

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 conforming 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 consists 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

Delivery

The patches from the Ghent PDF Output Suite V4.0 are also included in the package. The patches are divided into three groups:

- **CMYK**: test patches using DeviceCMYK color only.
- **SPOT**: test patches using DeviceCMYK and a spot color.
- **ICC-CMS**: test patches using ICCbased colors and testing color management.

CMYK

• GWG 1.0	CMYK Overprint Test	PDF/X-3	old
• GWG 1.1	CMYK Overprint Mode	PDF/X-3	old
• GWG 4.0.1	White Overprint Patch	PDF/X-1a	old
• GWG 5.0	Font Substitution	PDF/X-3	old
• GWG 5.1	Font subset and substitution	PDF/X-1a	old
• GWG 5.2	Font subset and substitution	PDF/X-1a	old
• GWG 6.0	Use of shadings	PDF/X-1a	old
• GWG 6.1	Use of shadings	PDF/X-1a	old
• GWG 9.0	Font Support	PDF/X-3	old
• GWG 9.1	OpenType Font Support	PDF/X-4	old
• GWG 15.0	Optional Content (OCCD) *	PDF/X-4	old
• GWG 15.1	Optional Content (RBGroup) *	PDF/X-4	old
• GWG 15.2	Optional Content (OCMD) *	PDF/X-4	old
• GWG 16.0	Transparency Blend Modes (DeviceCMYK, Non-Knockout)	PDF/X-4	old
• GWG 16.1	Transparency Blend Modes (DeviceCMYK, Knockout)	PDF/X-4	old
• GWG 16.2	Transparency Blend Modes (DeviceCMYK, Isolated)	PDF/X-4	old
• GWG 16.6	Image Softmasks (DeviceCMYK)	PDF/X-4	old
• GWG 16.8	Vector Softmasks (part 1)	PDF/X-4	old
• GWG 16.9	Vector Softmasks (part 2)	PDF/X-4	old
• GWG 16.10	Text Softmasks (part 1)	PDF/X-4	old
• GWG 16.11	Text Softmasks (part 2)	PDF/X-4	old
• GWG 17.0	JPEG2000 compression (DeviceCMYK)	PDF/X-4	old
• GWG 17.3	JBIG2 compression	PDF/X-4	old
• GWG 18.1	16Bit Image (DeviceCMYK)	PDF/X-4	new image
• GWG 19.0	DeviceN Overprint (Black)	PDF/X-1a	old
• GWG 19.1	DeviceN Overprint (Yellow)	PDF/X-1a	old
• GWG 19.2	DeviceN Overprint (White)	PDF/X-1a	old

* The patches for optional content cannot be combined with the other patches for optional content in one PDF file.

SPOT

• GWG 2.0	Spot to CMYK Overprint	PDF/X-1a	updated
• GWG 3.0	Gray Overprint Patch	PDF/X-1a	old
• GWG 3.1	Gray Image Overprint (CMYK over Spot)	PDF/X-1a	old
• GWG 4.1	White Overprint Mode	PDF/X-3	old
• GWG 8.01	DeviceN Support (6 colors)	PDF/X-3	old
• GWG 8.1	DeviceN Support (5 colors)	PDF/X-1a	old
• GWG 8.2	DeviceN Support (4 colors)	PDF/X-3	old
• GWG 12.0	White Overprint/Knockout	PDF/X-1a	old

ICC-CMS

• GWG 13.0	ICC Source Profile	PDF/X-4-ICC	new
• GWG 13.2	ICC based CMYK Overprint	PDF/X-4-ICC	new
• GWG 13.3	ICC based RGB Overprint	PDF/X-4-ICC	new
• GWG 16.1	Transparency Blend Modes (ICCbasedRGB)	PDF/X-4-ICC	new
• GWG 16.4	Transparency Blend Modes (ICCbasedCMYK)	PDF/X-4-ICC	new
• GWG 16.7	Image Softmasks (ICCbasedRGB)	PDF/X-4-ICC	new
• GWG 17.2	JPEG2000 compression (ICCbasedRGB)	PDF/X-4-ICC	new
• GWG 18.0	16bit Image (ICCbasedRGB)	PDF/X-4-ICC	new
• GWG 18.2	16bit Image (ICCbasedGray)	PDF/X-4-ICC	new
• GWG 18.3	16bit Image (DeviceGray)	PDF/X-4	new
• GWG 18.4	16bit Image (ICCbasedCMYK)	PDF/X-4-ICC	new
• GWG 20.5	CMYK Image with ICC V4 profile	PDF/X-4-ICC	new
• GWG 20.6	RGB Image with ICC V4 profile	PDF/X-4-ICC	new
• GWG 22.0	Color Conversion Indicator	PDF/X-4	new
• GWG 22.1	OutputIntent Change Indicator	PDF/X-4-ICC	new
• GWG 23.0	Four different Grays	PDF/X-1a	new

The label **PDF/X-4** indicates that this patch uses PDF/X-4 features. The label **PDF/X-4-ICC** indicates that this patch uses ICC based colors which must be color converted for the output.

Each of the patches is documented in an corresponding **ReadMe** document.

NOTE: The numbering of the patches is not continuous since some numbers are reserved for planned patches for the ICCbased workflow.

Test pages with assembled patches

The file **Ghent_PDF-Output-Test-V50_ALL_X4.pdf** contains six A4 size pages (which can be cropped to Letter size pages) with 48 GWG test patches for easy testing of PDF/X-4 workflows. The test pages are also divided into the three categories: CMYK, SPOT and CMS. The folder of each category also contains the corresponding test pages.

These test pages should be processed like regular PDF/X-4 print jobs (e.g. imposed to a sheet for offset printing, printed as single or double pages in digital printing or placed like ads on a page). The pages contain test patches with essential PDF/X features. Errors are identified either with a cross or by a deviation from the integrated reference images.

The test patches have been assembled with Acrobat Pro and imposed with Callas pdfToolbox 9. This tool places each patch as isolated transparency group on the page. Other tools (e.g. imposition applications or ad layout applications) may do it differently.

The PDF has been verified for PDF/X-4 compliancy in Callas pdfToolbox 9, Enfocus PitStop 13 and Acrobat DC. The result of this preflight check is embedded as Preflight Audit Trail (a GWG standard!) into the PDF. The Preflight Audit Trail can be displayed in Adobe Acrobat/Reader 9 and higher with the menu [View > Navigations Panels > Standards](#). After embedding the Preflight Audit Trail the PDF has automatically been signed with a preflight signature. (In order to validate the preflight signature, the signature certificate must be added to the Trusted Identities via the signature properties in the signature panel of Acrobat). In case of an (unwanted) change of the PDF this signature becomes invalid. You can then go back to the original version in the signature panel. The preflight signature has no restrictions and does not prevent processing the PDF in a prepress workflow system!

NOTE: Although all patches are PDF/X-4 compliant, most of the patches are not compliant with the Ghent PDF Specifications. The reason is that for most patches special properties of the objects (e.g. overprinting) had to be used in order to clearly visualize a failure of the patch.

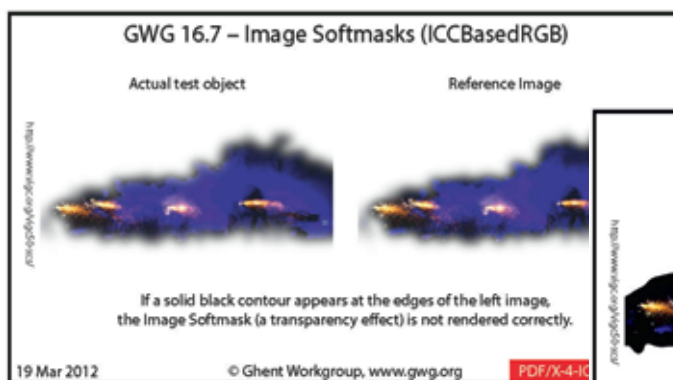
Evaluation of the results

We have tried hard to make the evaluation of the test results as easy and unambiguous as possible. (Hint: you will not need a loupe to evaluate the results.)

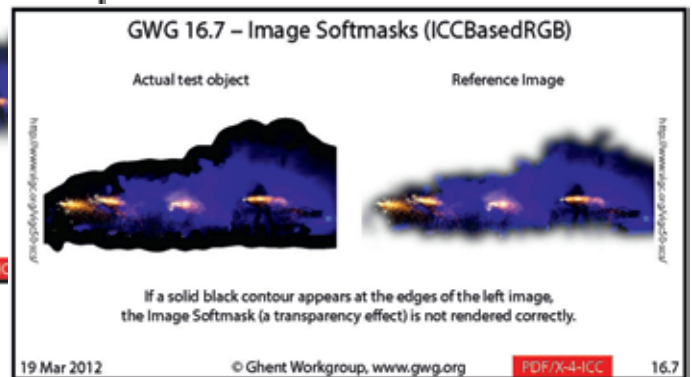
Two different methods are used to indicate errors:

Reference images

Where it is not possible to indicate errors with a cross, reference images are used to show the correct result:



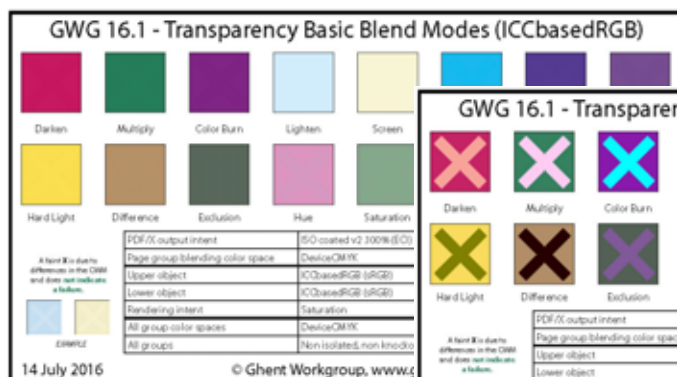
Correct rendering of the patch: the test passed. The Soft Mask looks the same as the reference image.



Incorrect rendering of the patch: the test failed. A clear black stroked fill is visible at the edge of the image instead of a smoothly softened edge.

Graphic indicators like cross or check mark

If possible errors are indicated with a clearly visible cross:



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

Notice

The most important design goal for these patches is the ability to identify an error clearly. The rule of thumb is to examine the patches with a viewing distance of 0.5 m / 20 inches. If you see a **clear X** then there is a **failure**. For some patches a **faint X** may appear due to rounding of values or different color management engines being used. This is **not a failure** of the tested features:



A **clear X** indicates a **failure** of this feature.

A **faint X** is **NOT a failure** of this feature.

If errors occur then the settings of the PDF output workflow might be wrong. Unfortunately still not all PDF workflow systems ship with PDF/X compliant settings. Many workflows are still changing the overprinting definitions of a PDF file. This is not allowed in a PDF/X workflow because the result the creator (customer) has seen (and accepted) in Adobe Acrobat/Reader or on a proof will be different from the final printed product if such changes are applied in a late stage. Therefore it's also highly recommended to output the Ghent PDF Output Suite test pages on a proofing device to make sure that the proof will represent the final printed matter.

Documentation

All new patches feature a caption with a short description of the objects and an explanation how a failure can be identified. In addition a ReadMe document with more detailed information is available for each (group of) patch(es).

Free download

The Ghent PDF Output Suite can be downloaded for free at <http://www.gwg.org/workflow-tools/test-suites/ghent-output-suite/>. Please check regularly for updates.

Feedback and questions

Please send your feedback and questions to info@gwg.org.

The fine print

Disclaimer

The patches of the Ghent PDF Output Suite contain only tests for basic PDF/X-4 features. By combining such features in complicated layouts new situations (e.g. nested transparency groups) can occur which are out of scope of these simple test patches.

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Patch 6.0 & 6.1 — Shadings

Intent

These patches are designed to test the usage of shadings within workflows. These patches use CMYK only.

Testing guidelines

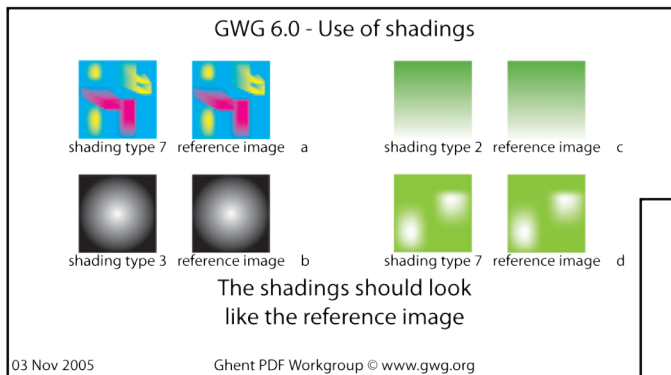
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

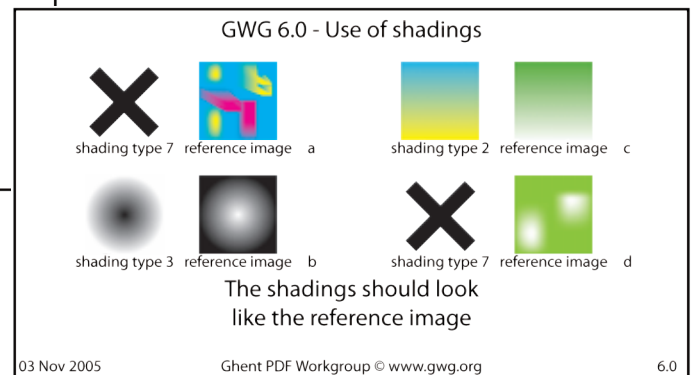
Method of evaluation

Method 2

A visual comparison to a reference within the patch



Correct rendering of the patch: all tests passed. All tests look the same as the reference image.



Incorrect rendering of the patch all tests have failed. In tests a and d the shadings did not render at all. In tests b and c, the shadings rendered differently than the reference images.

Description of tests

These patches are designed to test whether or not your RIP/workflow supports shadings and can reproduce them properly. The patches only contain shadings created with widely-used applications. None of the shadings have been produced artificially i.e. developed in PostScript.

In each patch you will find four different shadings. Each shading mentions the shading type and has an image representation next to it. You can compare the shading with the image to determine how well your workflow supports shadings. When doing this, please keep in mind that the image is a screenshot of the shading which will mean that the colors and gradation can be slightly off.

If your workflow does not support shadings at all, the shading will be missing and you will see an 'x' instead of the shading.

Notes

Patch 6.0 uses advanced shading types while patch 6.1 is more basic. All graphic arts equipment should be able to handle these patches without any issues.

Patch contributors

Andy DenTandt
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Eli Cloots
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Belgium

Patches creation date

03 Nov 2005

Patch 1.1 — CMYK Overprint Mode

Intent

This patch is designed to identify clearly how applications and workflows handle Overprint Mode.

Testing guidelines

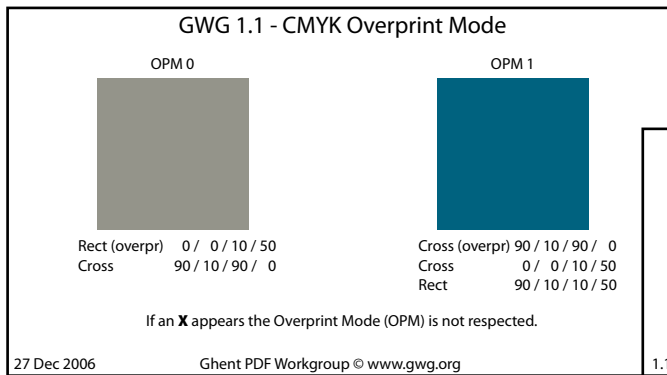
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

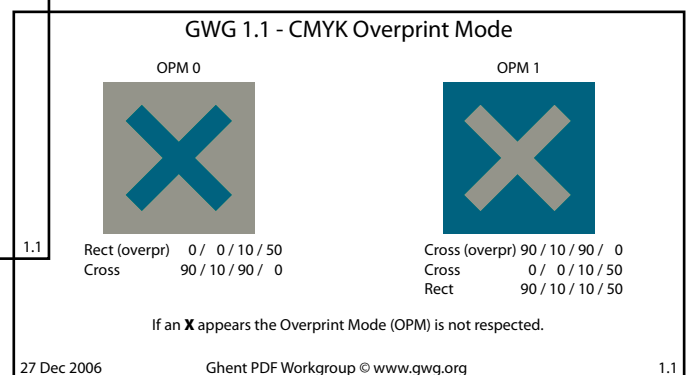
Method of evaluation

Method 1

A clear **X** indicates the improper handling of a file.



Correct rendering of the patch, all tests passed. No clear **X** is showing.



Incorrect rendering of the patch, all tests have failed. Each **X** indicates an incorrectly rendered test. (Usually you will get only one **X** if an error occurs.)

Description of results

The Overprint Mode specifies if a CMYK channel with 0% does overprint an other CMYK color underneath (OPM = 1) or does knock out (OPM = 0) . If an **X** appears the settings has been changed by the workflow or was not respected by the RIP.

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
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Patch creation date

27 December 2006

Patch 1.0 — CMYK Overprint

Intent

This patch is designed to highlight certain problems that can arise when rendering CMYK objects that are set to overprint other CMYK objects. This patch uses CMYK only.

Testing guidelines

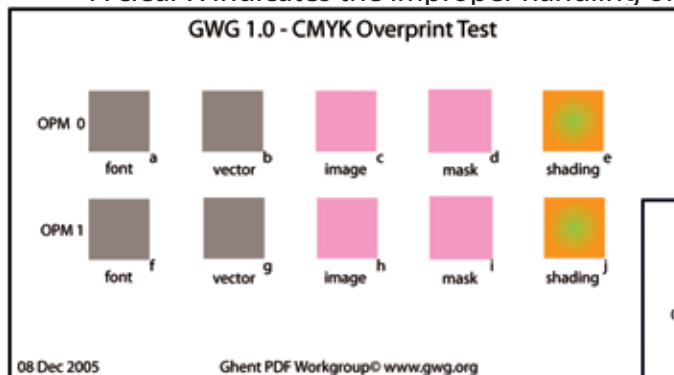
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

Description of tests

OP Mode 0

- a) A test using a Magenta text object defined as a single channel Magenta and is overprinting a CMYK object of 50C,0M,50Y,0K using op mode 0. If an X shows, it means that overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- b) A test using a Magenta vector object defined as a single channel Magenta and is overprinting a CMYK object of 50C,0M,50Y,0K using op mode 0. If an X shows, it means that overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- c) A test using a CMYK image of 50% Magenta set to overprint CMYK object shaped as an X of color 50C,0M,50Y,0K with op mode 0. Images or image masks in CMYK should never overprint CMYK objects. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- d) A test using a CMYK image Mask of 50% Magenta set to overprint CMYK object shaped as an X of color 50C,0M,50Y,0K with op mode 0. Images or image masks in CMYK should never overprint CMYK objects. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- e) A test using a DeviceN duotone gradient including Cyan and Magenta set to overprint a solid yellow object in overprint mode 0. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.

OP Mode 1

- f) A test using a Magenta text object defined as a single channel Magenta and is overprinting a CMYK object of 50C,0M,50Y,0K using op mode 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- g) A test using a Magenta vector object defined as a single channel Magenta and is overprinting a CMYK object of 50C,0M,50Y,0K using op mode 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.

- h) A test using a CMYK image of 50% Magenta set to overprint CMYK object shaped as an X of color 50C,0M,50Y,0K with op mode 0. Images or image masks in CMYK should never overprint CMYK objects. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- i) A test using a CMYK image Mask of 50% Magenta set to overprint CMYK object shaped as an X of color 50C,0M,50Y,0K with op mode 0. Images or image masks in CMYK should never overprint CMYK objects. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- j) A test using a DeviceN duotone gradient including Cyan and Magenta set to overprint a solid yellow object in overprint mode 1. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues. It is, however, possible that the amalgamation of this patch with other patches may very well lead to problems. For example, the amalgamation of this patch with patch 11 (default color space) using a layout application could very well point out some problems with the layout application that would otherwise go unnoticed.

Patch contributors

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Patch creation date

07 Nov 2005

Patch 19.0 – DeviceN Overprint with Black

Intent

This patch is designed to identify clearly how applications and workflows handle overprinting for objects defined using DeviceN colour definitions.

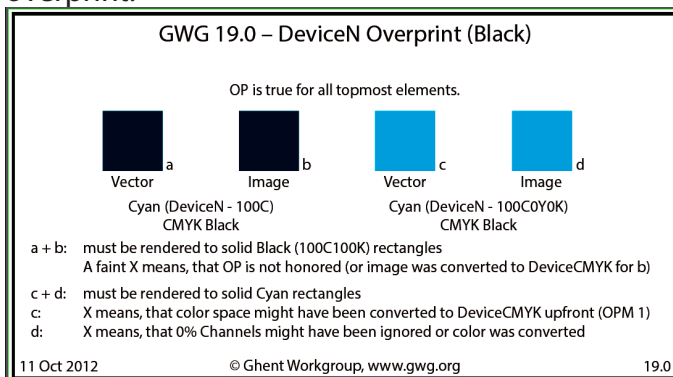
Testing guidelines

Test patches may be used in two ways:

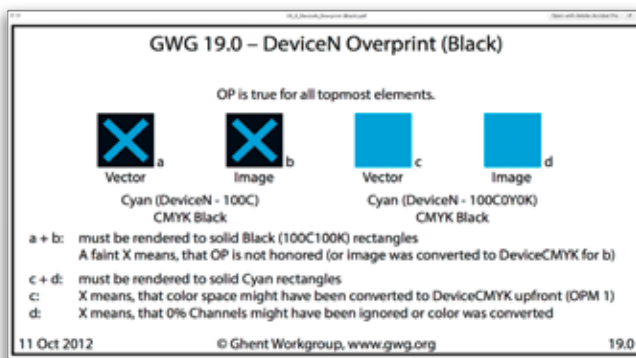
- A single patch may be used to test the support for DeviceN and overprinting in the workflow
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine

Method of evaluation

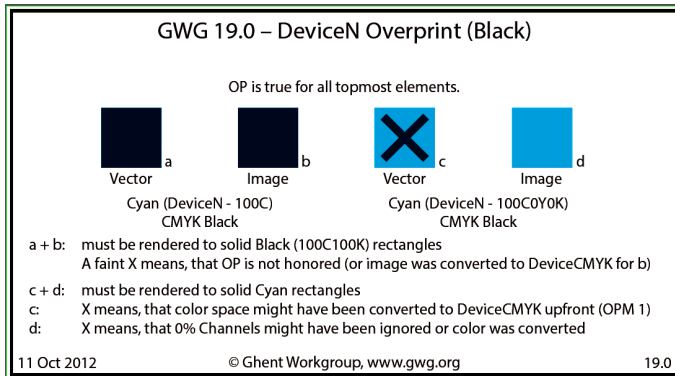
Two black and two cyan squares indicate correct rendering of DeviceN with overprint.



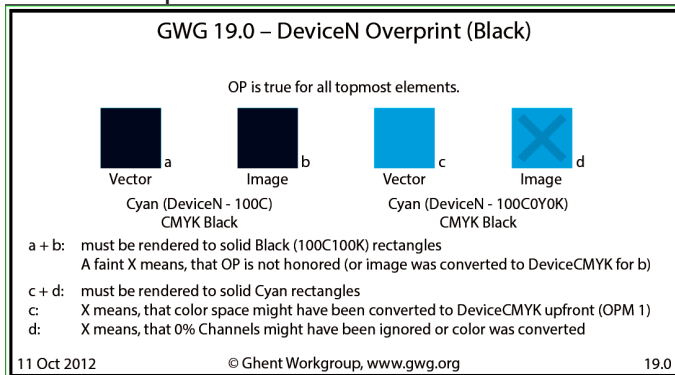
Blue crosses on the left side indicate that DeviceN overprint is not supported or the overprint attribute is not honored.



A cross in patch c indicates a colour conversion of the patch to DeviceCMYK prior to rendering. The cross appears since OPM is set to 1. However, if the system performs colour conversion and sets the OPM for this patch c to 0, the rendering is also fine.



A faint cross in patch d indicates a colour conversion of the patch using inadequate ICC profiles or method. In this example, the image of patch d is converted from DeviceN (CMYK) to DeviceCMYK with different source and destination profiles.



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Patch 19.1 – DeviceN Overprint with Yellow

Intent

This patch is designed to identify clearly how applications and workflows handle overprinting for objects defined using DeviceN colour definitions.

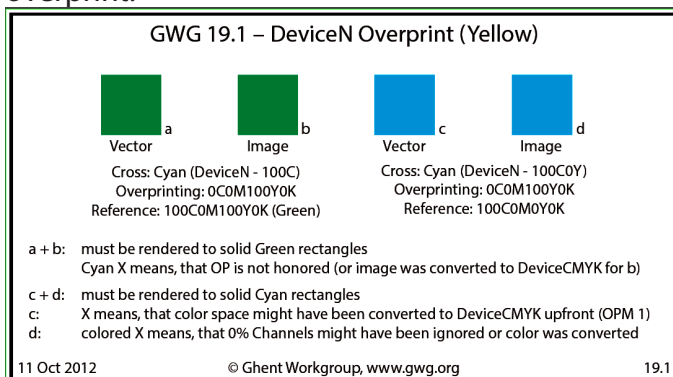
Testing guidelines

Test patches may be used in two ways:

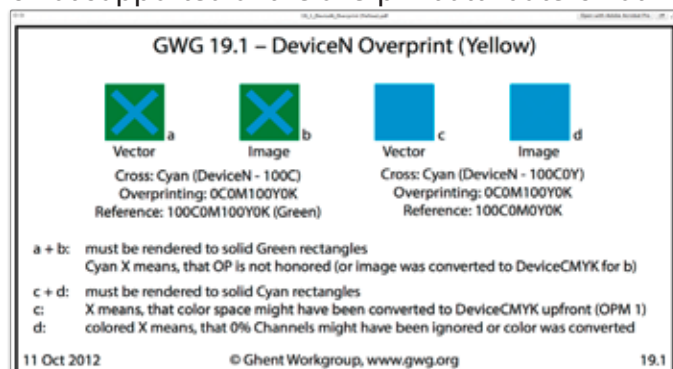
- A single patch may be used to test the support for DeviceN and overprinting in the workflow
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine

Method of evaluation

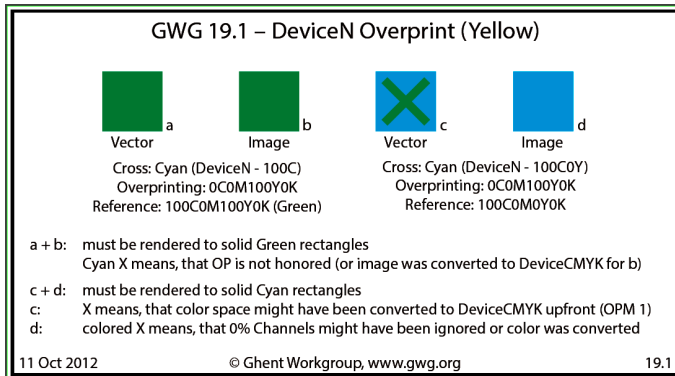
Two green and two cyan squares indicate correct rendering of DeviceN with overprint.



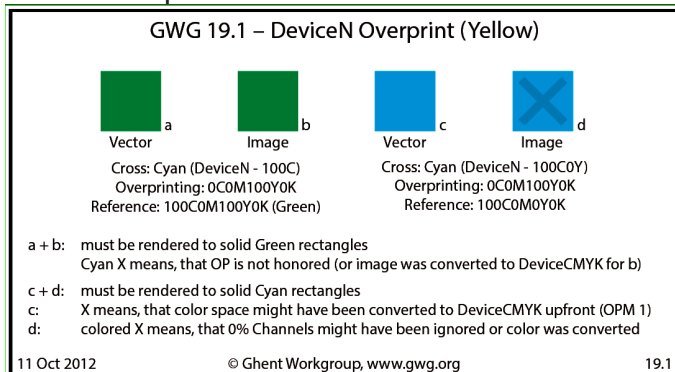
Blue crosses on the left side indicate that DeviceN overprint is not supported or the overprint attribute is not honored.



A cross in patch c indicates a colour conversion of the patch to DeviceCMYK prior to rendering. The cross appears since OPM is set to 1. However, if the system performs colour conversion and sets the OPM for this patch c to 0, the rendering is also fine.



A faint cross in patch d indicates a former colour conversion of the patch using inadequate ICC profiles or method. In this example, the image of patch d is converted from DeviceN (CMYK) to DeviceCMYK with different source and destination profiles.



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Patch 19.2 – DeviceN Overprint with White

Intent

This patch is designed to identify clearly how applications and workflows handle overprinting for objects defined using DeviceN colour definitions.

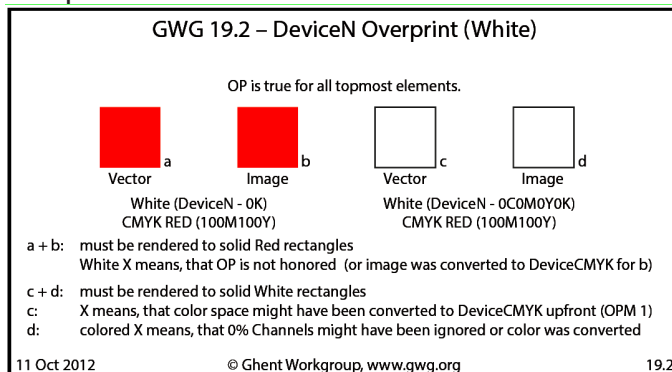
Testing guidelines

Test patches may be used in two ways:

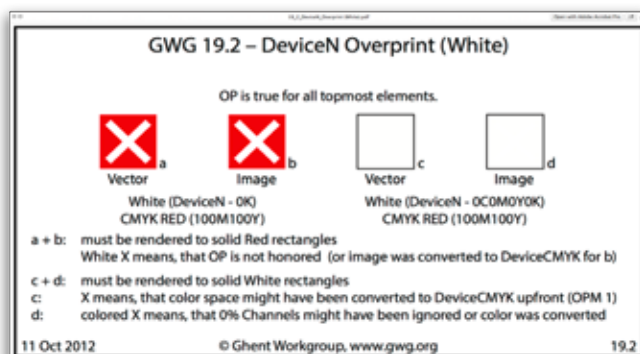
- A single patch may be used to test the support for DeviceN and overprinting in the workflow
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine

Method of evaluation

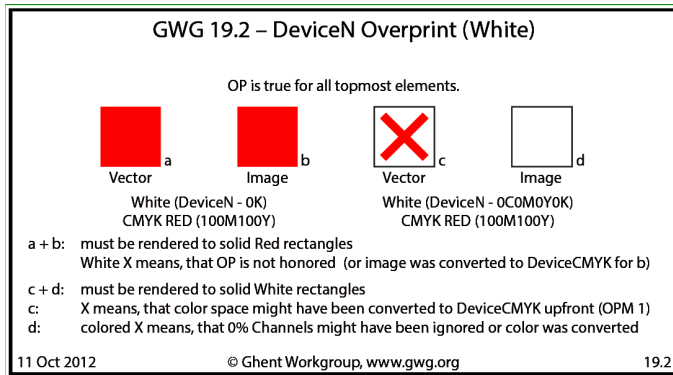
Two red and two white squares indicate correct rendering of DeviceN with overprint.



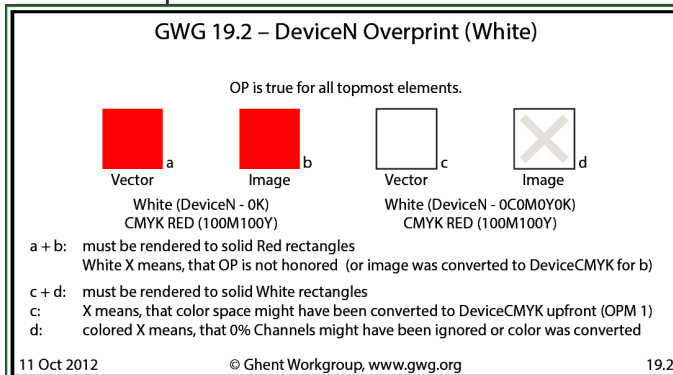
White crosses on the left side indicate that DeviceN overprint is not supported, the overprint attribute is not honored or white overprint is set to knockout.



A cross in patch c indicates a colour conversion of the patch to DeviceCMYK prior to rendering. The cross appears since OPM is set to 1. However, if the system performs colour conversion and sets the OPM for this patch c to 0, the rendering is also fine.



A faint cross in patch d indicates a colour conversion of the patch using inadequate ICC profiles or method. In this example, the image of patch d is converted from DeviceN (CMYK) to DeviceCMYK with different source and destination profiles.



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Patch contributors

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Patch 8.2 — DeviceN Support (4 colors)

Intent

This patch is designed to identify clearly how applications and workflows handle DeviceN. This patch uses only process color.

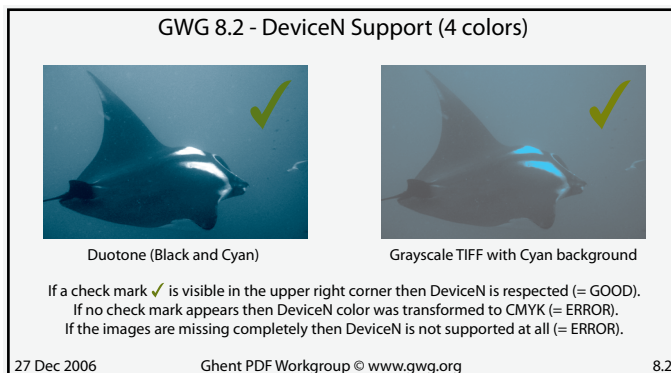
Testing guidelines

Test patches may be used in two ways:

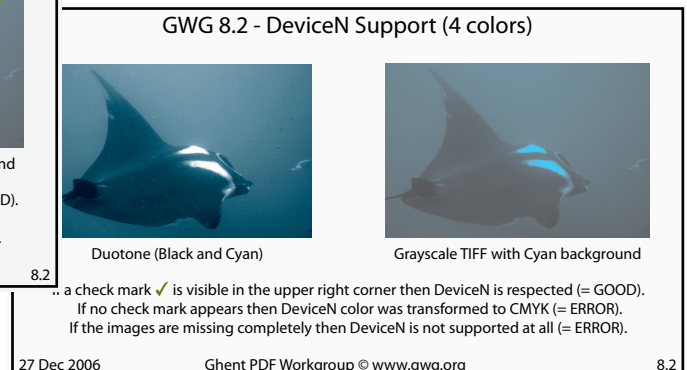
- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

If the images are rendered as DeviceN color then greenish check marks are visible in the upper right corner of both images (reason: DeviceN can overprint CMYK). The check marks disappear if the DeviceN colors of the images are converted to CMYK since CMYK doesn't overprint in this case (OPM = 0). If an output workflow doesn't support DeviceN at all then the pictures will either be missing in the output or you will receive an error message and the entire job cannot be processed. (Note: there are no **X** in this patch.)



GOOD: both check marks are visible.



ERROR: no check marks are visible.

Notes

This is a basic patch and all graphic arts equipment which are PostScript Level-3 compatible should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
PrePress-Consulting,
Switzerland
sjaeggi@prepress.ch

Patch creation date

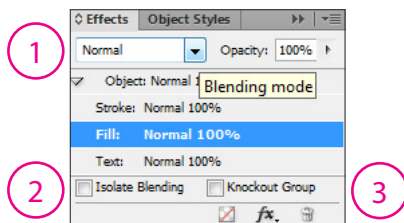
27 December 2006

Patch 16.0 - 16.2 – Transparency Basic Blend Modes

Intent

The intent of the patch is to check for correct rendering of Transparency Basic Blend Modes (Multiply, Screen, Overlay, etc.):

- 16.0: without applying 'Knockout' or 'Isolate' (see "1")
- 16.1: with the use of the 'knockout' effect (see "2")
- 16.2: with the use of the 'Isolate' effect (see "3")



Testing guidelines

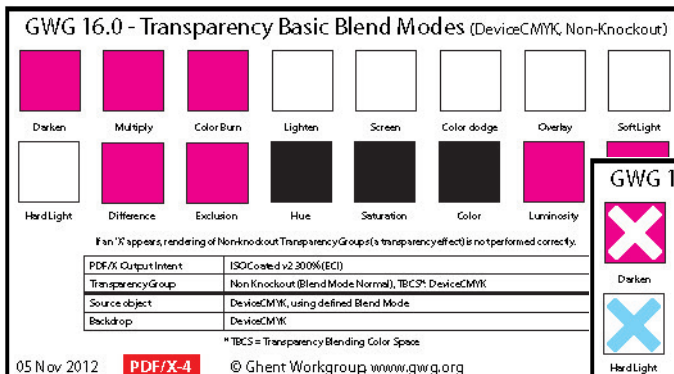
This patch can be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

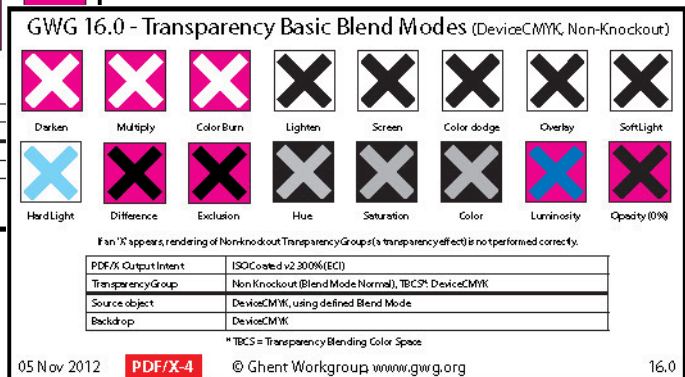
Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, all tests passed.
No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

NOTE:

- It is possible that a faint 'X' may appear, e.g. in case of 16.2 or 16.3. A 100% correct rendering does expect a 100% 'X' free output though.
- Only the fill colour of a patch element should be evaluated. Because of anti aliasing, it is possible to see a very thin stroke line at the edges of an 'X'. This does per definition not indicate a problem. A distinguished coloured fill colour does though.

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Patch 16.6, 16.8, 16.9, 16.10, 16.11– Soft Masks

Intent

The intent of the patch is to check for correct rendering of different types of Soft Masks:

- 16.6: Image Soft Masks, a popular visual transparency effect to soften edges and that can be very easily created in e.g. Adobe Photoshop using a Layer Mask (and transparent gradient or feather effect).
- 16.8 (part 1), 16.9 (part 2): Vector Soft Masks, a popular transparency effect that can be created very easily in e.g. Adobe InDesign using 'Object > Effects'. Examples of vector Soft Masks are: Drop Shadows, Outer Glow, Inner Glow, etc.
- 16.10 (part 1), 16.11 (part 2): Similar kind of effects as in 16.8 and 16.9, but this time applied to Text Objects instead of Vector Objects.

Testing guidelines

This patch can be used in two ways:

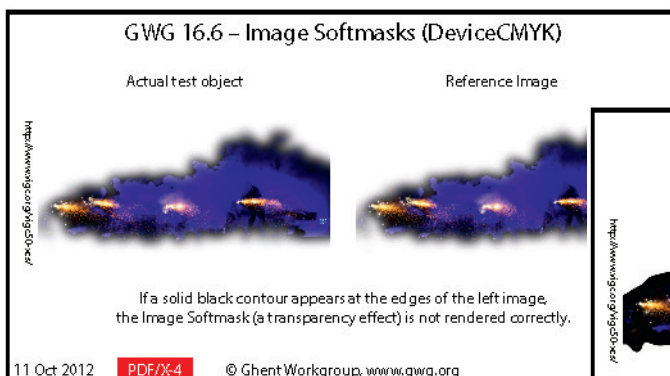
- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

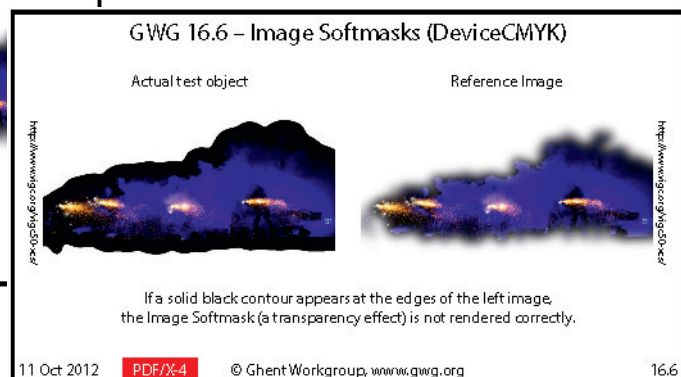
Method 2

A visual comparison to a reference within the patch

Example 1

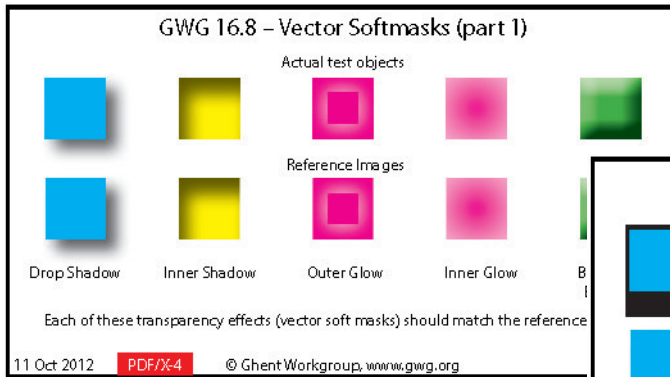


Correct rendering of the patch: the test passed. The Soft Mask looks the same as the reference image.

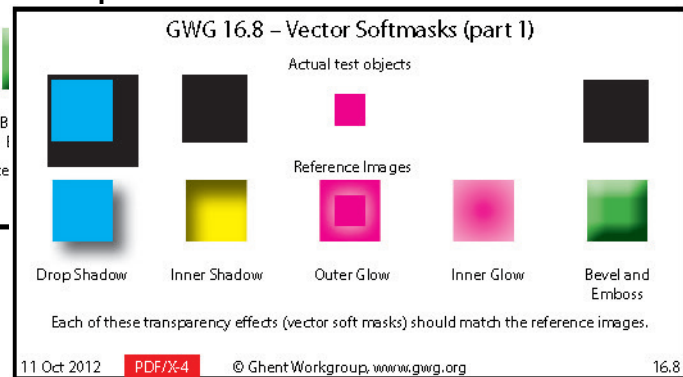


Incorrect rendering of the patch: the test failed. A clear black stroked fill is visible at the edge of the image instead of a smoothly softened edge.

Example 2



Correct rendering of the patch: all tests passed. All tests look the same as the reference image.



Incorrect rendering of the patch: all tests have failed. In the first two and the last case the Vector Soft Masks have turned opaque (black). In the third and fourth case the Vector Soft Masks seem to be visually disappeared (white).

NOTE:

- Disappearance of the Image or Vector Soft Masks is one way of how the incorrect rendering can occur. A clearly different colour rendering can also be seen as a way of how the patch should not be rendered.
- In some cases all patch elements will be rendered wrong. There are occasions where only just one or two patches are rendered differently. Caution may need to be taken while evaluating the rendered result.

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Patch 9.0 — Font Support

Intent

This patch is designed to highlight certain problems that can arise with the handling of different types of fonts.

Testing guidelines

Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 2

A visual comparison to a reference within the patch.

GWG 9.0 - Font Support	
Type1 PostScript:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (NewCenturySchlbk Italic)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (NewCenturySchlbk Italic)</i>
TrueType:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (BookAntiqua-BoldItalic)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (BookAntiqua-BoldItalic)</i>
CID (Type1):	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (WarnockPro-BoldIt)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (WarnockPro-BoldIt)</i>
CID (TrueType):	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (PalatinoLinotype BoldIta)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (PalatinoLinotype BoldIta)</i>
Multiple Master:	<i>dit is een multiple master ex jante mun dit is een multiple master ex jante mun (ExPonto)</i>
Expected result:	<i>dit is een multiple master ex jante mun dit is een multiple master ex jante mun (ExPonto)</i>
Type 3 Vector:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (T1 / Garamond B)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (T1 / Garamond B)</i>
Type 3 Bitmap:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)</i>
Expected result:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)</i>
03 Nov 2005 Ghent PDF Workgroup © www.gwg.org	

Correct rendering of the patch: all tests passed. All fonts have rendered as per the examples within the file.

GWG 9.0 - Font Support	
Type1 PostScript:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (NewCenturySchlbk Italic)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (NewCenturySchlbk Italic)</i>
TrueType:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (BookAntiqua-BoldItalic)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (BookAntiqua-BoldItalic)</i>
CID (Type1):	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (WarnockPro-BoldIt)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (WarnockPro-BoldIt)</i>
CID (TrueType):	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (PalatinoLinotype BoldIta)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (PalatinoLinotype BoldIta)</i>
Multiple Master:	<i>dit is een multiple master ex jante mun dit is een multiple master ex jante mun (ExPontoMM)</i>
Expected result:	<i>dit is een multiple master ex jante mun dit is een multiple master ex jante mun (ExPontoMM)</i>
Type 3 Vector:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (T1 / Garamond Bold)</i>
Expected result:	<i>äöüÄÖÜäääfißl©®@DCEÆOæfyÿ%~p'½ð (T1 / Garamond Bold)</i>
Type 3 Bitmap:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)</i>
Expected result:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf (T10)</i>
03 Nov 2005 Ghent PDF Workgroup © www.gwg.org 9.0	

Incorrect rendering of the patch: the tests for TrueType, CID (TrueType) and Type 3 vector have all been mishandled in the rendering as they do not match the expected result shown.

GWG 9.0 - Font Support

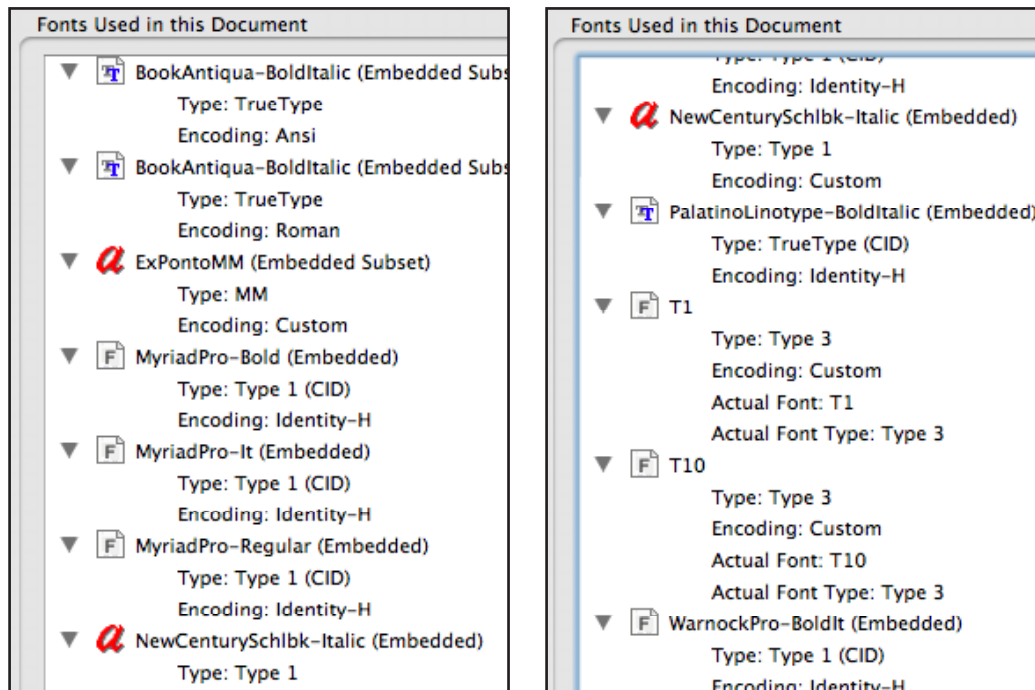
Type1 PostScript:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(NewCenturySchlbk Italic)
Expected result:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(NewCenturySchlbk Italic)
TrueType:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(BookAntiqua-BoldItalic)
Expected result:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(BookAntiqua-BoldItalic)
CID (Type1):	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(WarnockPro-BoldIt)
Expected result:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(WarnockPro-BoldIt)
CID (TrueType):	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(PalatinoLinotype BoldItalic)
Expected result:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð</i>	(PalatinoLinotype BoldItalic)
Multiple Master:	<i>dit is een multiple master ex ponto mm dit is een multiple master ex ponto mm</i>	(ExPontoMM)
Expected result:	<i>dit is een multiple master ex ponto mm dit is een multiple master ex ponto mm</i>	(ExPontoMM)
Type 3 Vector:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð\$£ABCD...XYZ</i>	(T1 / Garamond Bold)
Expected result:	<i>äöüÄÖÜáâàâfifl©®@ÐĖĖØæfÿ†%øþ½ð\$£ABCD...XYZ</i>	(T1 / Garamond Bold)
Type 3 Bitmap:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf</i>	(T10)
Expected result:	<i>null fällt ein negativer Zahlungsstrom an. In den Jahren eins bis fünf</i>	(T10)
03 Nov 2005 Ghent PDF Workgroup © www.gwg.org 9.0		

The first line contains the text using the font.

The second line contains a bitmap representation of the expected result.

If the first line does not look similar than the second line something went wrong with the embedded fonts.

These fonts are embedded in the patch:



Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues. It is possible that the amalgamation of this patch with other patches may very well lead to problems.

Patch contributors

Stephan Jaeggi
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Patch creation date

03 Nov 2005

Patch 9.1 – OpenType Font Support



Intent

This patch allows to check if embedded OpenType fonts (new in PDF/X-4) are processed and output correctly. The patch contains OpenType Type 1 (above) and OpenType TrueType (below) variants.

NOTE: Patch 9.0 allows testing for all other font formats already allowed in PDF/X-1a.

Testing guidelines

This patch can be used on it's own and amalgated with other patches on a larger patch. There are no compatibility issues with other patches.

Method of evaluation

For each of the two fonts a line of text is placed on the patch. Below a reference image shows the correct rendering. If the line of text above is different from the reference image below then there is a problem...

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Patch 5.1 and 5.2 — Font Substitution

Intent

These patches are designed to highlight the substitution of characters within a document that has more than one incident of a font imported within it. This patch uses CMYK only.

Testing guidelines

Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will amalgamate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 2

A visual comparison to a reference within the patch.

GWG 5.1 - Font subset and substitution		
	Placed EPS-file n°1 (VVLNIX+Myriad-Roman)	Placed EPS-file n°2 (VVLNIX+Myriad-Roman)
subsetted font	12345	45678
expected result	12345	45678
- If all characters are correct and appear in the right order, the subset fonts have been process correctly. - If some characters do not appear or display in the wrong order, incorrect handling of subset fonts has occurred.		
15 Dec 2006 Ghent PDF Workgroup © www.gwg.org		

Correct rendering of the patch, all tests passed. All fonts have rendered as per the examples within the file.

GWG 5.1 - Font subset and substitution		
	Placed EPS-file n°1 (VVLNIX+Myriad-Roman)	Placed EPS-file n°2 (VVLNIX+Myriad-Roman)
subsetted font	12345	12678
expected result	12345	45678
- If all characters are correct and appear in the right order, the subset fonts have been processed correctly. - If some characters do not appear or display in the wrong order, incorrect handling of subset fonts has occurred.		
15 Dec 2006 Ghent PDF Workgroup © www.gwg.org 5.1		

Incorrect rendering of the patch, the glyphs 4 and 5 have been substituted with the glyphs of 1 and 2 on the right hand side.

Description of tests

Patches 5.1 and 5.2 have been created to clearly show when a PDF handling application has difficulty processing multiple instances of a font within the same PDF document. Both fonts have glyphs which are present in both font subsets but occupy different locations in the font tables. This scenario can be the result of applications which amalgamate multiple documents with different font subsets and exports one resulting PDF document.

If the PDF files are not handled correctly the likely outcome could be either; glyphs being substituted with the wrong glyphs; or blank spaces appearing where there are conflicts.

For detailed information on the contents of these patches please refer to the documents called **051_Font_report.pdf** and **052_Font_report.pdf**. Both these detailed reports have been created using PDFlib FontReporter

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues. It is possible that the amalgamation of this patch with other files may very well lead to problems. For example, the amalgamation of this patch with subject matter which contains other instances of a font named Myriad Roman could cause problems that would otherwise go unnoticed.

Patch contributors

Didier Haazen
Flemish Innovation Center for Graphic Communication (VIGC)
Belgium
<http://www.vigc.org/>

Patch creation date

15 Dec 2006

Patch 5.0 — Font Substitution

Intent

This patch is designed to highlight the substitution of a font within a workflow.
This patch uses CMYK only.

Testing guidelines

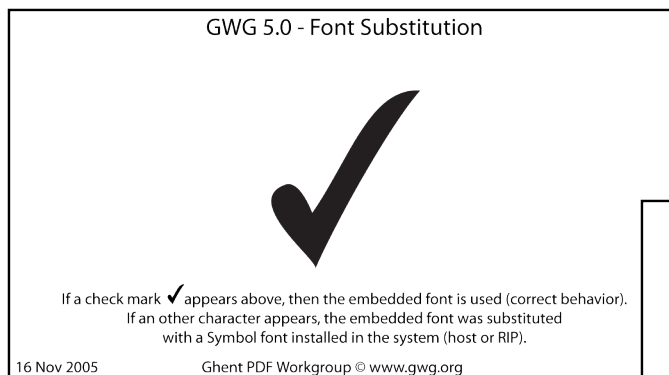
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

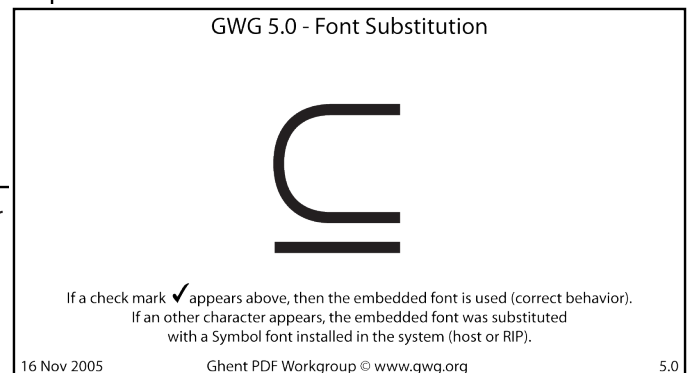
Method of evaluation

Method 2

A visual comparison to a reference within the patch.



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, Depending on what kind of Symbol font is installed in your system, another character may appear. Anything other than ✓ is wrong.

Description of tests

The purpose of this patch is to test whether the embedded fonts are really used in the output of the PDF or if the font has been substituted by the fonts installed on the system (computer, workflow system, RIP).

All the characters of the Symbol font have been exchanged with a check mark. This manipulated font has been embedded in the PDF file and used to produce the main check mark within the patch from what would normally be another character within the Symbol font. The expected behavior would be for the embedded (manipulated) font to be maintained throughout the handling of the PDF file and the glyph to remain as a check mark.

If the check mark appears in the output, the embedded (manipulated) font was used and is the correct and anticipated behavior.

If any other character appears, then the embedded Symbol (manipulated) font has been substituted by a version of Symbol installed on the host computer, the workflow system or the RIP. This is incorrect behavior.

This patch can also adversely affect the content within other files if it is amalgamated with a file that uses another version of the Symbol font. It is possible that in the amalgamation, the manipulated Symbol font gets used not only in the patch, but also in the file with which it is being amalgamated; therefore all the characters would be substituted with a check mark. This would be incorrect behavior.

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues. It is possible that the amalgamation of this patch with other files may very well lead to problems. For example, the amalgamation of this patch with subject matter which contains a different version of a font named Symbol could cause problems that would otherwise go unnoticed.

Patch contributors

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Dov Isaacs
Adobe Systems Incorporated,
United States
<http://www.adobe.com>

Patch creation date

16 Nov 2005

Patch 18, all sub versions – 16Bit Images in various color spaces

Intent

These patches are designed to identify clearly how applications and workflows handle images with 16Bit per channel defined in Device and ICC based color spaces.

Testing guidelines

Test patches may be used in two ways:

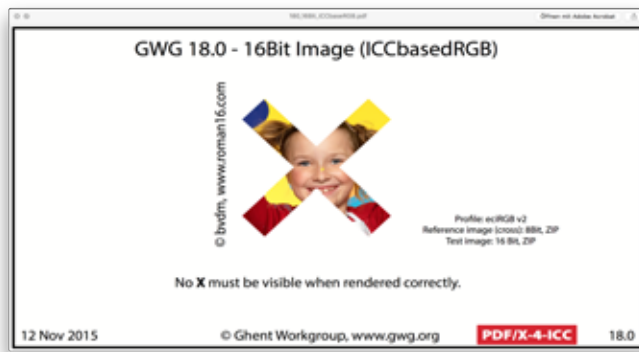
- A single patch may be used to test the support for 16Bit in the workflow
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

A complete rectangular image visualizing a person indicates that the system is supporting 16Bit images defined in the color space stated in the headline.



If the image renders in the shape of a cross, then such an 16Bit image using the stated color space is not handled properly on the output system. Such a PDF renderer is not to be considered as PDF/X-4 savvy.



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Patch 17.0, 17.3 – Image Compression

Intent

The intent of the patch is to check for correct rendering of 'new' compression techniques:

- 17.0: JPEG2000 compression (DeviceCMYK)
- 17.3: JBIG2 compression (DeviceCMYK)

Testing guidelines

This patch can be used in two ways:

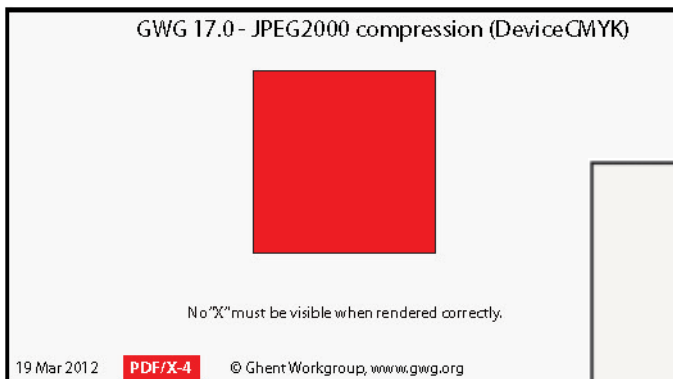
- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 1

A clear X indicates the improper handling of a file

Example 1

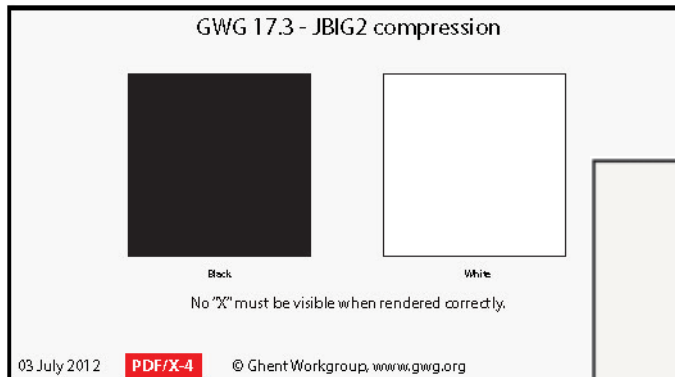


Correct rendering of the patch, the test passed.
No clear X is showing.



Incorrect rendering of the patch, the test has failed. The X indicates an incorrectly rendered test.

Example 2



Correct rendering of the patch, the test passed.
No clear X is showing.



Incorrect rendering of the patch, the test has failed. The X indicates an incorrectly rendered test.

NOTE:

- It is possible that only a faint 'X' appears in case of 17.3.
- Only the fill colour of a patch element should be evaluated. Because of anti aliasing, it is possible to see a very thin stroke line at the edges of an 'X'. This does per definition not indicate a problem. A distinguished coloured fill colour does though.

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Patch 2.0 - Spot and CMYK Overprint

Intent

This patch is designed to highlight certain problems that can arise when rendering Spot color objects that are set to overprint CMYK objects. This patch uses the Spot color GWG Green.

Testing guidelines

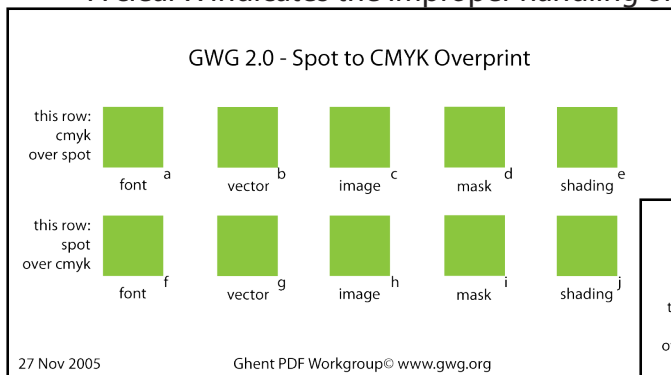
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

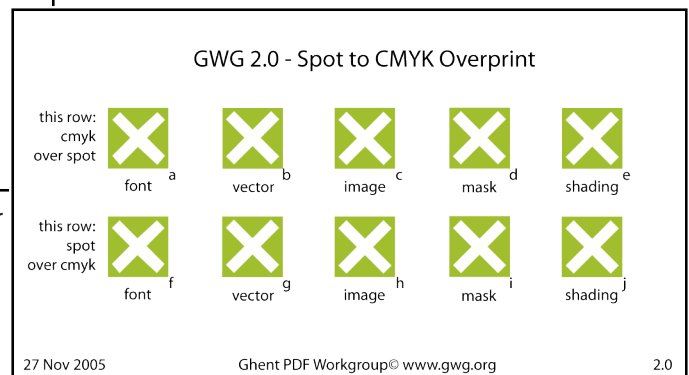
Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

Description of tests

- a) A font object colored in CMYK is overprinting a Spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- b) A vector object colored in CMYK is overprinting a Spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- c) An image object colored in CMYK is overprinting a Spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- d) An image mask object colored in CMYK is overprinting a Spot color object. If an X shows it means that overprints have been wrongly applied or some other rendering problem has occurred.
- e) A smooth shading object colored in CMYK is overprinting a Spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- f) A font object colored in the Spot color GWG Green is overprinting a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- g) A vector object colored in the Spot color GWG Green is overprinting a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- f) An Image object colored in the Spot color GWG Green is overprinting a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- f) An Image mask object colored in the Spot color GWG Green is overprinting a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- f) A smooth shading object colored in the Spot color GWG Green is overprinting a CMYK object. If an X shows it means that overprints have been wrongly applied or some other rendering problem has occurred.

Notes

A faint 'X' in slightly darker green may show in all of the tests; this is acceptable behavior in this patch. Only a clearly visible X indicates an incorrectly rendered patch. Please see example on the first page of this README file.

This patch appears to be a simple patch, and should be rendered without fail on its own. It is, however, possible that the amalgamation of this patch with other patches may very well lead to problems. There are several cases in which objects set to overprint using Spot colors can prove to create some advanced problems. For example, If you simulate Spot colors for proofing or commonly convert Spot colors to CMYK this patch can be used to highlight potential errors in your working practices. Use this patch along with patch 10 —Spot to CMYK conversions for testing Spot color simulation.

Patch contributors

Paul Feenstra Kuiper
Roto Smeets
Netherlands

David Zwang
Zwang & Company
United States

Patch creation date

27 Nov 2005

Patch 4.1 — White Overprint Mode

Intent

The intention of this patch is to identify correct or improper rendering of files with white elements not defined in CMYK set to overprint or almost white set to overprint. This patch uses CMYK and spot color GWG Green.

Testing guidelines

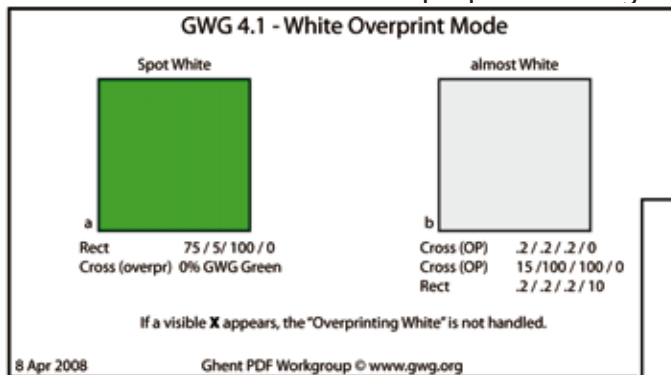
The files may be used in two ways:

- A single file may be used to test a specific step in a workflow, such as a RIP.
- The files together may be used to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

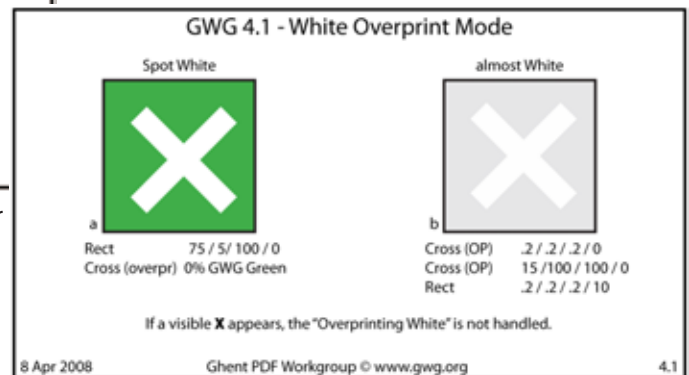
Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test. Note that the X in box b could also be red, see notes on next page for details.

Description of tests

If an X clearly shows, the patch has been rendered incorrectly - mostly because the overprint of a white element was set to knockout.

- a) A white vector element defined in Separation "GWG Green" with overprint on placed on top of a CMYK element.
- b) An CMYK element defined almost white (0.2% in each process color channel except black) set to overprint placed on top of a red cross and a vector element, both defined in DeviceCMYK.

If a PDF/X conforming workflow performs the rendering, the patch to show up as a green and a gray rectangle.

Possible wrong output:

- white X in patch a:
Overprint was deactivated or not honored.
- white X in patch a:
The spot color object was converted to CMYK, Overprint stayed on, but OPM was not set to 1.
- red X in patch b:
Due to rounding errors the 0.2% colorant are treated as 0% leading to an overprinting white element
- white X in patch b:
The overprinting got deactivated or not honored.

Notes

Patch 4.1 has been introduced to go along with Patch 4.0.1 It test for known problematic cases that do not appear in patch 4.0.1 The behavior of the objects included in this patch can easily be modified when doing conversion or amalgamating this patch with other patches. Overprint behavior changes depending on different color spaces and overprint modes. An object that is “nearly white” (0.02% in this instance) could be interpreted as white by some applications as the numbers get rounded by the application, therefore changing the overprint behavior. This patch includes examples of cases where objects would be expected to disappear as well as cases where the proper behavior would be to knock out the object below. It is possible that the amalgamation of this patch with other patches may very well lead to problems. For example, the amalgamation of this patch with patch 11 (default color space) using a layout application could very well point out some problems with the application that would otherwise go unnoticed.

Patch contributors

Peter Kleinheider
Callas Software GMBH
Austria

Patch creation date

08 April 2008

Patch 3.0 — Gray Overprint

Intent

This patch is designed to highlight certain problems that can arise when rendering Gray objects that are set to overprint other objects. This patch uses CMYK and Spot color GWG Green.

Testing guidelines

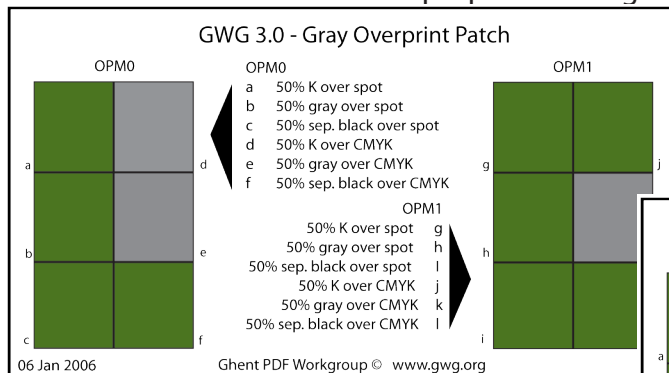
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

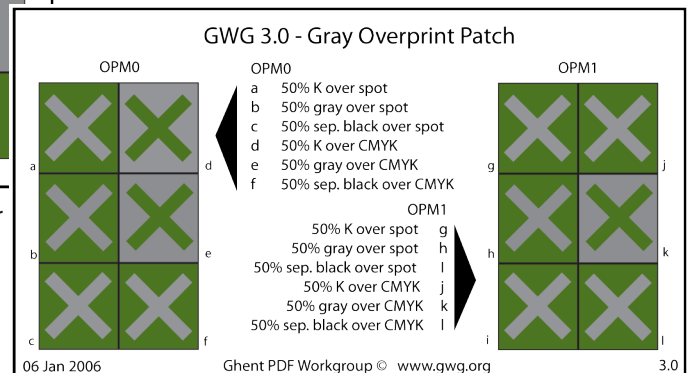
Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch: all tests passed. No clear X is showing.



Incorrect rendering of the patch: all tests have failed. Each X indicates an incorrectly rendered test.

Description of tests

OPM Mode 0

- a) A 50%K vector object is set to overprint a multi-spot colored object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- b) A 50% Gray vector object is set to overprint a multi-spot colored object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- c) A 50% Spot color black vector object is set to overprint a multi-spot colored object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- d) A 50% K vector object is set to overprint a CMYK object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- e) A 50% Gray vector object is set to overprint a Gray object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- f) A 50% spot color black is set to overprint a CMYK object using OPM 0. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.

OPM Mode 1

- g) A 50%K vector object is set to overprint a multi-spot colored object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- h) A 50% Gray vector object is set to overprint a multi-spot colored object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- i) A 50% Spot color black vector object is set to overprint a multi-spot colored object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- j) A 50% K vector object is set to overprint a CMYK object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.

- k) A 50% Gray vector object is set to overprint a Gray object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.
- l) A 50% spot color black is set to overprint a CMYK object using OPM 1. If an X shows, the overprints have not been honored or rendered correctly or some other rendering problem has occurred.

Notes

There are several ways of describing black within a PDF file: K from CMYK, Gray, and separation Black. The expected overprint behavior differs depending on color spaces and overprint modes. This patch includes examples of cases where objects would be expected to overprint objects underneath as well as cases where the proper behavior would be to knock out the object below. It is also possible that the amalgamation of this patch with other patches may very well lead to problems. For example, the amalgamation of this patch with patch 11 (default color space), using a layout application could very well point out some problems with the application that would otherwise go unnoticed.

Patch contributors

Peter Claes
Sagamgraphic
Belgium

Patch creation date

06 Jan 2006

Patch 4.0.1 — White Overprint

Intent

This patch is designed to highlight certain problems that can arise when rendering White objects that are set to overprint other objects. This patch uses CMYK and spot color GWG Green.

Testing guidelines

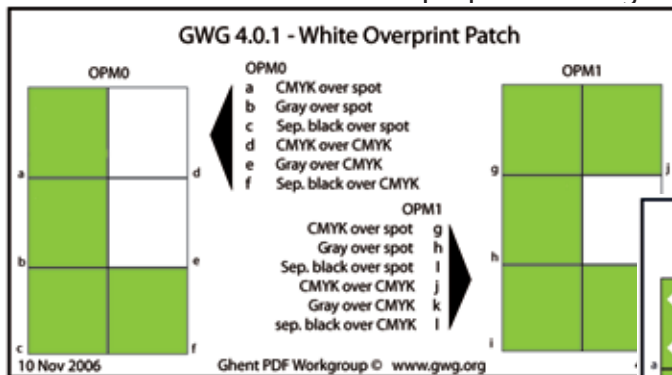
The files may be used in two ways:

- A single file may be used to test a specific step in a workflow, such as a RIP.
- The files together may be used to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

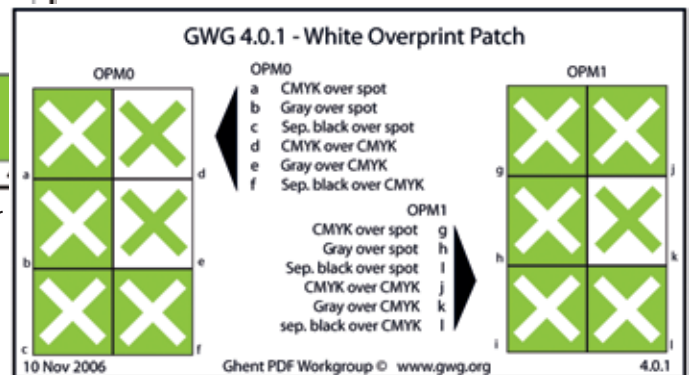
Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, all tests passed. No clear X is showing.



Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

Description of tests

- a) A CMYK vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- b) A Gray vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- c) A separation black vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- d) A CMYK vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- e) A Gray vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- f) A separation black vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- g) A CMYK vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- h) A Gray vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- i) A separation black vector object is set to overprint a spot color object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- j) A 0% CMYK vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.

- k) A Gray vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.
- l) A separation black vector object is set to overprint a CMYK object. If an X shows, it means that overprints have been wrongly applied or some other rendering problem has occurred.

Notes

Patch 4.0.1 replaces previously released version 4.0. Objects that are set to A 0% and are set to overprint disappear in most cases, but not all cases. All the white objects on this patch are set to overprint, but the expected behavior differs depending on different color spaces and overprint modes. This patch includes examples of cases where objects would be expected to disappear as well as cases where the proper behavior would be to knock out the object below. It is possible that the amalgamation of this patch with other patches may very well lead to problems. For example, the amalgamation of this patch with patch 11 (default color space) using a layout application could very well point out some problems with the application that would otherwise go unnoticed.

Patch contributors

Peter Claes
Sagamgraphic
Belgium

Patch creation date

10 Nov 2006

Patch 3.1 — Gray Image Overprint (CMYK over Spot)

Intent

This patch is designed to identify clearly how applications and workflows handle overprinting of grayscale images (e.g. created during flattening of drop shadows).

Testing guidelines

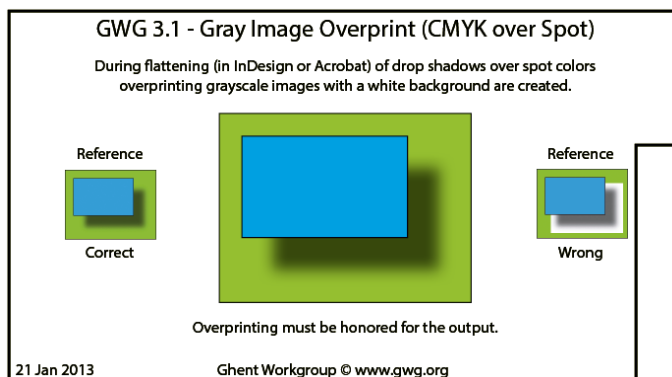
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

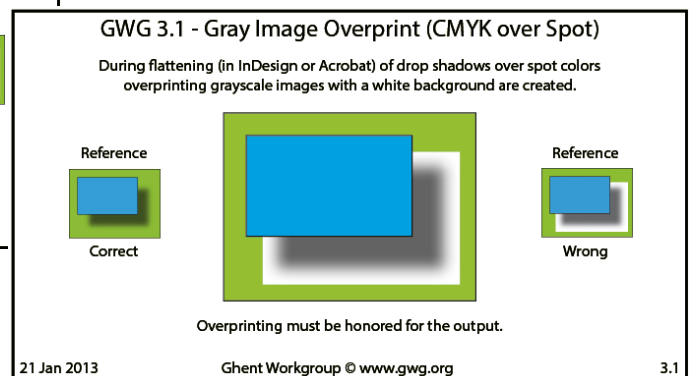
Method 1

If a white rectangle appears (see reference) then overprinting of the grayscale image(s) was turned off.



Correct rendering of the patch, test passed.

No white rectangle is visible.



Incorrect rendering of the patch, test failed.

White rectangle is visible.

Description of results

During flattening (e.g. in InDesign or Acrobat) of drop shadows over spot colors overprinting grayscale images are created. In order to achieve the desired appearance these images must stay on overprint. However a lot of output workflows change the overprint behaviour of these objects.

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
PrePress-Consulting,
Switzerland
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Patch creation date

21 January 2013

Patch 12.0 — White Overprint/Knockout

Intent

This patch is designed to identify clearly how applications and workflows handle white overprint and knockout.

Testing guidelines

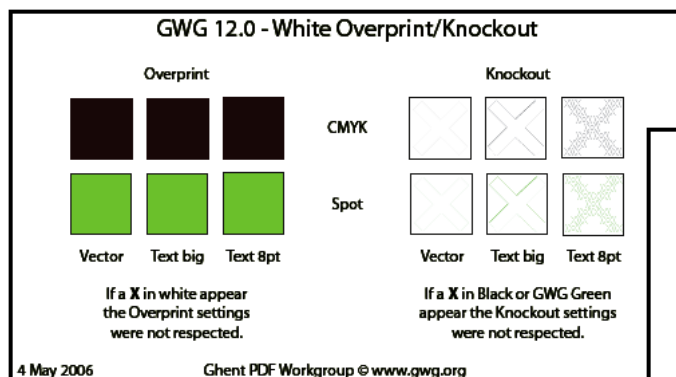
Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

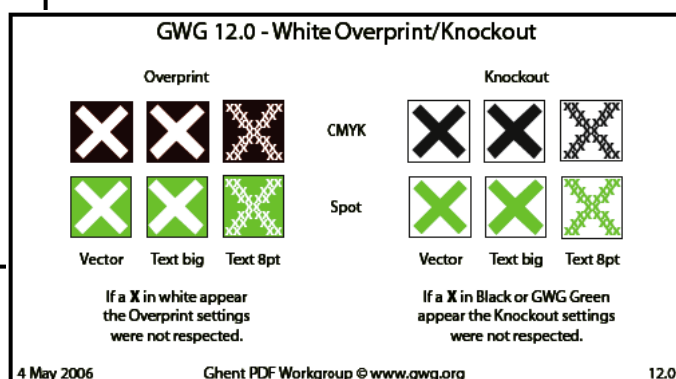
Method of evaluation

Method 1

A clear **X** indicates the improper handling of a file.



Correct rendering of the patch, all tests passed. No clear **X** is showing.



Incorrect rendering of the patch, all tests have failed. Each **X** indicates an incorrectly rendered test.

Description of results

A lot of workflows and RIPs try to “fix” white objects by setting white always to knockout. This test has elements with vector, big text (59 pt) and small text (8 pt). Both overprint and knockout of process and spot colors are tested.

When a workflow or RIP changes the overprint behaviour of an element an X appears.

Reason of this test

The application notes for ISO 15930 (PDF/X specification) clearly state that “The overprint settings applied to objects within a PDF/X file reflect the intent of the PDF/X file’s creator and must be preserved by applications or RIPs used in an imaging workflow. Applications and RIPs not configured to honor overprint contained in the PDF/X may produce unintended imaging results.”

Therefore the overprint setting should not be changed during the process.

Notes

This is a basic patch and all graphic arts equipment should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
PrePress-Consulting,
Switzerland
sjaeggi@prepress.ch

Patch creation date

27 December 2006

Patch 8.1— DeviceN Support (5 colors)

Intent

This patch is designed to identify clearly how applications and workflows handle DeviceN. This patch uses only one spot color.

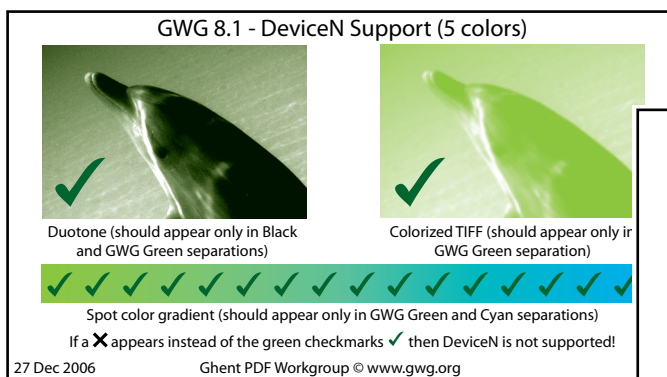
Testing guidelines

Test patches may be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

This patch uses more than one method for testing the handling of the content. The output needs to be clearly examined, as described on the following page, in order to determine if it has been rendered correctly.



This patch is rendered correctly when greenish check marks are visible in the lower left corner of the images and in the gradient. The patch also must separate as described on the following page. There must be no visible **Xs**. It is possible for this patch to be rendered incorrectly and have no **Xs** appear.

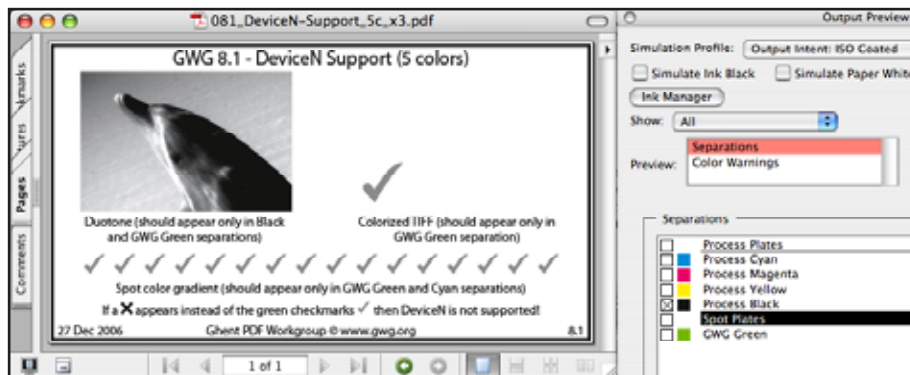


If **Xs** appear the patch has been rendered incorrectly. It is possible for this patch to be rendered incorrectly and have no **Xs** appear therefore the patch must also be checked according to the information provided on the following page of this file.

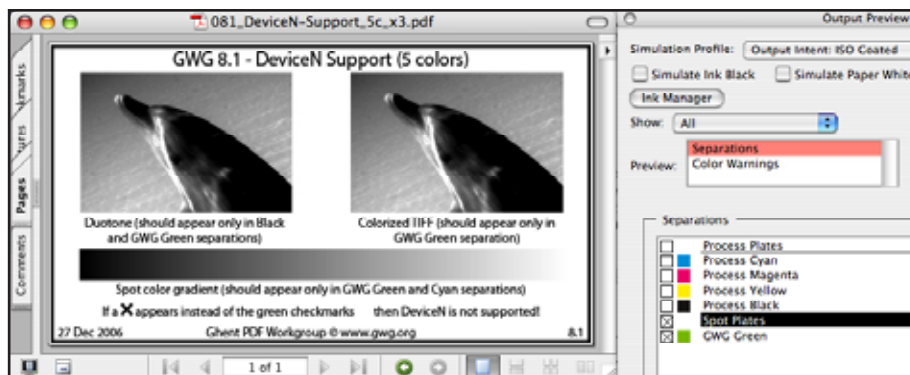
Description of results

This patch tests the DeviceN capabilities of a workflow. If DeviceN is not handled correctly the colors are converted to CMYK. Instead of the check marks an **X** will appear in the lower left corner of each image and in the gradient.

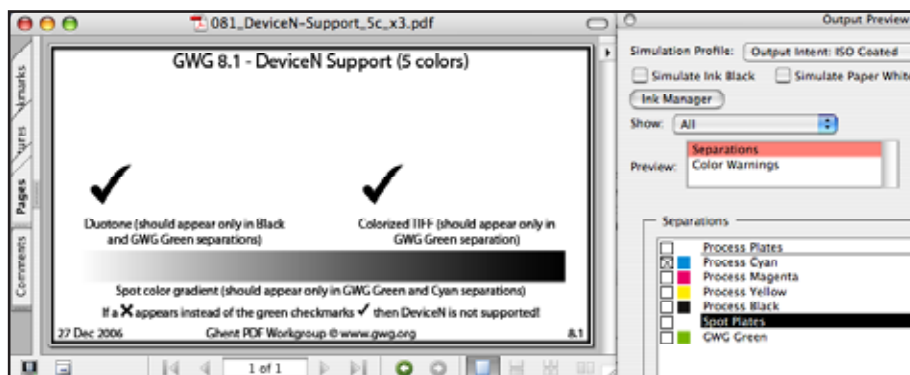
In addition you could inspect the color separations. The objects should appear only in the Black, GWG Green and Cyan separations as indicated in the captions:



Black



GWG Green



Cyan

Notes

This is a basic patch and all graphic arts equipment which are PostScript Level-3 compatible should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
PrePress-Consulting,
Switzerland
sjaeggi@prepress.ch

Patch creation date

27 December 2006

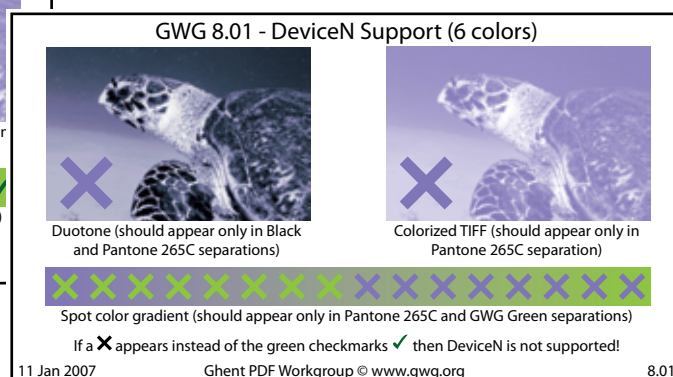
Intent

Testing guidelines

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

This patch uses more than one method for testing the handling of the content. The output needs to be clearly examined, as described on the following page, in order to determine if it has been rendered correctly.

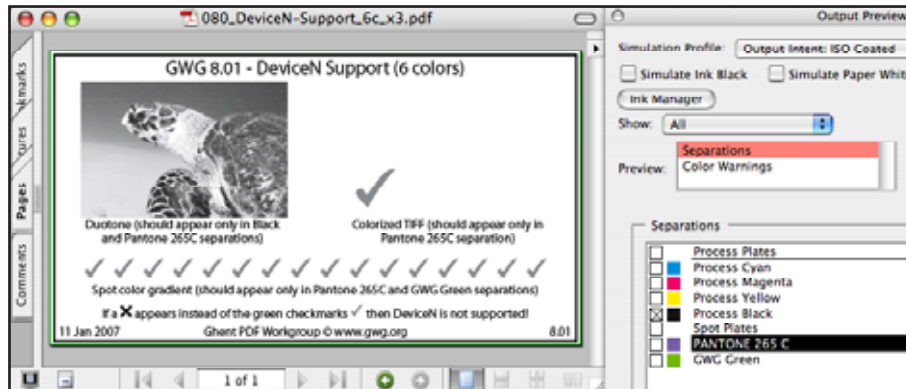


If **Xs** appear the patch has been rendered incorrectly. It is possible for this patch to be rendered incorrectly and have no **Xs** appear therefore the patch must also be checked according to the information provided on the following page of this file.

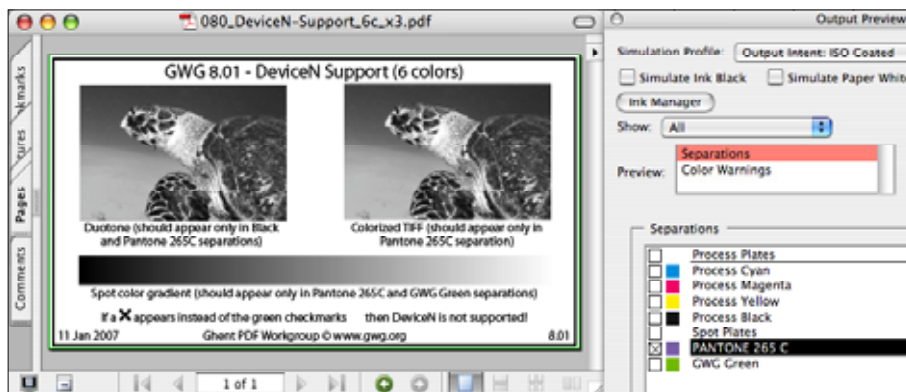
Description of results

This patch tests the DeviceN capabilities of a workflow. If DeviceN is not handled correctly the colors are converted to CMYK. Instead of the check marks an **X** will appear in the lower left corner of each image and in the gradient.

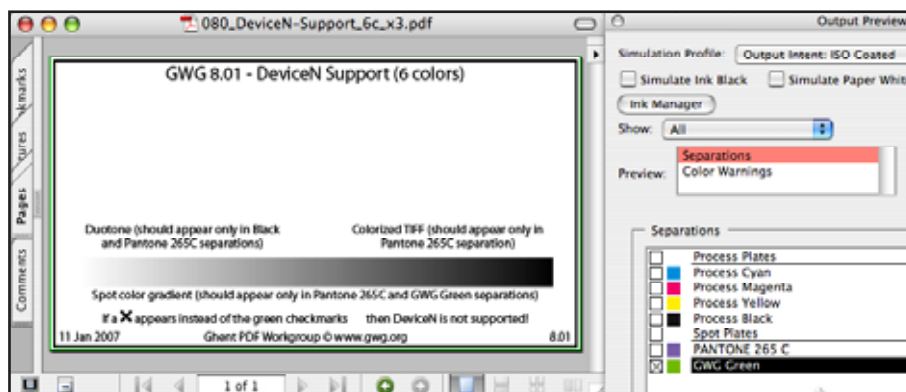
In addition you could inspect the color separations. The objects should appear only in the Black, Pantone 265C and GWG Green separations as indicated in the captions:



Black



Pant. 265C



GWG Green

Notes

This is a basic patch and all graphic arts equipment which are PostScript Level-3 compatible should be able to handle this patch without any issues.

Patch contributors

Stephan Jaeggi
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Switzerland
sjaeggi@prepress.ch

Patch creation date

11 January 2007

Patch 23.0 – 4 different Gray definitions

Intent

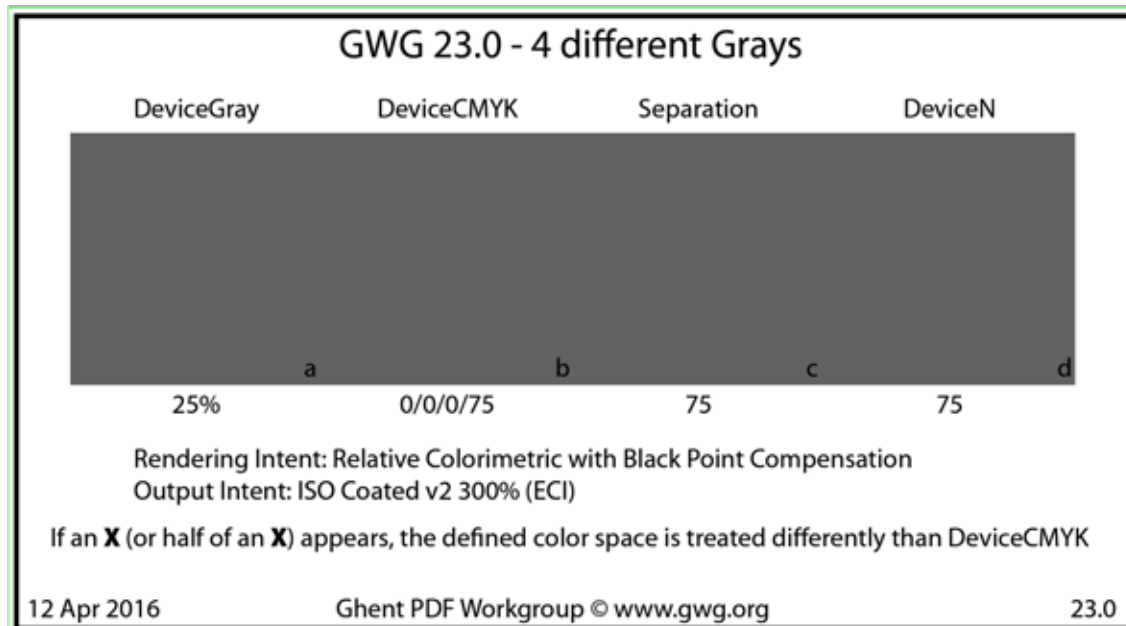
Patch 23.0 is meant to test the proper handling of PDF files that define gray and black objects. PDF offers 4 color spaces for black or gray objects that only render in the Black color channel. These color spaces are DeviceGray, DeviceCMYK, Separation and DeviceN. No matter in which color space a black or gray object is defined, the final rendering shall show the same visual result.

Testing guidelines

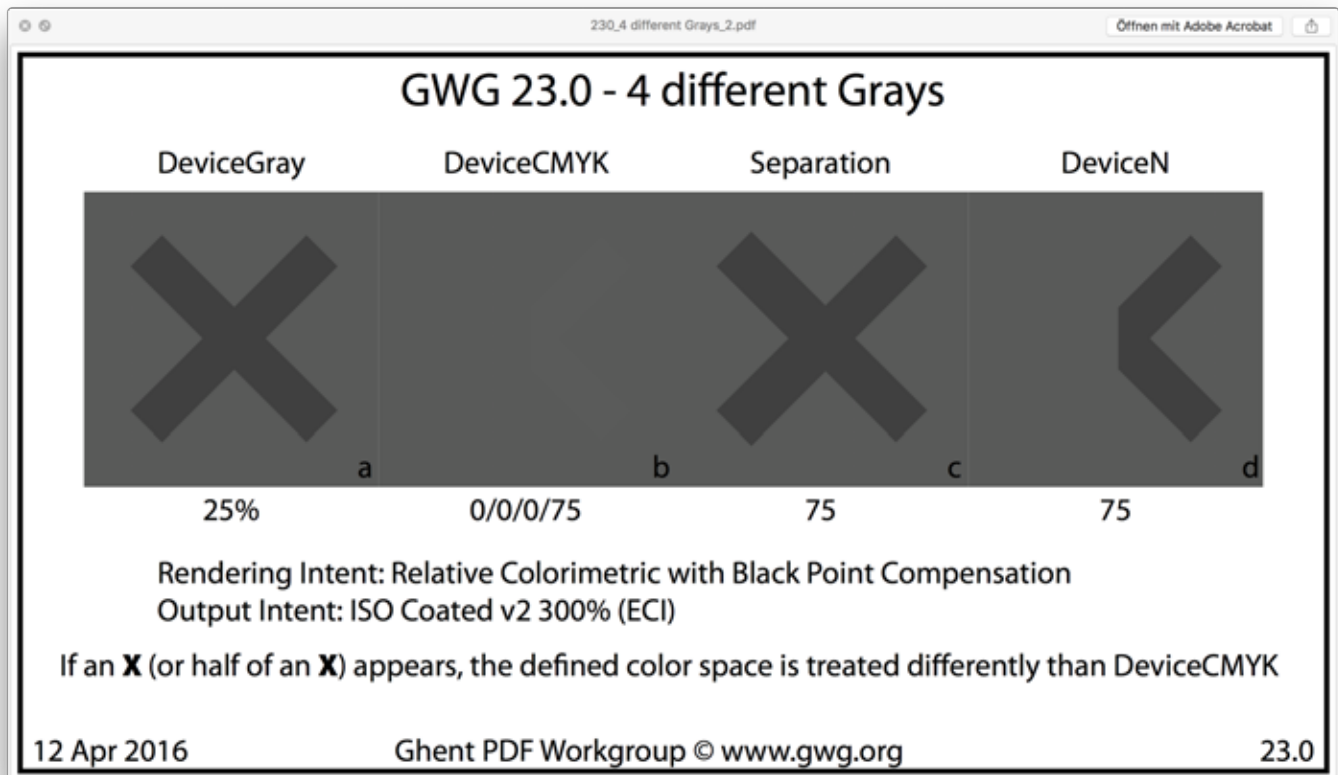
Test patches may be used in two ways:

- A single patch may be used to test the proper rendering of objects that are just defined using the black color channel
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

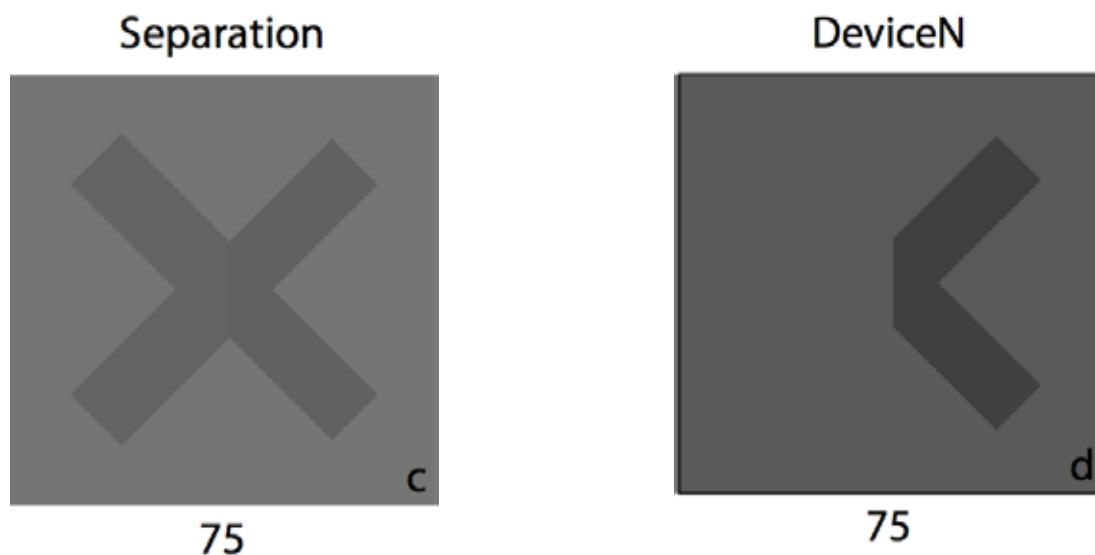
The test objects consist of a line art and an image object, both being clipped by the left and the right half of an X-Shape.



Method of evaluation



Usually, the object defined in DeviceCMYK should render as expected.
If an X appears, the color definition (stated above the patch) is handled differently than the DeviceCMYK the object.



A half X means, that either the line art object (left half) or the image object (right half) is handled differently than the DeviceCMYK object.

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Patch 13.0 – Colormanagement source profiles

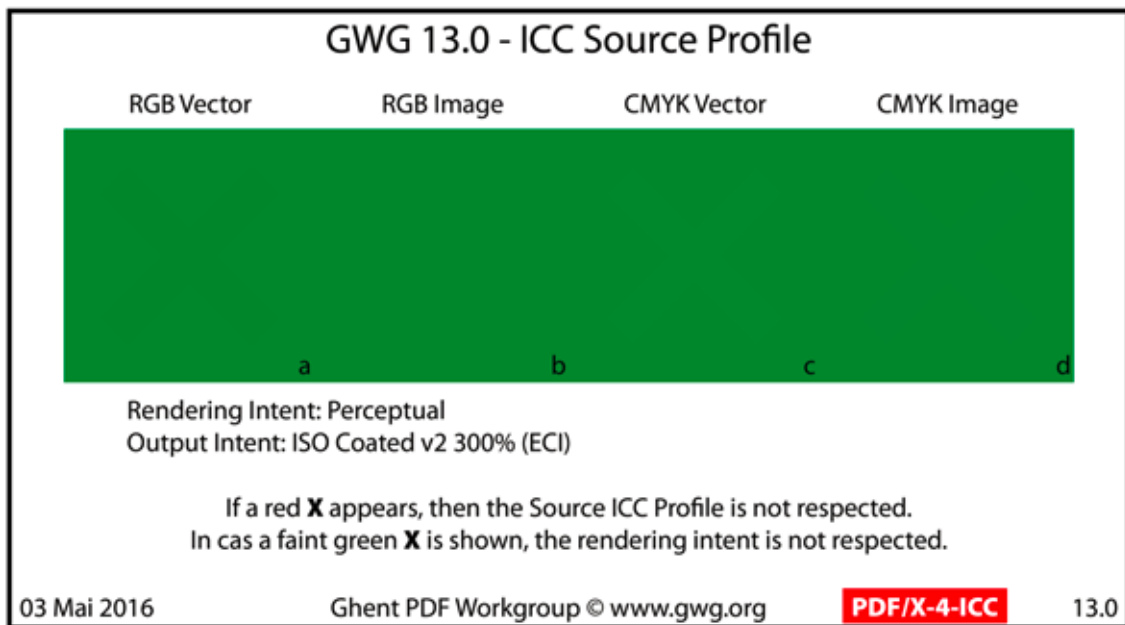
Intent

Patch 13.0 is meant to test the proper handling of PDF files that contain color managed objects. This patch uses device independent color definitions (namely ICCbased RGB and ICCbased CMYK), but no spot color definitions.

Testing guidelines

Test patches may be used in two ways:

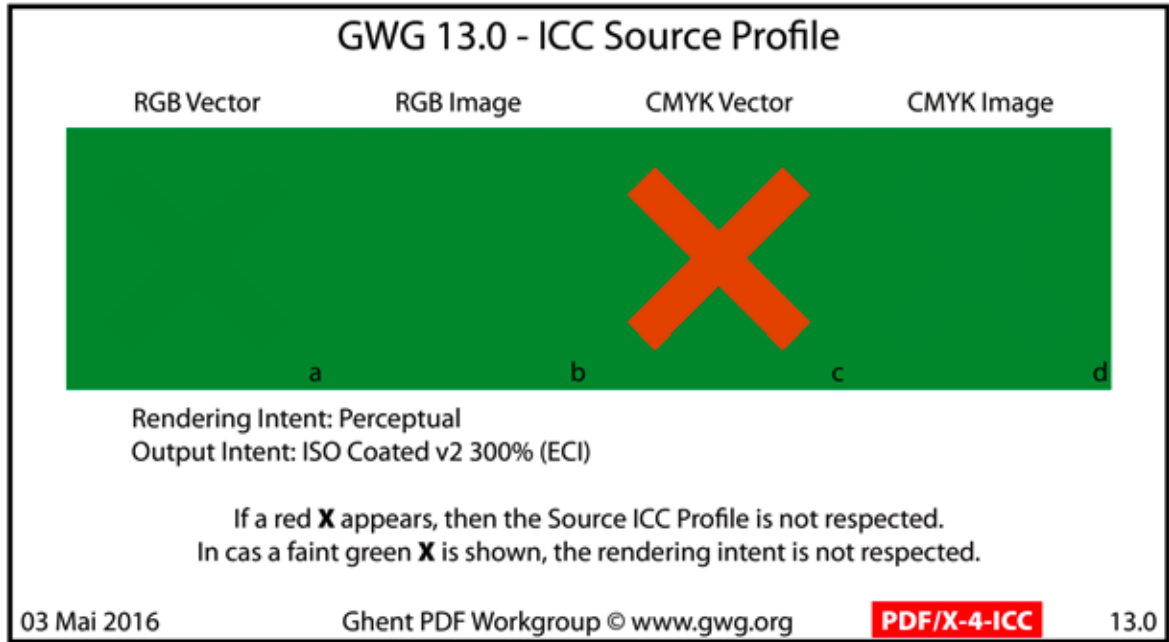
- A single patch may be used to test the proper rendering of objects that are using ICC source profiles
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.



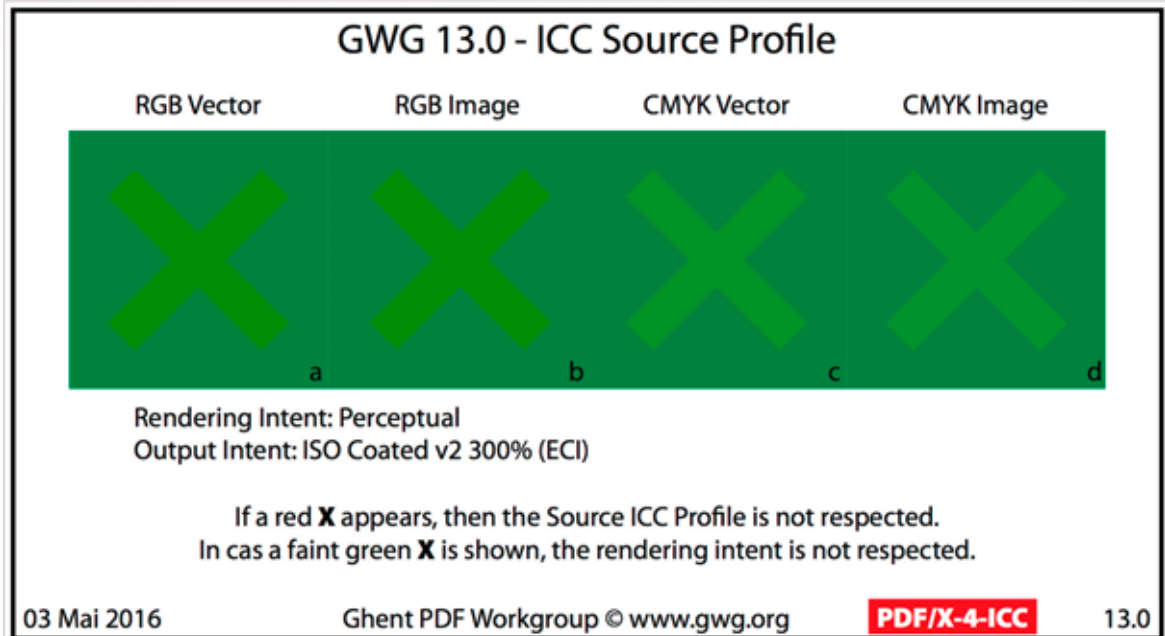
Expected rendering of all patches. No X can be seen.

Method of evaluation

If you see a any red X, then the defined source ICC profile for the above noted object type was not respected.



In case of a faint green X, the defined rendering intent “Perceptual” was not respected.



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Patch 13.2 and 13.3 – ICC based Overprint

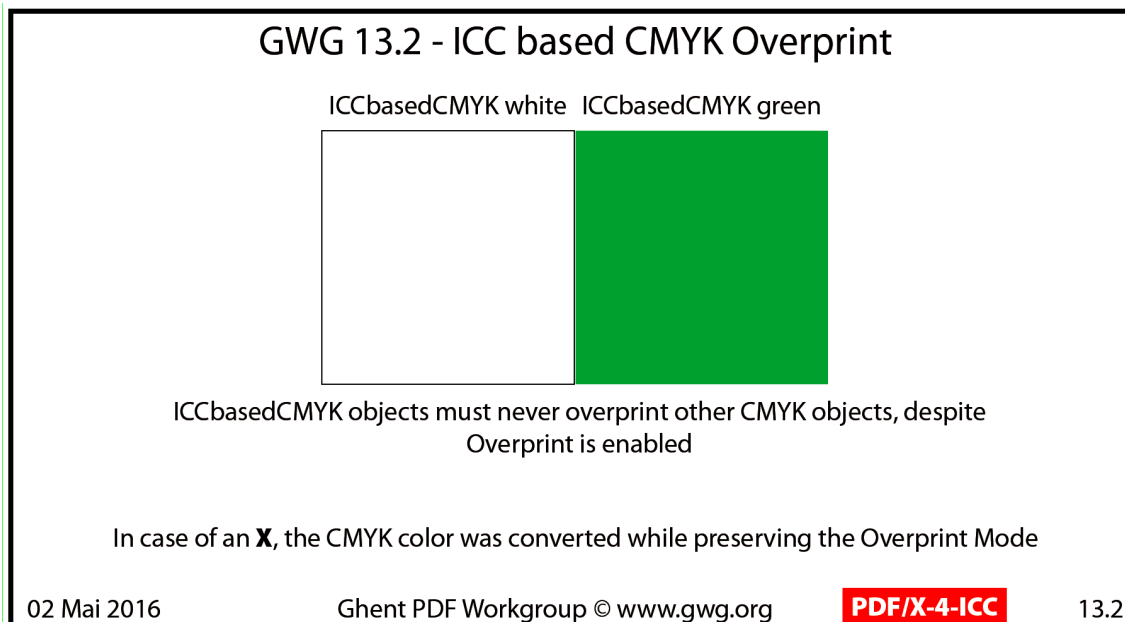
Intent

Patches 13.2 and 13.3 are meant to test the proper handling of PDF files that contain color managed objects set to overprint. These patches use device independent color definitions as well as objects defined in DeviceCMYK, but no spot color definitions

Testing guidelines

Test patches may be used in two ways:

- A single patch may be used to test the proper rendering of objects that are using ICC source profiles
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.



Expected rendering of all patches. No X can be seen.

Method of evaluation

If you see a checkmark in the patch 13.2, then the ICC profile was either removed or the ICC based CMYK color was converted, but the Overprint Mode was not changed to 0.

GWG 13.2 - ICC based CMYK Overprint

ICCbasedCMYK white ICCbasedCMYK green



ICCbasedCMYK objects must never overprint other CMYK objects, despite Overprint is enabled

In case of an **X**, the CMYK color was converted while preserving the Overprint Mode

02 Mai 2016 Ghent PDF Workgroup © www.gwg.org **PDF/X-4-ICC** 13.2

If you see a checkmark in the patch 13.3, then the ICC based RGB color was converted, but the Overprint Mode was not changed to 0.

GWG 13.3 - ICC based RGB Overprint

ICCbasedRGB white ICCbasedRGB green



ICCbasedRGB objects must never overprint other CMYK objects, despite Overprint is enabled and Overprint Mode is 1

In case of an **X**, the RGB color was converted to CMYK while preserving the Overprint Mode

27 Apr 2016 Ghent PDF Workgroup © www.gwg.org **PDF/X-4-ICC** 13.3

In either case, the Overprint Mode must be changed to 0, otherwise the resulting CMYK object overprints the underlying CMYK object which can result in a different rendering than when viewed with objects still being ICC based.

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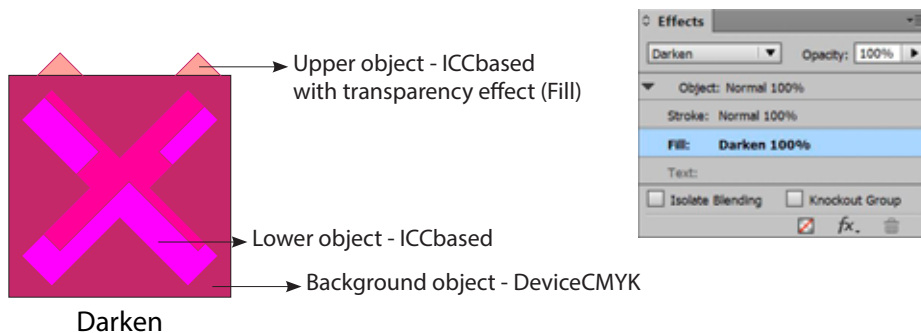
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Patch 16.1, 16.4 – Transparency Basic Blend Modes (ICCbased)

Intent

The intent of the patch is to check for correct rendering of Transparency Basic Blend Modes (Multiply, Screen, Overlay, etc.) for ICCbased objects. Each test patch element is constructed as follows:



Testing guidelines

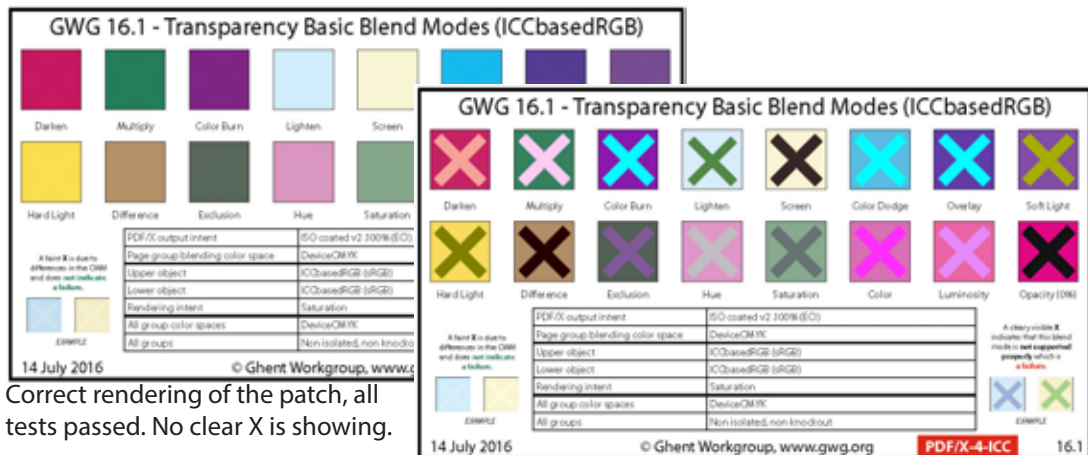
This patch can be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 1

A clear X indicates the improper handling of a file.



Correct rendering of the patch, all tests passed. No clear X is showing.

Incorrect rendering of the patch, all tests have failed. Each X indicates an incorrectly rendered test.

ATTENTION!

When rendering this patch, please take the following considerations into account:

- A faint **X** is due to differences in the CMM and does **not indicate a failure**.

Example:



EXAMPLE

- A clearly visible **X** indicates that this blend mode is **not supported properly** which is **a failure**.

Example:



EXAMPLE

The same markers were added to the test files to indicate the caution.

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Patch 16.7– Image Soft Masks (ICCbased)

Intent

The intent of the patch is to check for correct rendering of Soft Masks, a popular visual transparency effect to soften edges that can be very easily created in e.g. Adobe Photoshop using a Layer Mask (and transparent gradient or feather effect).

Testing guidelines

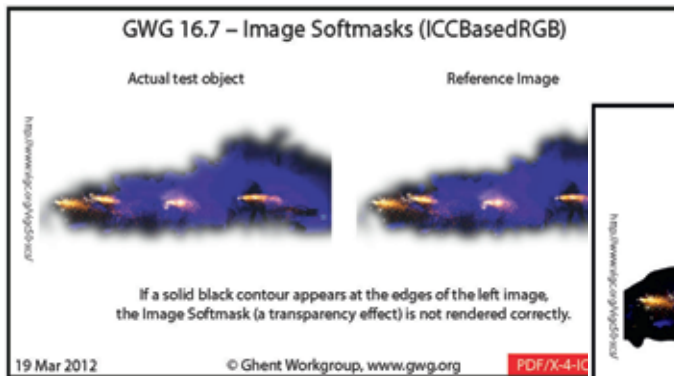
This patch can be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

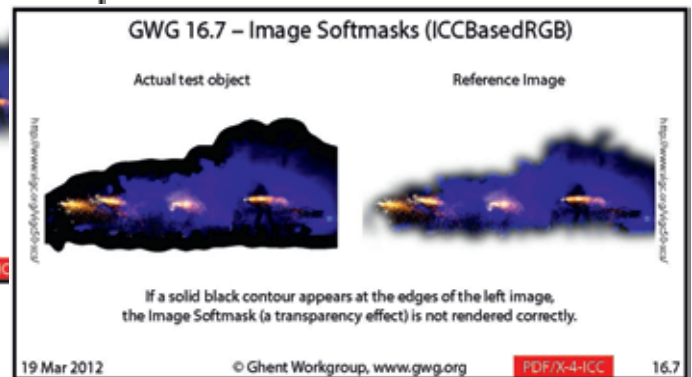
Method of evaluation

Method 2

A visual comparison to a reference within the patch



Correct rendering of the patch: the test passed. The Soft Mask looks the same as the reference image.



Incorrect rendering of the patch: the test failed. A clear black stroked fill is visible at the edge of the image instead of a smoothly softened edge.

NOTE:

- Disappearance of the Image Soft Masks is one way of how the incorrect rendering can occur. A clearly different colour rendering can also be seen as a way of how the patch should not be rendered.
- In some cases all patch elements will be rendered wrong. There are occasions where only just one or two patches are rendered differently. Caution may need to be taken while evaluating the rendered result.

Patch 17.2 – Image Compression (ICCbased)

Intent

The intent of the patch is to check proper rendering of JPEG2000 compression for ICCbased objects.

Testing guidelines

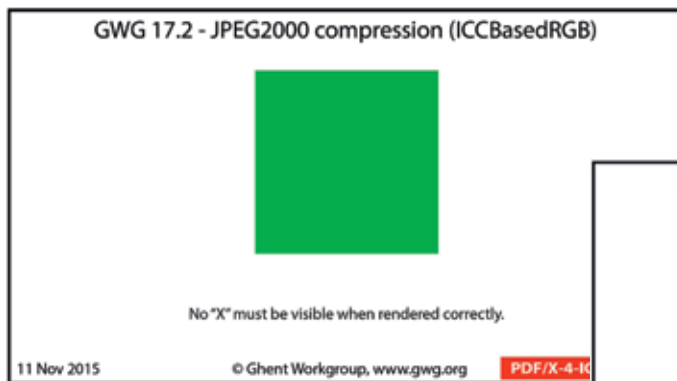
This patch can be used in two ways:

- A single patch may be used to test a specific step in a workflow, such as a RIP.
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

Method 1

A clear X indicates the improper handling of a file



Correct rendering of the patch, the test passed.
No clear X is showing.



Incorrect rendering of the patch, the test has failed. The X indicates an incorrectly rendered test.

NOTE:

- It is possible that only a faint 'X' appears for this patch.
- Only the fill colour of a patch element should be evaluated. Because of anti aliasing, it is possible to see a very thin stroke line at the edges of an 'X'. This does per definition not indicate a problem. A distinguished coloured fill colour does though.

Patch 18, all sub versions – 16Bit Images in various color spaces

Intent

These patches are designed to identify clearly how applications and workflows handle images with 16Bit per channel defined in Device and ICC based color spaces.

Testing guidelines

Test patches may be used in two ways:

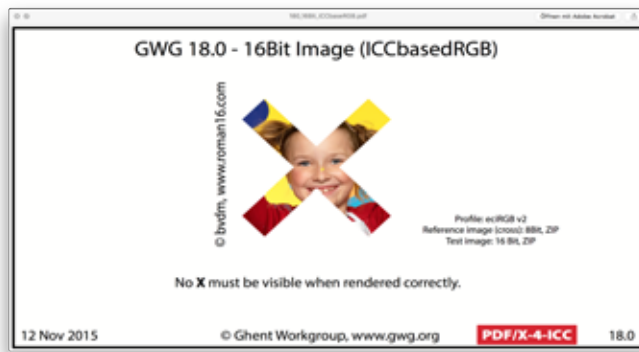
- A single patch may be used to test the support for 16Bit in the workflow
- Patches may be grouped with other patches to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

A complete rectangular image visualizing a person indicates that the system is supporting 16Bit images defined in the color space stated in the headline.



If the image renders in the shape of a cross, then such an 16Bit image using the stated color space is not handled properly on the output system. Such a PDF renderer is not to be considered as PDF/X-4 savvy.



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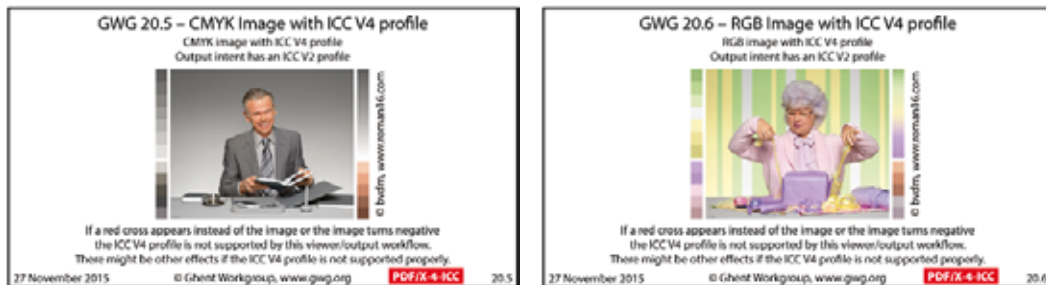
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GWG 20.5/20.6 – CMYK/RGB Image with ICC V4 Profile

Intent

The purpose of this patch is to test if the workflow can handle ICC V4 profiles (CMYK and RGB) as source color of an image:



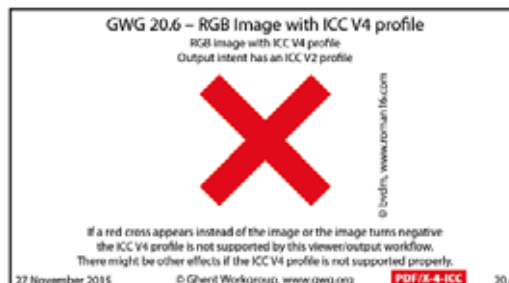
Testing guidelines

The test patches may be used in two ways:

- A single patch may be used to test the support ICC V4 profiles in the workflow.
- Patches may be grouped with other patches on a page to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

If the image with the ICC V4 source profile is not rendered correctly you will either see a disturbed image or the image will not be displayed at all. In this case a big red cross which is placed behind the image will become visible. In some cases you may also get error messages from the application processing the PDF.



Patch Creation

This patch was created with Adobe InDesign CS6 and exported to PDF/X-4.

Patch Contributors

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GWG 22.0 – Color Conversion Indicator

Intent

The purpose of this patch is to show if a color conversion took place.

The patch contains a grey rectangle (66% K) with transparency blending mode Hard Light:



Testing guidelines

The test patches may be used in two ways:

- The patch may be used by itself to test if a color conversion takes place.
- The patch may be grouped with other patches on a page to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

If a color conversion (e.g. ink saving) reduces the level below 50% then the dark background and the grey cross become visible:



NOTE: This does not necessarily mean that the output workflow is wrong!

Patch Creation

This patch was created with Adobe InDesign CS6 and exported to PDF/X-4.

Patch Contributors

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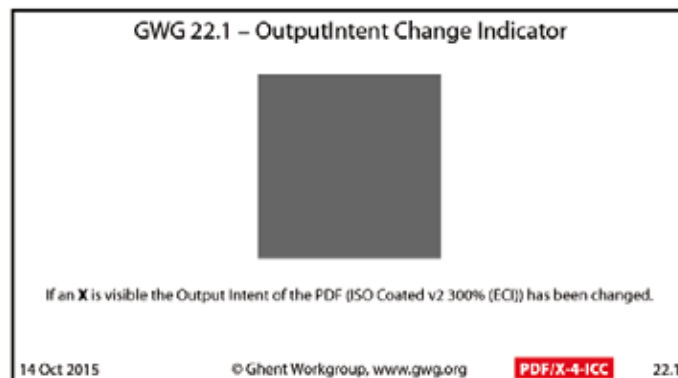
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GWG 22.1 – Output Intent Change Indicator

Intent

The purpose of this patch is to show if a color conversion took place.

The patch contains a grey rectangle (66% K) with transparency blending mode Color Burn:



Testing guidelines

The test patches may be used in two ways:

- The patch may be used by itself to test if the OutputIntent was changed.
- The patch may be grouped with other patches on a page to test the whole of a workflow that will aggregate multiple files together, e.g. for partial page advertisements in a magazine.

Method of evaluation

If the OutputIntent changes the grey cross becomes visible.

NOTE: This does not always work in all circumstances!

Patch Creation

This patch was created with Adobe InDesign CS6 and exported to PDF/X-4.

Patch Contributors

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