
Processing Steps Test Suite V1.0

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1. Introduction

1.1. About the Ghent Workgroup

The Ghent Workgroup (GWG) is a worldwide assembly of graphic arts stakeholders (user associations, vendors, consultants, educational institutions, service providers, and end users) founded in 2001. It was formed in response to increased needs for standardization of the different processes in graphic arts workflows, especially in an increasingly globalized service provider landscape. The rules of the group have been carefully conceived to ensure that the group remains practically oriented, and the priority is focused on the needs of the end users.

The GWG focuses on developing best practice guidelines and specifications for graphic arts workflows. While initially focusing mainly on quality control and preflight for PDF workflows in commercial print, that focus has broadened to also include metadata specifications, workflow test suites and increased support for market segments such as packaging.

All material created by the GWG is disseminated free of charge through the website of the GWG (www.gwg.org) and through the vendors and user associations partaking in the work of the group.

The mission statement of the Ghent Workgroup states that the group will “establish and disseminate process specifications for best practices in graphic arts workflows”. In practice this means that the group:

- Develops and maintains process specifications and associated documentation for best practices in graphic arts workflows.
- Develops and maintains *reference implementations* to ensure the specifications it develops are usable in the real world.
- Actively promotes adoption of its work in both the graphic arts user and vendor communities.
- Streamlines and coordinates the decision process between its members.

While the group started its work developing guidelines for PDF quality control, it has expanded its scope. The group is now involved in magazine, office, and packaging specific specifications, the development of job ticket metadata specifications for delivering PDF files for advertisements, preflighting PDF files, and in developing test suites to ensure workflows and applications are configured and used correctly.

Much of the work of the group is done through teleconferences and e-mail discussions. Three times a year, the members come together for a three-day face-to-face meeting. To streamline the work and decision process, subcommittees have been organized around specific topics do the actual work. To learn more about the different subcommittees, or to find out how you can contribute to this effort, visit the Ghent Workgroup website (www.gwg.org).

1.2.About This Document

In the Ghent Workgroup we decided to create a test suite to check that every vendor implements the ISO Specification of Processing Steps (ISO 19593-1) correctly.

To achieve this, we started by creating a set of test patches that tests one specific detail of the specification, and as such, a vendor can compare of its software handles that patch in the expected way.

Graphic Arts users can also use this suite to check the behaviour of the software they are using.

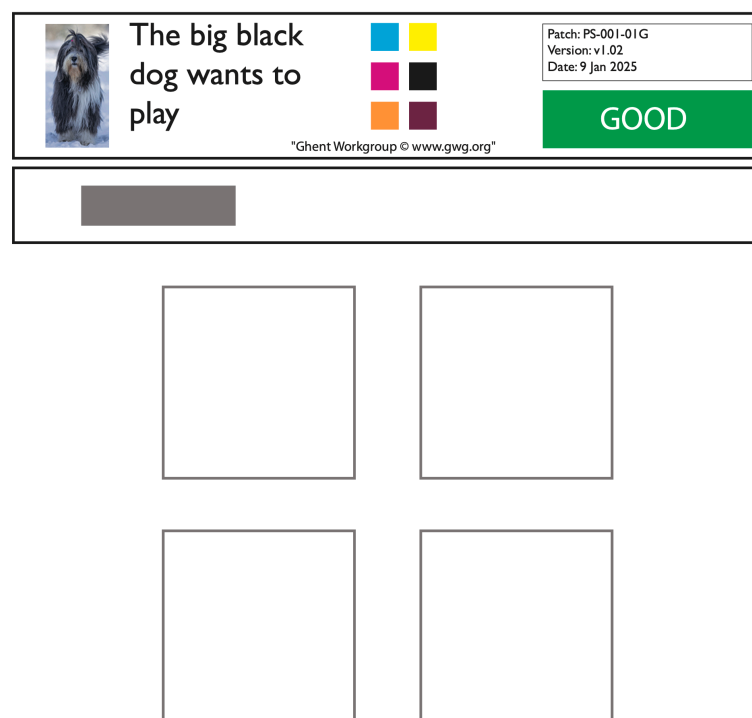
2. Test Patches

This Test Suite contains 39 patches.

Each of these test patches can be processed by a preflight engine that implements a check for Processing Steps compliance, and can then decide if each patch is compliant or in violation of the specification.

2.1. Patch construction

Each Patch is build up in the same way, and contains a fixed layout that should assist you in evaluating the result:



In the top section, there is a box with some fixed PDF Objects (in most cases). An image, some text, some color swatches.

Further you will find the name of the patch, the version of the patch, and the date the patch was last modified.

There is also a coloured box with text that documents the expected result:

- Green with the text 'GOOD' means that the patch is compliant with the Processing Steps specification.
- Red with the text 'ERROR' means that the patch is in violation of the Processing Steps specification.

- Orange with the text 'WARNING' means that the patch is compliant with the Processing Steps specification, but contains some setup that might not be desired. It is up to the software to really issue a warning, or to accept the patch without warning.

Warning and Error patches will have a description of what is being tested, to help developers find problems if the preflight does not find the specific problem.

All this information is placed on an OCG¹ without an assigned Processing Step

The middle (small) section contains some PDF objects and these PDF objects are placed on a new OCG that has a Processing Step assigned, but not the Processing Step that is being tested. It is added to test that if a warning or error is reported, that it is only reported on the faulty data

Finally, the large lower section contains PDF objects on the actual OCG with a specific Processing Step that is tested. Some of these PDF objects will trigger the error or warning, but not per se all of these PDF objects. Or in case of a good patch, none of these PDF Objects should trigger a error or warning

Some patches contain some extra OCG, because in some cases a certain structure needs to be build to enable the actual test setup.

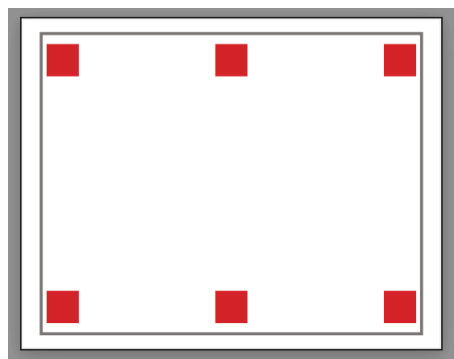
2.1.1. Caution!!

Some patches use specific page box configurations to do some specific tests. However, these setups interfere with what you might see in viewers that only display the contents inside the media box and/or the crop box.

This happens for patches:

- Patch PS-009-09E.pdf
- Patch PS-009-10G.pdf
- Patch PS-009-11E.pdf
- Patch PS-009-12G.pdf
- Patch PS-009-13E.pdf
- Patch PS-009-14G.pdf

If you open these patches in Acrobat (in this example, PS-009-09E), you will only see



¹ OCG is an abbreviation for Optional Content Group, which is the name used for layers (and other similar constructions) in PDF.

2.2. Combining patches

Please note that it is impossible to join 2 or more of these patches onto another document, because then you can no longer detect individual problems. Even success patches cannot easily be combined, because the combination of the compliant patches might actually result in a document that is in violation of the specification.

2.3. Processing Steps to be found

It might also be helpful for developers to know what Processing Steps should be found. As such, we document below the Processing Steps to be found in some patches:

Patch name	OCG name	PS group	PS type
PS-001-01G	Base Artwork	-	-
	Base Processing Step	Structural	Punching
	Test Processing Step	Structural	Cutting
PS-012-01W	Base Artwork	-	-
	Base Processing Step	Structural	Punching
	Test Processing Step	GWGS_Test Suite Custom Group	-
PS-013-01E	Base Artwork	-	-
	Base Processing Step	Structural	Punching
	Test Processing Step	Structural	NotAllowed
PS-013-02W	Base Artwork	-	-
	Base Processing Step	Structural	Punching
	Test Processing Step	Structural	GWGS_Test Suite Custom Type

2.4. List of Test descriptions

The following table contains the list of the specific test that is implemented by a certain patch. This information is also inside the test patches, but as documented above, the complete document content is not always fully visible by default, and hence we also document the tests here for reference.

The list only contains patches where an ERROR or WARNING is expected:

Patch name	Test Description
PS-001-04E	Printing content PDF Objects are z-order wise above Processing Step objects in the Structural - Cutting Processing Step and overlap with these objects.
PS-002-01E	The Test Processing Step OCG contains objects that use colorants also in use in the printing contents.
PS-003-01W	The Test Processing Step OCG contains objects that use 2 different spot colorants.
PS-004-01E	The Test Processing Step OCG contains knock-out objects.
PS-005-01E	The Test Processing Step OCG contains objects that use transparency.
PS-005-02E	The Test Processing Step OCG contains objects that use transparency.
PS-006-01E	The Test Processing Step OCG uses a Processing Step that should only contain stroked objects.
PS-006-03W	The Test Processing Step OCG contains objects that use (spot) colorant with tint set to 0.
PS-006-05W	The intention of this patch is to verify that no assumptions are made about custom Processing Steps. However, to test this we need to add a custom Processing Step, and that triggers a warning that a custom Processing Step is used.
PS-007-03W	The Test Processing Step OCG contains objects that use (spot) colorant with tint set to 0.
PS-008-01E	The Test Processing Step OCG contains image objects (an additional error about object using document colorants is also triggered).
PS-009-01E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the Structural - Bleed Processing Step in this patch.
PS-009-03E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the Structural - Cutting Processing Step in this patch.
PS-009-05E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the PDF BleedBox in this patch.
PS-009-07E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the PDF TrimBox in this patch.
PS-009-09E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the PDF ArtBox in this patch.
PS-009-11E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the PDF CropBox in this patch.

Patch name	Test Description
PS-009-13E	Objects in Processing Step Legend are not in an off-bleed location. That is, they overlap with surface of the printed product as defined by the PDF CropBox in this patch.
PS-010-01E	The Test Processing Step OCG contains objects that use process colorants.
PS-011-01E	The Test Processing Step OCG contains objects that use registration, all, or none as colorants.
PS-012-01W	The Test Processing Step OCG uses a custom Processing Step, and that custom Processing Step uses a second class name.
PS-012-02E	The Test Processing Step OCG uses a Processing Step Type on a Group assigned to the OCG that does not expect a type.
PS-012-03E	The Test Processing Step OCG uses a custom Processing Step, but that custom Processing Step does not use a second class name.
PS-013-01E	The Test Processing Step OCG uses a Processing Step Type that is not one of defined Types for the Group assigned to the OCG, and that Type does not use a second class name.
PS-013-02W	The Test Processing Step OCG uses a Processing Step Type that is not one of defined Types for the Group assigned to the OCG, and that Type uses a second class name.

3. Test Results

3.1. Interactive testing

In this case you will have to open each patch individually in your application, and trigger an evaluation of the document contents with regards to the Processing Steps contents. In some cases that is automatic while opening the document, in some cases that is an explicit Processing Steps preflight, or it could be part of a more general preflight setup, and in that case you want to select a profile/setting that only checks for Processing Steps compliancy.

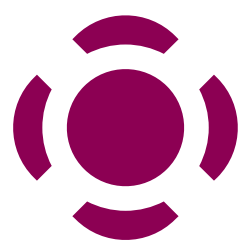
In this case, the visual feedback in the top section of the file should help you in matching the result of the interactive test with the expected result. E.g. Patches with the green box with the word GOOD should pass the test.

3.2. Automated testing

Automating the test normally means that you have a setup with some kind of preflight engine that has at least 2 outputs, (good/success versus bad/error), and it might also contains a warning output.

You want to select a profile/setting that only checks for Processing Steps compliancy, and then process all patches with the preflight engine.

Patch name	Expected output	Comment
Ending with 'G'	success	All these patches have to be accepted as compliant to the Processing Steps specification.
Ending with 'E'	error	All these patches have to be rejected as non compliant to the Processing Steps specification.
Ending with 'W'	success or warning	All these patches are compliant to the Processing Steps specification, but they contain contents that is sometime undesirable.



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