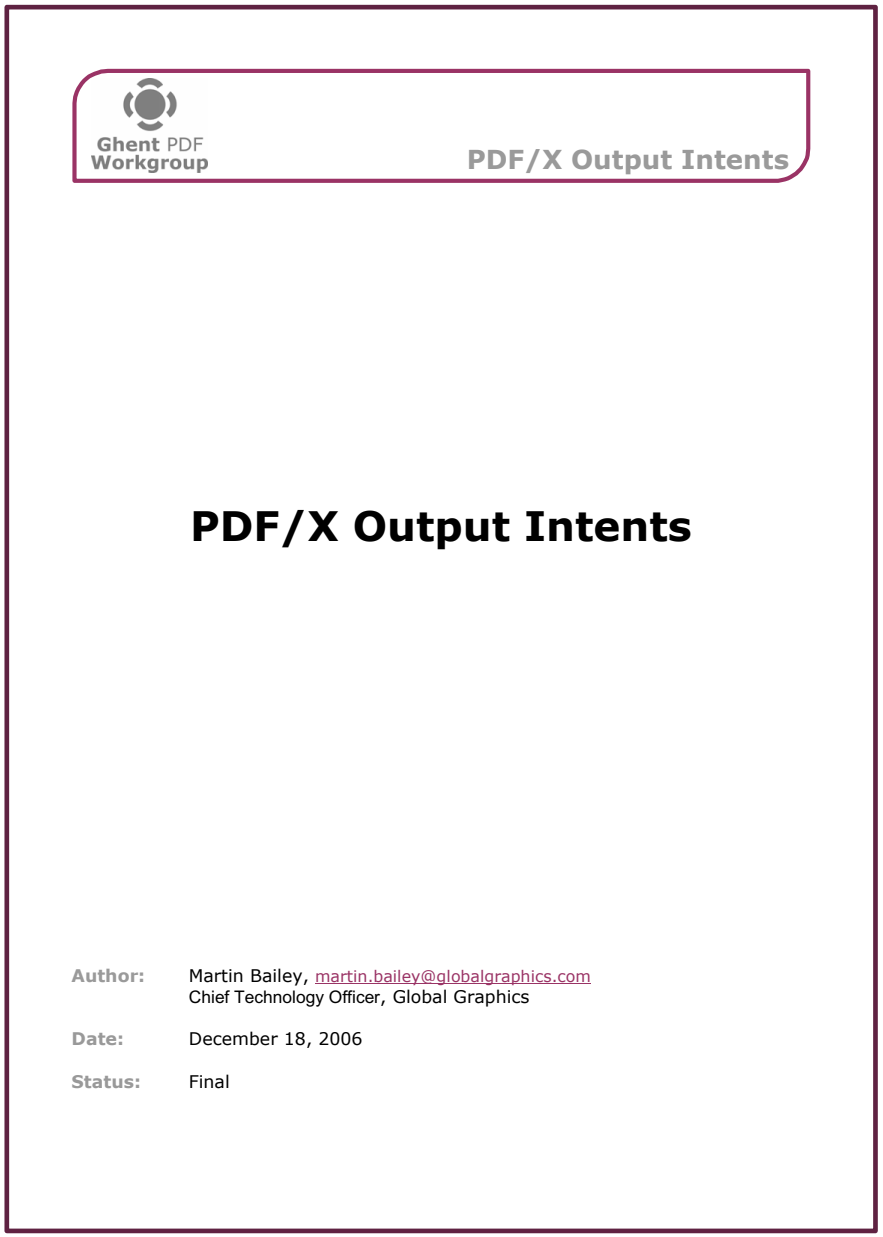
https://www.gwg.org/download/gwg-2015-pdfx-workflow-english/

Transparency Information



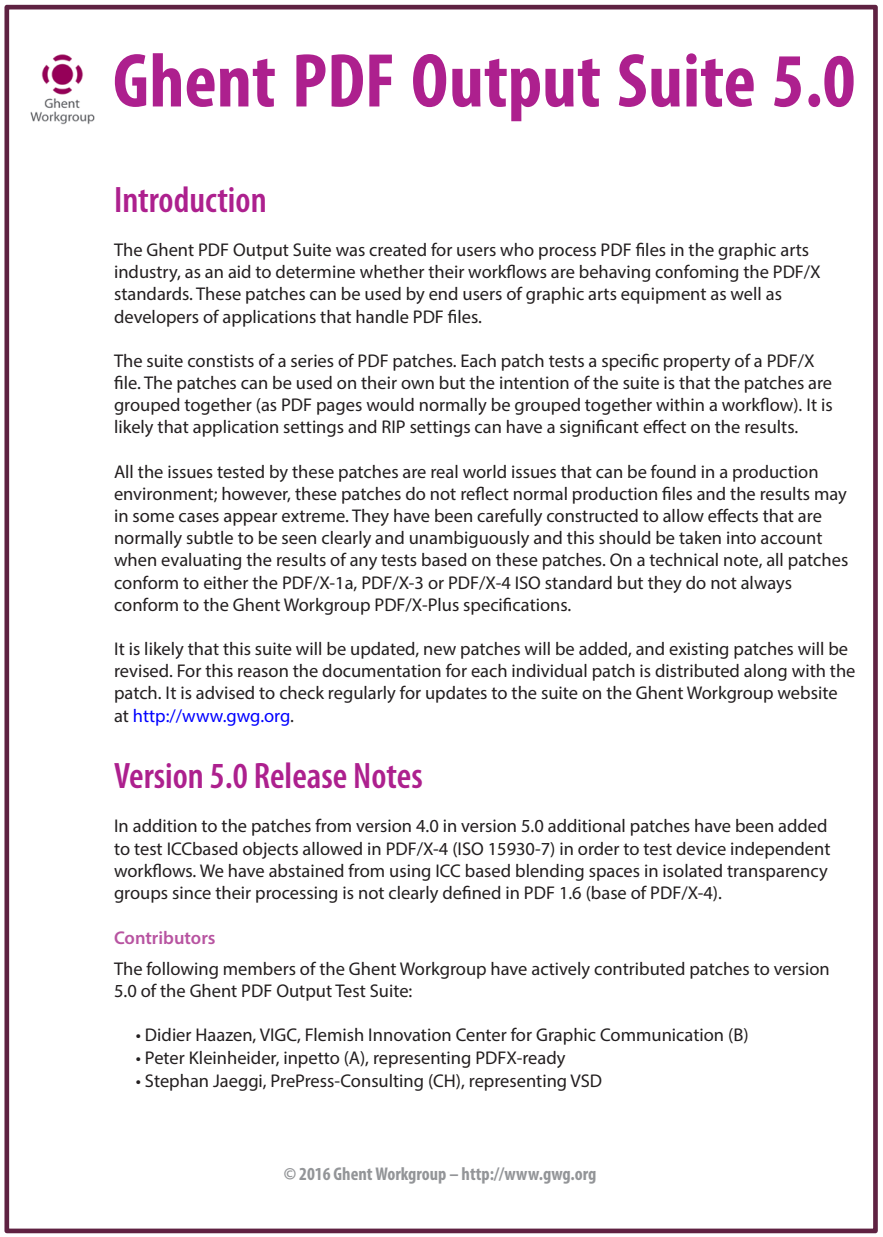
https://www.gwg.org/download/transparency-best-practices/

PDF/X Output Intents Information



https://www.gwg.org/download/pdf-x_output_intents/

Workflow Testing



Ghent Workgroup

Ghent PDF Output Suite 5.0

Introduction

The Ghent PDF Output Suite was created for users who process PDF files in the graphic arts industry, as an aid to determine whether their workflows are behaving confoming the PDF/X standards. These patches can be used by end users of graphic arts equipment as well as developers of applications that handle PDF files.

The suite constists of a series of PDF patches. Each patch tests a specific property of a PDF/X file. The patches can be used on their own but the intention of the suite is that the patches are grouped together (as PDF pages would normally be grouped together within a workflow). It is likely that application settings and RIP settings can have a significant effect on the results.

All the issues tested by these patches are real world issues that can be found in a production environment; however, these patches do not reflect normal production files and the results may in some cases appear extreme. They have been carefully constructed to allow effects that are normally subtle to be seen clearly and unambiguously and this should be taken into account when evaluating the results of any tests based on these patches. On a technical note, all patches conform to either the PDF/X-1a, PDF/X-3 or PDF/X-4 ISO standard but they do not always conform to the Ghent Workgroup PDF/X-Plus specifications.

It is likely that this suite will be updated, new patches will be added, and existing patches will be revised. For this reason the documentation for each individual patch is distributed along with the patch. It is advised to check regularly for updates to the suite on the Ghent Workgroup website at http://www.gwg.org.

Version 5.0 Release Notes

In addition to the patches from version 4.0 in version 5.0 additional patches have been added to test ICCbased objects allowed in PDF/X-4 (ISO 15930-7) in order to test device independent workflows. We have abstained from using ICC based blending spaces in isolated transparency groups since their processing is not clearly defined in PDF 1.6 (base of PDF/X-4).

Contributors

The following members of the Ghent Workgroup have actively contributed patches to version 5.0 of the Ghent PDF Output Test Suite:

- Didier Haazen, VIGC, Flemish Innovation Center for Graphic Communication (B)
- Peter Kleinheider, inpetto (A), representing PDFX-ready
- Stephan Jaeggi, PrePress-Consulting (CH), representing VSD

https://www.gwg.org/workflow-tools-downloads/test-suites/ghent-output-suite/

Questions?

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Thank you!

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