Differences between the GWG 2015 and 2022 specifications

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1 Introduction

New specifications from the Ghent Workgroup aren't released often. So, when they are, there are good reasons for them. The purpose of this document is to explain why new specifications were necessary, what has changed, and what the impact for you might be.

That impact differs based on who "you" are. Are you interested in using these new specifications in a preflight application for example? The "Using the 2022 specifications" chapter caters to you.

Are you instead a software or hardware developer who needs to understand the new specifications from a technical point of view? You should still read the chapter on using the 2022 specifications, but you should also read the "Developing against the 2022 specifications" chapter.

1.1 Perspective

When the Ghent Workgroup released the 2015 specifications, this was a major change indeed. Going from a PDF/X-1a based world to a PDF/X-4 based world came as a bit of a shock to many people. It means dealing with live transparency, more advanced PDF features, color spaces other than CMYK…

The change to 2022 isn't as big perhaps. The biggest possible change (to PDF 2.0 and PDF/X-6) is not a part of the 2022 specifications because the hardware and software in our market isn't ready for that yet.

In that sense, the 2022 specifications are more of a refinement of 2015, with a number of rough edges taken away, but still with useful goodies for just about everyone.

1.2 Change

That said, this is still a major new specification, and you should take care implementing it in your workflow. As always, test before adopting such changes in production.

2 Using the 2022 specifications

This chapter describes the changes that will or could influence how you use the Ghent Workgroup specifications or what their result would be in your workflows.

2.1 Variants

When the 2015 specifications were released, only the core group of variants was ready.

In the years after that initial release, variants were released for digital print, sign & display, and packaging. All these releases used similar requirements, but there were still some awkward differences and naming issues.

The 2022 specifications are released with a full set of variants from the start. All the variants are built on the same foundation, which should make things easier for everyone.

2.2 Processing Steps

In the packaging and label market, there is a standard called “Processing Steps” (ISO 19593-1). This standard specifies how to use metadata to identify elements on a page belonging to different processing steps.

The 2022 specification doesn’t make use of processing steps mandatory but makes it possible for PDF files to contain such information. If a PDF contains processing steps, the 2022 specification states that it should be compliant to the ISO standard.

On top of that, the 2022 specification defines the concept of a “Product Type” and identifies which processing steps are required, advised, or not allowed for different product types. These changes apply only to the packaging variants.

2.3 False positives

Traditionally, preflight engines looked at all graphic elements on a page individually, checked their properties, and reported on them if necessary. Sometimes that leads to false positives: is a rich black object that is completely behind another element really going to cause a printing problem?

The 2022 specification allows preflight applications to be smarter. If objects can be determined not to be problematic (because they are invisible, because they don’t overlap other elements…), the preflight application can skip those objects and not report on them.

While not every preflight engine will be able to do this, and doing so is not a requirement of the 2022 specifications, this will in many cases still cut down the amount of false positives encountered in workflows.

2.4 Small changes

2.4.1 Use of spot colors in newspapers

While one spot color used to be allowed for advertisements to be printed in newspaper, in 2022 this is no longer allowed.

2.4.2 Resolution of soft masks

PDF allows using images to define soft masks (a transparency effect). In the 2022 specifications, the image resolution requirements no longer apply to such soft mask images.

2.4.3 Ambiguous spot colors

It's a bad idea to have multiple spot colors in a PDF file where their names are very similar but subtly different. While the Ghent Workgroup has had requirements for this for a long time, these have been refined in 2022.

2.4.4 Ink coverage

The 2022 specification defines two different ink coverage requirements. The packaging variants now use the requirement where ink coverage is calculated for all CMYK and spot colors, while the other variants remain with the requirement where only CMYK colors are checked.

2.4.5 Hidden optional content

In 2022, a new requirement used by the Sign & Display variant enforces that all optional content (technically called "OCGs" in PDF, colloquially often referred to as "Layers") must be visible (and thus must print).

3 Developing against the 2022 specifications

Read this chapter if you're interested in what technically changed to the way the Ghent Workgroup 2022 specifications are defined. You should also read the previous chapter for "content changes"; this chapter focuses on the technicalities

3.1 No more Microsoft Word file

All previous Ghent Workgroup specifications were released as Word documents. Typically, with a list of requirements at the beginning of the document, followed up by variant tables.

This is no longer the case starting with the 2022 specifications. These specifications have been created and are released as a Google Sheet document.

This makes it easier to see what has been implemented and to which variants it is relevant. There is still a PDF document accompanying the specification. Refer to that document to get a description of the Google Sheet document used, and the important points on its internal structure.

3.2 More precise wording

When you refer to the new specification tables, you will notice that a lot more care has been taken to provide technical accurate and precise wording. This was done partly by a clearer distinction between definitions and requirements, and partly by modeling the definitions and requirements closer to the PDF standard document they build on.

In many cases the intention was to clean up the language without modifying the behavior of for example preflight tools. It will still be necessary to evaluate this on a case-by-case basis as you implement the 2022 specifications. You can use the previous chapter to identify those areas where intentional changes were introduced.

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