

Testimony of Duff Johnson to the US Access Board Washington, DC Hearings, March 11, 2015

About Duff Johnson

Duff Johnson has chaired AIIM's US Committee for PDF/UA, the original author of ISO 14289 (PDF/UA), since 2005.

Duff is also Project Leader (together with Microsoft's Cherie Ekholm) for ISO 32000, the PDF specification on which PDF/UA is based.

Duff is Executive Director of the PDF Association, the trade association for PDF software developers, and an independent consultant to companies in the software industry. These remarks are his own, and do not represent the official position of any ISO committee, or of the PDF Association.

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Remarks

Ladies and gentlemen of the US Access Board, thank you for the opportunity to testify before you once again.

I'd like to speak to you today about PDF/UA, the ISO standard for accessible PDF technology.

Since PDF/UA was first published in the summer of 2012, strong interest has generated a wide range of technical resources, supporting products and statements of commitment. These include:

- Software supporting PDF/UA from [at least twelve vendors](#), including a free PDF/UA checker
- A [commitment from Adobe Systems](#), PDF's inventor, to integrate support for PDF/UA into its products
- AIIM's [Mapping to WCAG 2.0 and two Technical Implementation Guides](#) published by the standard's original authors, and freely available from [aiim.org](#).
- The PDF Association's [Matterhorn Protocol and PDF/UA Reference Suite](#), authoritative reference materials freely available from [pdfa.org](#). The DVBS, the German association for blind and partially sighted users, is translating the Matterhorn Protocol for reference in BITV legislation, the German Section 508.
- [Recognition from the Library of Congress](#), which states: "...files that conform to PDF/UA in addition to PDF/A are considered a preferred format for page-oriented content."

PDF/UA's influence is already felt in banking and transactional communications. For example, Bank of America and Capitol One customers may now download accessible PDF versions of their statements from their banking websites. As someone who communicates regularly with the world of PDF software developers, I can assure the Access Board that these sorts of developments would not have occurred without PDF/UA. Developers need the technical specificity of this standard in order to know, unambiguously, whether or not they've done the job right. PDF/UA provides the certainty necessary to investment in accessibility solutions for PDF documents.

I am confident that the Access Board's choice to require PDF/UA conformance for PDF documents will accelerate the development of software and policies ensuring all manner of documents are accessible to all users.

Regarding the specifics of your proposed implementation of PDF/UA, I'd like to make a few brief points.

Dynamic XFA forms, JavaScript and time-based media

Although dynamic XFA, JavaScript and audio/video content appear in a tiny proportion of PDF documents, the volume and use cases are not insignificant. PDF/UA does not focus on these types of content.

Where PDF documents contain these features, therefore, applicable WCAG 2.0 provisions should be met using Sufficient Techniques in addition to PDF/UA conformance. Dynamic XFA PDF documents cannot conform to PDF/UA but can conform to WCAG 2.0 using entirely distinct Sufficient Techniques unrelated to PDF/UA.

Contrast and color

Although PDF/UA refers to WCAG 2.0 on the subject of contrast and color (since these are not PDF-specific subjects), the reference is made in a note rather than normative text). In addition to conformance with PDF/UA, it is probably easiest to simply require that certain types of content trigger applicable WCAG 2.0 Success Criteria.

Relationship with WCAG 2.0

It's entirely correct to use technical standards appropriate to specific content types. A butcher doesn't tell a baker how to get his bread right, and a baker doesn't tell the butcher how to cut meat. WCAG is, quite correctly,

oriented towards HTML/CSS/JavaScript, while PDF documents are (mostly) self-contained and static. Although there's much overlap there are also vital differences. Both technology sets demand treatment on their own terms.

The simplest way to explain the relationship between PDF/UA and WCAG 2.0 is to say that PDF/UA is, for the vast majority of PDF documents, the appropriate Sufficient Technique for conformance with WCAG 2.0. As noted, PDF/UA does not fully address all types of content that may occur in PDF documents. In these cases, mandating specific WCAG 2.0 conforming Sufficient Techniques appropriate to these content types is appropriate in addition to requiring PDF/UA conformance.

PDF/UA's requirements for consuming software

The existing NPRM does not appear to explicitly address the question: what of PDF/UA's enabling requirements for conforming reader and AT software (clauses 8 and 9 of ISO 14289). Does Section 508 apply these requirements (via VPAT or equivalent) to reader and AT software? I believe this is reasonable. Procurement of viewer software that cannot consume tagged PDF documents defeats the point of the regulations. Matching a similar provision regarding WCAG 2.0 in E207.2, on this point I'm recommending a similar requirement for PDF/UA.

Thinking of the future: PDF 2.0

ISO 32000-2 (PDF 2.0), is already a Draft International Standard (DIS), and is very close to the end of its development cycle, with publication expected in the first half of 2016. PDF 2.0 includes powerful new accessibility features such as support for document fragments, new standard structure types such as (emphasis) and other semantics missing from PDF 1.7, support for MathML and use of 3rd party tagsets such as DAISY.

PDF 2.0 implies PDF/UA-2, an update that clarifies language in PDF/UA-1 and specifies accessibility requirements for PDF 2.0's new features. There are no dramatic changes; PDF technology is remarkably stable compared to many other electronic content technologies, but accessibility features in particular are improved in PDF 2.0.

Generalizing the Section 508 rules to require "PDF/UA" generally rather than specifying just "PDF/UA-1" would allow usage to evolve naturally from PDF/UA-1 to PDF/UA-2 as PDF 2.0 replaces PDF 1.7 in the marketplace. This would reduce the potential for confusion, and accelerate uptake of the new features in PDF 2.0 and PDF/UA-2 by software developers who might be otherwise inhibited by the requirement for PDF/UA-1.

It's important to note that PDF/UA is very specific to the file format and conforming processors. PDF/UA does not address interface types (keyboard vs. touchscreen, etc.); which are properly the domain of other standards bodies. PDF/UA simply requires any conforming reader and AT to handle the structures present in the document. In this, PDF is "self maintaining", and is thus unlikely to require updating past PDF/UA-2 for a decade or more.

Try not to prohibit PDF/UA-2

It would be unfortunate if vendors were unable to deliver PDF 2.0's advanced accessibility features to government agencies and users due to a regulatory constraint that effectively prohibits the latest version of the standard. If this circumstance, at least, could be avoided, that would be of great service to industry and users alike.

Accordingly, I ask the Access Board to consider the possibility of referring to ISO 14289 (PDF/UA) in general rather than in terms of specific parts, or to find language that does not appear to require PDF/UA-1 while prohibiting PDF/UA-2, or at the very least, to provide a mechanism by which to address updates in technical standards incorporated by reference in a reasonably (every 4-5 years?) expeditious manner.

In closing

Consistent with the above observations, I propose, in my comments submitted for the record, below, some specific changes to the regulation's text.

I'd like to thank the chair and the members of the US Access Board for the opportunity to comment on this NPRM. As you continue this rule-making process, I'm happy to address any questions you may have.

Response to enumerated questions in the February, 2015 NPRM

QUESTION 15: Why not also allow PDF/UA in this case "as applicable"? Allowing vendors to deliver support documentation in a familiar format may ease potential costs associated with compliance.

OTHER ENUMERATED QUESTIONS: No comments.

Comments and suggestions on the Preamble

V. Major Issues, B. WCAG 2.0 Incorporation by Reference

I believe it is appropriate to reference PDF/UA here in addition to WCAG 2.0. Additionally, I would add a fifth reason, specifically, that adoption of technically specific standards helps drive development of related technologies. Specifically, I would add:

"Fifth, incorporation of PDF/UA's technically-specific requirements for PDF technology, as well as WCAG 2.0's technically-specific requirements for JavaScript and time-based media, directly serves the best interests of Americans with disabilities because such specificity helps software developers unambiguously establish the means of enabling accessible content, accelerating software development."

VIII. Regulatory Process Matters, A.4. Benefits of the Proposed Rule

Since PDF stands for Portable Document Format, it's general best practice to refer to "PDF documents" rather than "PDFs". This should be addressed in the 2nd cell of Table 5.

VIII. Regulatory Process Matters, F. Paperwork reduction act

The estimate given in the 2nd list item under "Average response time" is grossly over-stated for the vast majority of PDF documents. In most cases, users can achieve complete remediation of previously untagged PDF documents in a few (usually less than 10, very rarely more than 20) minutes per page, on average.

The work of setting up documents for conversion to tagged PDF is a matter of user education and training rather than additional time required. With respect to ensuring accessible content, training time scales very well not only in terms of the accessibility of the content produced, but in addition, those trained in the use of authoring tools for accessibility purposes do tend to produce better documents faster in any event.

Suggested changes to the proposed Text of the Rule

The following includes text copied verbatim from the NPRM released on February 18, 2015. Proposed additions or changes are shown with underlined boldface green text. Proposed deletions are shown in ~~red-strikeout text~~.

C102.6 International Standards Organization (ISO)

[1st paragraph not included for brevity]

ISO 14289-1 Document management applications — Electronic document file format enhancement for accessibility — Part 1: Use of ISO 32000-1 (PDF/UA-1), Technical Committee ISO/TC 171, Document Management Applications, Subcommittee SC 2, Application Issues, (2014), IBR proposed for sections C203.1, E205.4 and 602.3-1. The Matterhorn Protocol, a free publication of the PDF Association, identifies all PDF/UA failure conditions, and is an authoritative and informative reference.

Rationale: The indicated changes correctly identify the IBR proposals as they appear in the February 18, 2015 NPRM. In addition to those sections currently listed in C102.6, I propose (See 5.2x, below) that the Access Board add IBR of PDF/UA for sections 502.2, 502.3 and 502.4.

The Matterhorn Protocol is intended for those who cannot meaningfully access (for cost or other reasons) the text of ISO 14289 (PDF/UA). The Matterhorn Protocol provides a clear understanding of the specific terms of PDF/UA conformance by way of identifying failure conditions, and is already in use in software.

C203 Electronic Content

C203.1 General. Regardless of the medium or the method of transmission and storage, electronic content integral to the use of ICT shall conform to Level A and Level AA Success Criteria and Conformance Requirements specified for Web pages, in WCAG 2.0 (incorporated by reference in Chapter 1) or for PDF documents, ISO 14289-1, ~~(PDF/UA-1)~~ (incorporated by reference in Chapter 1). JavaScripts, time-based media, color usage and contrast ratios shall conform to the applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0 (incorporated by reference in Chapter 1).

Rationale: See the suggestion for E205.4 where an identical change and rationale is proposed.

To enhance readability and reduce the potential for confusion, I propose referring to “PDF/UA” consistently, limiting use of the ISO part number to the normative references in C102.6 and E102.6 – the only locations in which the standard’s full name is used.

E102.6 International Standards Organization (ISO)

Advisory E102.6 International Standards Organization (ISO). ~~Formally known as~~ ISO 14289-1:2014, ~~PDF/UA-1 (Portable Document Format, Universal Accessibility)~~ Document management applications — Electronic document file format enhancement for accessibility — Part 1: Use of ISO 32000-1 (PDF/UA-1), ~~this~~ is the International Standard for accessible PDF. PDF/UA provides a technical, interoperable standard for the authoring, remediation and validation of PDF content to ensure accessibility for people with disabilities who use assistive technology such as screen readers, screen magnifiers, and joysticks to navigate and read electronic content. The Matterhorn Protocol, a free publication of the PDF Association, identifies all PDF/UA failure conditions, and is an authoritative and informative reference.

Rationale: As it serves a similar reference function, this text is updated to match C102.6.

E205.4 Electronic Content

E205.4 Accessibility Standards. Content shall conform to Level A and Level AA Success Criteria and Conformance Requirements specified for Web pages in WCAG 2.0 (incorporated by reference in Chapter 1) or, for PDF documents, ~~ISO 14289-1 (PDF/UA-1)~~ (incorporated by reference in Chapter 1). **JavaScripts, time-based media, color usage and contrast ratios shall conform to applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0 (incorporated by reference in Chapter 1).**

Rationale: The example offered in Section V. Major Issues A. Electronic content, makes clear that the Access Board intends to require PDF/UA when PDF documents are used:

*The central principle underlying the accessibility requirement for public-facing content is the notion that federal agencies must ensure equal access to electronic information that they themselves directly make available to the general public by posting on a public fora. So, for example, **if a federal agency posts a PDF version of a recent settlement agreement on its website as part of a press release, that document would need to comply with PDF/UA-1.** [Emphasis added]*

Adding “for PDF documents,” to E205.4 makes clear that use of a PDF document triggers the requirement of conformance with PDF/UA, consistent with the example.

The addition of Guidelines 1.2, 3.2 and 3.3 for specific content types (JavaScript, time-based media) sufficiently addresses the small number of cases (relative to the volume of PDF documents as a whole) in which such content is present. The addition of Guideline 1.4 is in deference to WCAG 2.0’s standardized methodology in an area not specific to PDF technology.

As with the proposed change to C203, above, to enhance readability and reduce the potential for confusion, I propose referring to “PDF/UA” consistently, limiting use of the ISO part number to the normative references in C 102.6 and E102.6 – the only locations in which the standard’s full name is used.

E207 Software

[add following E207.2]

E207.3 PDF/UA conformance

User interface components shall conform to applicable PDF/UA requirements for conforming readers and assistive technology (incorporated by reference in Chapter 1).

Rationale: The ability to use PDF/UA documents depends on consuming software being able to use tagged PDF. Adding this requirement to Section 508 provides clear guidance for those procuring or developing software that displays PDF documents.

504 Authoring Tools

504.2 Content Creation or Editing. Authoring tools shall provide a mode of operation to create or edit content that conforms to all Level A and Level AA Success Criteria and all Conformance Requirements in WCAG 2.0 or, for PDF documents, conforms to PDF/UA (incorporated by reference in Chapter 1) and applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0, for all features and formats supported by the authoring tool. Authoring tools shall permit authors the option of overriding information required for accessibility.

504.3 Prompts. Authoring tools shall provide a mode of operation that prompts authors to create content that conforms to all Level A and Level AA Success Criteria and all Conformance Requirements in WCAG 2.0 or, for PDF documents, conforms to PDF/UA (incorporated by reference in Chapter 1) and applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0. Authoring tools shall provide the option for prompts during initial content creation or when the content is saved.

504.4 Templates. Where templates are provided, templates allowing content creation that conforms to all Level A and Level AA Success Criteria and all Conformance Requirements in WCAG 2.0 or, for PDF documents, conforms to PDF/UA (incorporated by reference in Chapter 1) and applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0, shall be provided for a range of template uses.

Rationale: If conformance with PDF/UA is required then PDF authoring tools must be able to produce PDF/UA-conforming documents. Accordingly, the same clear language specifying conformance with PDF/UA for PDF documents is appropriate here as elsewhere in the Rule. As elsewhere, this suggestion also makes clear that specific WCAG 2.0 provisions apply in PDF documents **in addition to PDF/UA** when specific types of content are present.

602 Support Documentation

602.3 Electronic Support Documentation. Documentation in electronic format, including Web-based self-service support, shall conform to all Level A and Level AA Success Criteria and all Conformance Requirements in WCAG 2.0 or, for PDF documents, conforms to PDF/UA (incorporated by reference in Chapter 1), ~~or ISO 14289-1 (PDF/UA 1) (incorporated by reference in Chapter 1)~~ and applicable Success Criteria within Guidelines 1.2, 1.4, 3.2 and 3.3 of WCAG 2.0.