



PDF Document Accessibility

A Roadmap for Government Organizations

A Whitepaper by
NetCentric Technologies





Introduction: Electronic Documents

The need for documents in everyday life drove some of the very earliest technologies following stone tools; paper, ink and pen.

In the 21st century textual communication takes many forms, including paper. Even so, using physical media to convey documents is slowly going out of style in applications from publishing to records-keeping to invoicing that have used paper for hundreds – or in some cases, thousands – of years.

Electronic documents can take many forms; a replacement for paper is only the first and most obvious. There are documents for many purposes; writing, presenting, sharing and more. It's clear that documents – as distinct from web-pages – are going to be with us for some time.

Why is PDF so Prevalent?

There are dozens of electronic document formats to serve many purposes. Familiar to all; besides the Portable Document Format (PDF) are the common authoring formats developed by Microsoft: DOCX, XLSX and PPTX.

Only PDF is truly synonymous with “electronic documents” because only PDF was designed from scratch with key characteristics that set it aside from any other format and led to PDF becoming ubiquitous:

- 1) Platform-independence. PDF files work on all sorts of operating systems and browsers.
- 2) Precise control over the positioning and appearance of content. PDF pages look the same no matter where or how they are viewed or printed.
- 3) A freely available and usable specification. Since 1993, anyone who could write software could make a PDF file without paying Adobe any royalty.
- 4) Always-and-forever free Adobe and other software deliver a consistent viewing experience whether on Windows, Mac OS, Linux or other operating systems and software.
- 5) The PDF format supports multiple security, authentication, annotation, workflow and other business features that together make the format uniquely useful for a vast range of publishing and business purposes.

PDF files may be deployed on websites but PDF is not inherently a web-based format; it's a document format first, web-content second.

PDF files play a key and growing role in innumerable areas where documents are needed. In almost any setting and in every economic sector, from banking to education to healthcare and insurance and just general-purpose use, PDF is uncontested as the "final-form" electronic document format of choice.



Current Situation facing Government Organizations

The Web has made it possible for people with disabilities to have equal access to the information and services available electronically via the Internet, mitigating or removing many of the barriers they experience in their physical world. In today's knowledge-based economy, access to online information and services is increasingly necessary, not just for reading the newspaper, but for working at all. Governments are facing new and changing accessibility standards, outdated policies, potential legal challenges and a lack of time, tools and resources to address these problems. The results are increased exposure to legal risks and limited compliance with the current regulations at a time when the regulations are poised to become stricter due to the anticipated Section 508 refresh.

Current and Future Accessibility Standards

W3C Web Content Accessibility Guidelines (WCAG) 2.0

<http://www.w3.org/TR/WCAG/>

WCAG 2.0 (ISO/IEC 40500) is the accepted international standard for web content accessibility, defining testable success criteria at levels A, AA, and AAA, with A being the most basic. Most countries base their accessibility standards on WCAG 2.0. W3C also publishes non-normative techniques, including [PDF-specific techniques](#) to assist developers and content authors achieve conformance.

U.S Federal Government Section 508

<https://www.section508.gov/index.cfm?fuseAction=stdsdoc>

The current (2001) Section 508 criteria for web-based technology are based on WCAG 1.0 and is an Amendment to the Rehabilitation Act of 1973. Section 508 is currently undergoing a refresh that is expected to result in a new WCAG 2.0-based standard. Most of the criteria for web-based technology and information are applicable to PDF documents in general terms.

PDF/Universal Accessibility (PDF/UA-1)

<http://www.aiim.org/Research-and-Publications/Standards/Committees/PDFUA>

PDF/UA (ISO 14289-1:2012) is the international standard for accessible PDF technology, including PDF files, PDF readers and PDF-consuming assistive technology. PDF/UA sets clear rules for developers and authors of tagged PDF documents and forms. When implemented by conforming PDF writers, readers and assistive technology, PDF/UA assures an accessible reading and interactive experience. Unlike WCAG 2.0, PDF is entirely specific to PDF technology, and represents a best-practice for applying WCAG 2.0 Principles, Guidelines and Success Criteria to content in PDF format. (See [Achieving WCAG 2.0 with PDF/UA](#))

State and Local Government Specific Standards

In Addition to the Federal requirements, most US states and many local governments have developed accessibility standards for procurement, application development and websites based on WCAG, Section



508 or a combination. These standards vary greatly in their scope and clarity of requirements for compliance as well as the degree of commitment to enforcement.

Policy & Procedures in Addressing Accessibility

Many government organizations follow the time honored practice of placing responsibility for accessibility in the hands of the webmasters. Such a policy dictates that content is created by many contributors but is funneled to the webmasters for final approval and then published to the appropriate web sites. With hundreds of documents being sent to webmasters each day for publication, documents that are in PDF format are not likely to be properly tagged and verified for accessibility, as content authors rarely have the knowledge, skills or tools required. While many webmasters will attempt to tag the PDF documents, the tagging is often unlikely to produce Section 508 or WCAG 2.0 compliant documents, due to lack of training, tools and resources, resulting in many accessibility issues despite the best efforts of the webmaster. In many cases, accessibility is implemented as an after-thought rather than as a part of a methodical process.

Lack of Tools, Training and Resources to Address the Problem

The existing software tools that are available to the typical government webmaster are lacking for creating accessible PDF content. Microsoft Office despite supporting some level of tagging and added accessibility functions in the later versions still does not create Section 508 compliant documents in many cases. Adobe Acrobat Professional is a tool that most webmasters have available to properly tag PDF for accessibility. But even with the improvements in Acrobat Pro XI, the software still does not provide a methodical and comprehensive step-by-step procedure for achieving and verifying compliance with Section 508 or WCAG 2.0. Furthermore, many of the tagging tasks (e.g., for tables and forms) are extremely tedious and require significant expertise. The typical result is that tagged documents are not fully accessible.

Training is another issue as many webmasters have not been formally trained in accessibility standards and how to properly tag and test a document for accessibility.

Finally, in most cases the resources available to tackle the problem are usually insufficient. Few government organizations have the ability to hire, train and equip a dedicated team in each agency to handle document accessibility and properly remediate PDF content prior to publishing on the web sites.

Result is Limited Compliance with the Regulations on many Web Sites

While there are no comprehensive studies that measure and compare the level of compliance with accessibility standards at the various states, it is instructive to consider the experience of the Federal Government which faces similar challenges to other governmental organizations. The Department of Justice has published [a Section 508 report](#) in September 2012 on compliance across the various Federal Agencies. The results of the report are below.



- 11 years after the Section 508 regulations became law just over 50% of agency components had established a general policy to implement Section 508.
- 70% had a Section 508 coordinator, but only 35% had a Section 508 office or program.
- Of agencies with a Section 508 office or program the average staffing level was 2.5 full-time equivalents (FTE) with a median budget of \$35,000.
- Just 40% of agencies provide training to their employees, with Electronic Information Technology (EIT) developers receiving “a little over an hour” of training in accessibility.
- Agencies “...experienced difficulty establishing a mechanism to ensure EIT used in a program or activity receiving federal financial assistance is accessible to persons with disabilities.”
- Very few agencies use specific, applicable requirements regarding procurement, nor do they test vendor’s products for accessibility.

While some government organizations do have published accessibility policies on their web sites, others do not. Many organizations do not have dedicated Section 508 coordinators and training and budget is a problem across all branches of government. The recommendations, proposed by DOJ’s report, for the Federal Government are below and again, they largely apply for many other government organizations.

- Establish policies and procedures for Section 508 compliance.
- Appoint coordinators and establish programs in the office of the CIO or CTO.
- Enhance training by leveraging the US Access Board and GSA’s expertise in accessibility.
- Remind recipients of Federal financial support that Section 504 prohibits discrimination against persons with disabilities and advise them to ensure their websites and other EIT are accessible.
- Ensure both automated and manual testing is used on agency websites.
- Publish website accessibility statements.

The full DOJ report is available here http://www.ada.gov/508/508_Report.htm.

Achieving Document Accessibility

While the responsibility for accessibility varies among government organizations, compliance with accessibility standards resides, in many cases, with the CIO’s office. Furthermore, responsibility often also resides with each individual agency authoring electronic documents. The solution is a combination of policy change, dedication of resources to address the problem and the selection of tools and resources that support the policy enforcement and changes required to ensure compliance.

Focus has been on HTML and CSS Content

Many organizations have focused their accessibility programs initially on their HTML and CSS content, as well as web applications. Portals built around accessible tools and policies developed to ensure that web sites are accessible are the first step and most governments organizations either have addressed the problem or are in the process of moving towards accessible solutions. With PDF content being estimated at as much as 40% of the total content on some government web sites, the focus now needs to be on document accessibility and specifically on PDF.



Now is the Time to Act

The current (2001) Section 508 criteria for web-based technology are based on WCAG 1.0. Section 508 is currently undergoing a refresh that is expected to result in a new WCAG 2.0-based standard. Most of the criteria for web-based technology and information are applicable to PDF documents in general terms. The new Section 508 Refresh is expected to be released sometime in 2014 and it is expected that this will result in many states and municipal governments enhancing their own accessibility laws and regulations to match the anticipated strengthening of the Federal Accessibility Standards. Recent actions by several Federal Agencies support show that enforcement is increasing in anticipation of the new regulations. See <http://www.ed.gov/news/press-releases/civil-rights-agreement-reached-south-carolina-technical-college-system-accessibi> and <http://www.justice.gov/opa/pr/2013/July/13-crt-831.html> as an examples of settlements and agreements in higher education systems.

Solutions for Government Organizations to Document Accessibility

Policy Change- Share the Burden of Accessibility

The current policy of most government organizations is to place the burden of accessibility compliance on the CIO's and webmasters. This policy does not work for the reasons detailed in this document and proven by the lack of compliance on many State and Federal web sites. While it makes sense for overall compliance responsibility to rest with the CIO or webmaster, placing the responsibility for creating accessible content on content creators would likely result in higher levels of compliance, reduced cost and better quality of accessible content. **Accessibility must become part of the authoring process**, if there is going to be any real reduction in the number of inaccessible documents published on government web sites. Once the burden of accessibility is shifted to the creators of the PDF content published on government web sites, then government organizations can look for tools and solutions to address the problem and ensure compliance with the new policy.

Software Tools and Training

Up until recently, the software tools available to address accessibility compliance issues in the document space have been limited. Microsoft Office even in the latest version (Office 2013) continues to create inaccessible PDF documents, and it is an unrealistic (and expensive) notion that content creators are going to have the knowledge to use Adobe Acrobat Professional to remediate and test the tagging of the documents they create for publication. Government organizations need to research the available tools and training solutions now available to verify, correct and create 508 and WCAG accessible PDF documents. Several Federal Government agencies have published recommendations as part of a compliance checking process. For example, US Department of Health and Human Services (HHS) PDF File 508 Checklist which specifies the use of additional tools beyond Adobe Acrobat for ensuring accessible PDF content. See <http://www.hhs.gov/web/508/508myths.html> for an example.



Microsoft Office Documents

One of the primary sources of inaccessible content generated in government for publication is from Microsoft Word and PowerPoint. Microsoft has included the ability to save as PDF in the latest versions of Microsoft Office and has added an accessibility checker in the latest release. But these tools are lacking for many reasons. Specifically, while the best practices that are included in the accessibility checkers look for common problems such as missing alt-text descriptions for images, there are still many accessibility problems when the document is converted to PDF.

The solution is to look for 3rd party tools to allow a content creator with little or no accessibility knowledge or expertise, using Microsoft Office, to create fully accessible and compliant PDF content directly from Word or PowerPoint. Accessibility becomes part of the authoring process and results in fully compliant PDF files that are properly tagged for accessibility. The accessibility verification and repair process is designed to take a minimal amount of time and effort. Knowledge of accessibility is increased as the content author creates more documents.

Government organizations can successfully achieve improved compliance with the accessibility regulations by deploying dedicated solutions to create accessible PDF to all employees who are creating documents for use within government websites and intranets, originating in Microsoft Office.

Fixing existing PDF Documents

Many times, you do not have control of where the PDF document came from. There are multiple tools used in government organizations that create PDF output including the Adobe Creative tools such as InDesign. Complex PDF documents and forms that are created using these tools need to be made accessible via a process called remediation. There are three ways to remediate existing PDF documents to ensure they are accessible and 508 compliant. Adobe Acrobat Professional is primary tool used to tag and fix the tags to ensure that PDF documents are accessible. Much like with the Microsoft products, Adobe has added accessibility tools and checkers to Acrobat Professional to help ensure documents are accessible. What is lacking with using Adobe Acrobat alone to ensure accessibility is the ability to verify and correct PDF documents and certify compliance with accessibility standards such as Section 508 or WCAG.

There are tools now available to ensure compliance with Section 508. These tools are typically an Adobe Acrobat plug-in that allows any PDF document to be tested and corrected for full compliance with Section 508 and other applicable accessibility standards. Such a tool provides powerful methodical processes that help with the tedious work of PDF remediation. Another benefit of these PDF verification and remediation tools is the ability to create a comprehensive page by page, element by element report on accessibility compliance that is accepted by HHS and other Federal Agencies.

Beyond using Acrobat and plug-ins for verification and remediation, many government organizations need to prioritize accessibility compliance today. Often, government agencies have a large number of inaccessible legacy PDF documents. Outsourcing of the verification and remediation services provide an



accurate, comprehensive and cost effective way to achieve compliance with Section 508, WCAG 2.0 and other accessibility standards for such documents. Thus assisting government organizations overcome resource limitations. The important factor is in vetting that the company doing the verification and remediation services is truly an expert in the field and offers guaranteed compliance. There are many examples of government organizations having to have the work done twice due to inexperienced contractors attempting to do remediation work with limited experience. Do your research and look for companies that guarantee compliance, preferably by providing 508 compliance certificates for each document that is remediated.

Discovery and Audit

How do you measure compliance for a department, an agency, or the entire state? The major web accessibility vendors do not offer a product to scan web sites and determine the accessibility of PDF documents. At best, these tools will only tell you how many documents are on your web site and whether they are tagged or not. But just because a file is tagged for accessibility, does not mean the file is 508 compliance and able to be correctly read or navigated using a screen reader. There is one tool on the market that does scan web sites

for accessibility compliance of PDF content, using this tool, a government organization can baseline compliance and measure progress over time. Several Federal Agencies are now using this tool to measure compliance within their organizations and to measure the compliance of their partner's web sites.

File Testing Status		
Metric	Count	%
Number of Files Tested	20	N/A
Tagged Files	12	60.00
Untagged Files	8	40.00
Files Passing All Tested Checkpoints	0	0.00
Files Failing at Least One Checkpoint	17	85.00
Files to be Verified by User	3	15.00
Number of document passing automated checkpoints	2	10.00

Accessibility Training

Finally training is critical to getting the most out of any software tool. From applying best practices when authoring documents to ensuring existing content meets accessibility standards, the principles and practices of ensuring accessibility require some training. Any vendor solution that you select should include the training required to be able to properly use the software tools and train your staff in creating and remediating for accessible documents.





Summary

Government organizations can mitigate the risks associated with Electronic and Information Technology (EIT) accessibility by doing the following:

- 1) Ensure accessibility standards define clear and achievable success criteria. For PDF, consider adopting PDF/UA as the technical application of WCAG 2.0 to PDF. See AIIM's publication, [Achieving WCAG 2.0 with PDF/UA](#) for details on the relationship between the two standards.
- 2) Consider changing existing policy to share the burden of creating accessible content from the CIO/webmasters to the "content creators" while maintaining central control over overall compliance
- 3) Allocate appropriate resources towards the problem of document accessibility including budget allocations for accessibility coordinators, software tools, training and remediation.
- 4) Identify and utilize verification and remediation tools when available, and encourage their development where possible.

About NetCentric

NetCentric Technologies is the leading provider of software tools and professional services enabling government agencies, healthcare, higher education and corporations to meet their obligations for electronic document accessibility, including compliance with Section 508 and WCAG 2.0 AA standards.

NetCentric's CommonLook Suite of software tools enables significant time and cost savings throughout the document production cycle from authoring, to verification, correction and management of PDF documents. NetCentric's CommonLook Services offers the most accurate and highest quality remediation in the industry. CommonLook Service is the only remediation service to provide a comprehensive Section 508 or WCAG compliance certificate for each remediated document.

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