



Section 508 Reference Manual

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USDA Section 508 Reference Manual
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IMPLEMENTING SECTION 508 AT USDA

Section 1. Introduction

1.1 Purpose

This document provides a technical framework for helping USDA agencies and staff ensure that the electronic and information technologies they develop, procure or maintain are accessible to individuals with disabilities, and that they comply with Section 508 requirements. The manual serves as a reference to the law and regulations and includes guidelines, checklists, and technical recommendations to assist USDA agencies and staff offices in meeting their responsibilities under Section 508 of the Rehabilitation Act of 1973, 29 U.S.C. § 794d, as amended.

Section 508 requires that Federal departments and agencies developing, procuring, maintaining, or using electronic and information technology ensure that Federal employees and members of the public with disabilities have access to and use of information and data, comparable to that of Federal employees and members of the public without disabilities.

USDA fully embraces the scope and intent of Section 508 and is actively committed to ensuring that our customers and employees with disabilities have equity in the use of electronic and information technology. Accessibility allows USDA agencies and staff offices to attract and retain the best talent and to maintain a productive workforce. Electronic and Information Technology (EIT) provides the tools that help USDA achieve its goals. Compliance with Section 508 ensures that USDA can include persons with and without disabilities in using EIT tools to further its goals to fulfill its mission. Consequently, compliance with Section 508 contributes directly to effective utilization of USDA's workforce and directly to the accomplishment of USDA's mission, and specifically supports USDA's fifth strategic goal -- to operate an efficient, effective, and discrimination-free organization.

In addition to the contribution of Section 508 compliance to USDA's overall effectiveness in meeting strategic goals, USDA's public channels of communication that involve electronic and information technology also benefit from Section 508's requirement for public accessibility of information delivered through EIT. One example of a specific USDA program that is tightly bound to the Section 508 requirement for accessibility of electronic and information technology to the public is the USDA eGovernment Program. The mission of the USDA eGovernment Program is to make the USDA "electronically available any place, any time ... to transform and enhance the delivery of USDA's programs, services and information. Section 508 has specific requirements to make this

program accessible, so as to include persons with and without disabilities in receiving USDA services. Section 508 focuses both inside USDA and to USDA's external publics in its requirements for accessibility of electronic information.

1.2 Background

This Technical Manual was developed to serve as a resource document to support individual agency and staff office day-to-day operations with respect to Section 508 compliance. In early 2002, a broad cross section of USDA staff, representing all USDA agencies and staff offices, cooperated in a joint working session focusing on USDA's response to the requirements of Section 508, and developing an action plan. At that time, USDA had in place basic processes for Section 508 compliance, under Agriculture Acquisition Regulations (AGAR) Advisory Numbers 49 and 50. The process included Section 508 linkages to Enterprise Management Processes, and included a role for Chief Information Officer in verifying that information technology investment proposals were developed in accordance with the final rule for Section 508 compliance. Many agency IT review boards included Section 508 compliance in their review process. Agency IT architectures explicitly state Section 508 compliance. System development/life cycle management and quality assurance processes all include Section 508 compliance activities. Agency Configuration management or change management boards are instructed to validate Section 508 compliance. Agencies using a total cost of ownership or seat management process include Section 508 compliance within these processes.

Systems Development/Life cycle management. The departmental-level policies to acquire, develop, and maintain EIT and meet Section 508 requirements were integrated as much as possible into standard operation procedures. What was still needed, however, was USDA-wide guidance for more specific policies and procedures to implement Section 508, and to assist agencies and staff offices in better understanding how Section 508 requirements are specifically applied to acquisitions, software development, and maintenance of EIT.

Section 2. Section 508: The Law

2.1 Background

Section 508 of the Rehabilitation Act Amendments of 1998, signed into law on August 7, 1998 (Public Law 105-220), as a part of the Workforce Investment Act of 1998 (see Appendix C for the text of the law), requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they shall ensure that the electronic and information technology allows Federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by Federal employees who are not individuals with disabilities, unless an undue burden would be imposed on the agency. Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a Federal agency, have access to and use of information and data that is comparable to that provided to the public who are not individuals with disabilities, unless an undue burden would be imposed on the agency.

(Reference: Access Board's Final Rule, "Electronic and Information Technology Accessibility Standards" at: <http://www.access-board.gov/sec508/standards.htm>, which is also included in Appendix C).

Section 508 established an administrative complaint process, providing that "any individual with a disability may file a complaint alleging that a Federal department or agency fails to comply with subsection (a)(1) in providing electronic and information technology." The law specified that complaints are to be filed with the Federal department or agency alleged to be in noncompliance, and that the Federal department or agency receiving the complaint shall apply the complaint procedures established under section 504 for resolving allegations of discrimination in a federally conducted program or activity. Individuals may also file a civil action against an agency.

By law, Section 508's enforcement provisions apply only to the electronic and information technology procured on or after June 21, 2001. While Section 508's enforcement mechanisms apply only to procurement, Section 504 of the Rehabilitation Act requires access to Federal programs for persons with disabilities, and both Sections 501 and 504 require accommodation of Federal employees with disabilities (sections 501 and 504). Therefore, Section 508 cannot be used by Federal departments and agencies to avoid responsibilities under Sections 501 and 504 to provide equivalent facilitation or alternative means of access to information for employees or members of the public with disabilities. Section 508 provides specific standards as measures for Federal departments and agencies, but Federal departments and agencies still are required, under Section 504, to provide access to information and programs for persons with disabilities, even in those circumstances where EIT is not

commercially available. If an undue burden claim prevents the procurement of EIT that is accessible, agencies still must provide alternative means for access.

2.2 Definition of Electronic and Information Technology (EIT).

(Reference: <http://www.access-board.gov/sec508/standards.htm>, which is also included in Appendix C)

In the standards published by the Access Board on electronic and information technology, the definition of EIT includes “information technology and any equipment or interconnected system or subsystem of equipment, that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.”

The Access Board defines “information technology” as “any equipment or interconnected system or subsystem of equipment, which is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, hardware and similar procedures, services (including support services), and related resources.”

2.3 Electronic and Information Technology Accessibility Standards (Technical Standards)

Section 508 required the Access Board to develop accessibility standards for electronic and information technology (EIT). The final “Electronic and Information Technology Accessibility Standards (36 CFR Part 1194)” were published in the Federal Register on December 21, 2000.

(Reference: <http://www.access-board.gov/sec508/508standards.htm>, which is also included in Appendix C)

The EIT accessibility standards published by the Access Board include technical provisions for different types of EIT technologies and also include performance-based requirements that deal with the functional capabilities of EIT.

The technical provisions include:

- (1) requirements specific to each type of technology (Subpart B of the Access Board's standards);
- (2) functional performance criteria relating to the functional capabilities of covered technologies (Subpart C); and
- (3) requirements for information, documentation, and support (Subpart D).

Subpart B: The technology-specific provisions address the following areas:

- Software applications and operating systems (1194.21);
- Web-based information or applications (1194.22);
- Telecommunications products (1194.23);
- Video or multi-media products (1194.24);
- Self contained, closed products such as office equipment and kiosks (1194.25); and
- Desktop and notebook computers (1194.26).

Subpart C: While the technology-specific provisions in Subpart B of the Access Board's standards provide the standards for each specific category of product, the functional performance criteria in Subpart C should be used in evaluating whether the product meets Section 508 requirements overall, and also should be used for evaluating technologies or components where no specific requirement is found in the technology categories in Subpart B. These functional criteria were included to assure that the components of electronic and information technologies -- even when individually accessible -- still work together to create an accessible product. The functional criteria address the operation of the product including input and control functions, the operation and access to visual and audible information. These criteria support the ability of people with sensory or physical disabilities to locate, identify, and operate input, control and mechanical functions and to access the information provided, including text, static or dynamic images, icons, labels, sounds or incidental operating cues. For example, one provision requires that at least one mode of operation and information retrieval should be provided that does not require user vision, or that it provides support for assistive technology used by people who are blind or visually impaired. Another provision requires that at least one mode of operation and information retrieval be provided that does not require visual acuity greater than 20/70.

Subpart D: Subpart D deals with access to all information, documentation, and support provided to end users (employees) of covered technologies. At the USDA, this should be considered to include user guides, installation guides for end-user installable devices, and customer support and technical support communications. Subpart D requires that such information must be available in alternate formats upon request at no additional charge. Alternate formats or methods of communication can include Braille, cassette recordings, large print,

electronic text, Internet postings, tele-typewriter for the deaf (TTY) access, and captioning and audio description for video materials.

2.4 Federal Acquisition Regulations (FAR)

In implementing the Access Board's regulations, the FAR incorporated the electronic and information technology accessibility standards (36 CFR Part 1194) into acquisition planning, market research and when describing agency needs. Section 508 uses the Federal procurement process as the mechanism for ensuring that EIT acquired by the Federal government is accessible. The final FAR ruling for implementing Section 508 was published in the Federal Register on April 25, 2001. The effective date, which was 60 days after the published date, was June 25, 2001. (The FAR has been modified since the original publication date, most recently to amend the "sunset" date for the exclusion of micro-purchases to October 1, 2004.)

References: The text of the FAR is available on the web at:

http://www.arnet.gov/far/current/html/Subpart_39_2.html

Appendix E-2 of this document also contains the full text of the FAR, current as of August 25, 2003.

For other than indefinite-quantity contracts, the FAR ruling applies to contracts awarded on or after June 25, 2001. For indefinite-quantity contracts, it is applicable to delivery orders or task orders issued on or after June 25, 2001.

2.5 Exceptions

The FAR considered the following EIT as exceptions, therefore not required to meet the accessibility standards at 36 CFR Part 1194: (See the detailed discussion of these exceptions, included in the Final Far Rule published in the Federal Register, April 25, 2001, in Appendix E-1)

- Micro-purchases, prior to October 1, 2004 (FAC 2001-11, FAR case 2002-012, Section 508 Micro-Purchase Exception, Interim Rule, see: <http://www.arnet.gov/far/ProposedRules/2002-012.pdf>, which is also included in Appendix F)
- EIT for a national security system - any electronic and information technology operated by agencies, the function, operation, or use of which involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapons system, or systems which are critical to the direct fulfillment of military or intelligence missions. Systems which are critical to the direct fulfillment of military or intelligence missions do not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications).

- EIT acquired by a contractor incidental to a contract - provides an exception for electronic and information technology that is acquired by a contractor incidental to a Federal contract. That is, the products a contractor develops, procures, maintains, or uses which are not specified as part of a contract with a Federal agency are not required to comply with this part. For example, a consulting firm that enters into a contract with a Federal agency to produce a report is not required to procure accessible computers and word processing software to produce the report regardless of whether those products were used exclusively for the government contract or used on both government and non-government related activities since the purpose of the contract was to procure a report. Similarly, if a firm is contracted to develop a web site for a Federal agency, the web site created must be fully compliant with this part, but the firm's own web site would not be covered. No substantive comments were received and no changes have been made to this section in the final rule.
- EIT located in spaces frequented only by service personnel for maintenance, repair or occasional monitoring of equipment - products located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this part.
- EIT that would impose an undue burden on the agency.

2.6 Equivalent Facilitation

The Access Board recognized that products could be available that do not meet the Section 508 Subpart B standards, but yet incorporate designs or technologies that provide substantially equivalent or greater access to and use of a product for people with disabilities. (See 36 CFR 1194.5.) This is referred to as "equivalent facilitation."

In the preamble to Section 508, the Access Board elaborates that this provision does not constitute a "waiver" or "variance" from the requirement to provide accessibility, but recognizes that future technologies may be developed, or existing technologies could be used in a particular way that could provide the same functional access in ways not foreseen by these standards. The Board stressed that, in evaluating whether a technology results in "substantially equivalent or greater access," it is the functional outcome, not the form, which is important. The Board offered as one example an information kiosk which is not accessible to a person who is blind might be made accessible by having a telephone handset that connects to a computer that responds to touch-tone commands and delivers the same information audibly. Other examples could include the use of voice recognition and activation as potentially reasonable substitutes for some or all keyboard input functions. In effect, compliance with the functional performance criteria of §1194.31 is the test for equivalent facilitation.

Recognizing the concept of equivalent facilitation, solicitations for EIT must be drafted with provisions that products offering equivalent facilitation are

considered along with those that strictly meet the technical provisions of Subpart B of the standards.

2.7 Commercial Availability of Products

As required by the FAR final rule (see Appendix E), when acquiring commercial items, an agency must comply with those accessibility standards that can be met with supplies or services that are available in the commercial marketplace in time to meet the agency's delivery requirements. The requiring official must document individual provisions that cannot be met due to non-availability, with a copy to the contract file. If products are available that meet some, but not all applicable standards, agencies cannot claim a product as a whole is non-available just because it does not meet all of the standards.

2.8 Undue Burden

Undue burden, as defined in Section 508, § 1194.4, means a "significant difficulty or expense." In determining whether an action would result in an undue burden, an agency shall consider all agency resources available to the program or component for which the product is being developed, procured, maintained, or used.

Section 508(a)(1)(B) specifies that when development, procurement, maintenance, or use of electronic and information technology that meets the standards published by the Access Board would impose an undue burden, the Federal agency shall provide individuals with disabilities with the information and data by an alternative means of access that allows the individual to use the information and data. The agency is responsible for documenting why and to what extent compliance with each provision in the EIT accessibility standards (36 CFR part 1194) creates an undue burden. In addition, the agency must document the "alternative means" for individuals with disabilities to access the information and data.

When acquiring commercial items, an undue burden determination is not required to address individual standards that cannot be met with supplies or services available in the commercial marketplace in time to meet the agency delivery requirements. If no product is commercially available that both meets agency requirements and also meets the requirements of Section 508, "agencies cannot claim a product as a whole is not commercially available because no product in the marketplace meets all the standards. If products are commercially available that meet some but not all of the standards, the agency must procure the product that best meets the standards." (Section 508, 1194.2(b)). Under these circumstances, the agency must consider both the core business requirements for the procurement and also the extent to which the product or products under consideration meet Section 508 accessibility standards. The product or service that "best meets the standards" could be categorized as

commercially not available since it did not meet all of the standards. If the product or service that is being acquired is less compliant with the Section 508 accessibility standards than other products available in the commercial marketplace, it would have to be documented that it is an undue burden to purchase the more compliant product or service.

2.9 Agency Reporting Requirements

Section 508 requires the Attorney General to report every two years to the President and the Congress on the state of Federal department and agency compliance with the requirements of Section 508, including actions regarding individual complaints under the law. Section 508 also requires each head of a Federal department or agency to provide to the Attorney General such information as the Attorney General determines is necessary to conduct the biannual evaluations. (Reference: <http://www.usdoj.gov/crt/508/>)

2.10 Other Related Sections of the Rehabilitation Act

Section 501. Employment of Persons with Disabilities.

Section 501 of this act prohibits discrimination on the basis of disability in Federal employment and requires Federal agencies to establish affirmative action plans for the hiring, placement, and advancement of people with disabilities in Federal employment.

Section 504. Nondiscrimination under Federal Grants and Programs.

Section 504 prohibits discrimination based on disability in federally funded and federally conducted programs or activities in the United States, including employment programs.

Section 505. Remedies and Attorney's Fees.

Section 505 provides that the remedies, rights and procedures set forth in title VI of the Civil Rights Act of 1964 shall be available to any person alleging a violation of Section 504.

Section 3. USDA Section 508 Policies and Procedures

This Section includes current Departmental Policy and Administrative Regulations concerning the Department's Acquisition of Electronic and Information Technology, and procedures for complying with Section 508 and addressing exceptions.

3.1 Departmental Section 508 Policies

USDA has established USDA-wide policies relating to the implementation of Section 508 through Departmental Regulation 4030-1, and through Agriculture Acquisition Regulation (AGAR) Advisories, specifically, AGAR 49 and 50.

While all of these references can be located among departmental documents, this section references these regulations and advisories in a convenient reference within one document. As these regulations and advisories are updated, these references may also be updated. For convenience, the entire text of these references is included in Appendix B.

3.1.1 Policy for Acquisition, Maintenance and Development of EIT (AGAR Advisory 53)

See: http://www.usda.gov/procurement/policy/advisories_x/agarad53.htm
(See full text at Appendix B-2)

3.1.2 Enforcement and Complaint Policy

As the Equal Employment Opportunity Commission summarized in the Federal Register Notice, published August 6, 2003: (Source, Federal Register on line: <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/03-19986.htm>)

"The amendments to section 508 of the Rehabilitation Act of 1973, 29 U.S.C. 794d, which took effect in 2001 provide that each federal agency must ensure that the electronic and information technology it develops, procures, maintains, or uses is accessible to individuals with disabilities who are federal employees or applicants, or members of the public seeking information or services from the agency. Section 508 authorizes individuals to file administrative complaints and civil actions against an agency, limited to the alleged failure to procure accessible technology. The statute requires federal agencies to process section 508 complaints according to the same complaint procedures used to process section 504 complaints. See 29 U.S.C. 794d(f)(2)."

Therefore, the existing EEO complaint process established by USDA, its agencies and mission areas, is applicable to the administrative processing of Section 508 complaints.

USDA Complaint Processing Procedures:
<http://www.usda.gov/directives/files/dm/DM4330-001.htm>

The USDA Equal Employment Rights policy is posted at:
<http://www.usda.gov/cr/Secretarys Policy.htm>

The USDA EEO complaint procedure is posted at:
<http://www.usda.gov/cr/Employment How to File a Complaint.htm>

The following statement summarizes the USDA policy and the basic procedures, and is representative of the policy statement in wide use by USDA agencies and mission areas (Source Agricultural Marketing Service's (AMS) EEO policy page, at <http://www.ams.usda.gov/eeostatement.htm>):

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal Opportunity provider and employer.

Each of the USDA Agencies and Mission Areas has posted policy statements and many have posted specific complaint procedures for equal employment opportunity complaints.

Representative samplings of these references are included below:

- Agricultural Research Service (ARS), at:
<http://www.ars.usda.gov/aboutus/docs.htm?docid=1518>
- Food and Nutrition Service (FNS), at
<http://www.fns.usda.gov/cr/teeocomplaint.htm>.
- Foreign Agricultural Service (FAS), at:
<http://www.fas.usda.gov/admin/eoo.html>
- Natural Resources Conservation Service (NRCS), at:
<http://plants.usda.gov/eoo.html> (policy, as shown on "Plants" website), and
http://www.nrcs.usda.gov/about/civilrights/eoo_complaint_process.html
(complaint procedures)

3.1.3 Web-based Intranet and Internet Information and Applications Accessibility Policy

Web Accessibility Policy for Intranet and Internet Pages. USDA has adopted a policy to make its web sites accessible to all USDA customers and employees, and agencies and mission areas have announced this policy through a link on home pages. (See the example, below, from the USDA Home Page, at <http://www.usda.gov/accessibility.htm>)

Accessibility Statement

(Source: <http://www.usda.gov/accessibility.htm>)

USDA is committed to making its web sites accessible to all USDA customers and employees. All of the agency web sites are undergoing review and redesign as necessary to ensure that they meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973.

Many of our web sites currently meet the Section 508 accessibility standards. Furthermore, USDA continues to work on making all web sites accessible. Thank you very much for your patience through this redesign process. If you have any comments or suggestions for improvement, please contact the Web Master of this page.

Contact Information: xxxxx.xxxx@usda.gov

Similar language appears on many USDA agency and mission area web pages, under a link for "Accessibility Statement." With the inclusion of a contact email address, this statement can be an effective tool to gather comments and feedback about the level of accessibility of an overall web site, and specific pages.

3.1.4 Accessibility Policy for Public Documents

The accessibility of public documents to all persons is one of the cornerstones of our form of government. Document accessibility policies should be clearly stated on home pages and also on pages listing document resources.

Below is a model statement on accessibility policy for public documents. Because there is less and less distinction between web pages and documents, it is useful to combine both web and document accessibility into a common policy statement. Such a statement might be considered for use as an enhancement to accessibility policy statements, as currently posted on USDA web pages.

Web Page and Document Accessibility Policy (Model Statement)

At the United States Department of Agriculture, we are committed to making all of our documents on our World Wide Web servers accessible to everyone. We are continually reviewing our web sites and changing pages to ensure that they

meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973.

Many documents on our web pages are in ASCII or HTML format, generally accessible to people who use screen reading software and to those with other vision or mobility impairments. We typically use Hypertext Markup Language (HTML) to create pages and documents that are accessible to all people, and we follow Section 508 standards in doing so.

We also have a large number of documents in Adobe Acrobat PDF (Portable Document Format) format, and currently this format is not compatible with some screen-reading software. However, there are significant improvements in the accessibility of PDF documents, and Adobe's accessibility web page (<http://access.adobe.com/>) has more information about accessibility initiatives and products.

If you have difficulty accessing one of our web pages or documents, or if you have suggestions for how we may improve our accessibility, please send an e-mail to xxxx.xxxxx@usda.gov. If your problem is a broken link, a link that goes to the wrong page, or other technical problems, please email the webmaster at xxxx.xxxxx@usda.gov.

OCIO recommends that agencies consider the following points in formulating document accessibility policy statements:

- (1) Include language that refers to people with all types of disabilities, while avoiding reference to only specific disabilities.
- (2) Regarding PDF documents, avoid referring to specific document conversion/accessibility tools, so that your PDF accessibility information does not become quickly outdated. It is useful to refer readers to the Adobe website, <http://access.adobe.com/>, for the most current status of PDF accessibility.

3.1.5 Policy for Accessibility of Web Content and Documents for Employees

Differences Between Document Accessibility for External Publics and USDA Employees. Since there is little control over the assistive devices and the applications software in use by the general public, accessibility can best be provided through HTML, text, and, PDF documents. However, for internal audiences (employees), where known assistive technologies are in use, word processing documents, spreadsheets, and RTF formatted outlines of Microsoft (tm) PowerPoint (tm) presentations are significantly more accessible with their assistive technologies than text or HTML documents.

Below is a model web page and document accessibility policy statement for internal employees:

Web Page and Document Accessibility Policy for Employees (Model Statement)

At the United States Department of Agriculture, we are committed to making documents and information equally accessible to all employees, including employees with disabilities. To ensure the accessibility of intranet web sites and web pages, we hold these web sites to the same strict standard for accessibility as we have established for the public access to our internet web sites, and are continually reviewing our web sites and changing pages to ensure that they meet or exceed the requirements of Section 508 of the Rehabilitation Act of 1973, and to remove accessibility problems. We encourage employees who find accessibility issues with intranet pages to email the webmaster, or email the Section 508 coordinator for their agency or mission area. A list of coordinators with their email contact information may be found at:

<http://ocio.wip.usda.gov/irm/508/mem508.html>

We are also committed to the accessibility of documents and publications distributed for general use within USDA for USDA employees, as well as USDA's departmental regulations, notices, manuals, and Secretary's memoranda, and also the content of emails distributed to employees. To facilitate accessibility, we are committed to not only meeting the requirements of Section 508 of the Rehabilitation Act of 1973, amended, but also to ensure that the format and content enhance accessibility. We encourage employees who find accessibility issues with internal documents and emails to email the author or issuing office, or email the Section 508 coordinator for their agency or mission area. A list of coordinators with their email contact information may be found at:

<http://ocio.wip.usda.gov/irm/508/mem508.html>

For an internal employee document accessibility policy that concentrates on the use of word processing, spreadsheet, emails and RTF formatted PowerPoint files, to be effective, attention must be given to the content and format of these documents. Section 9, Technical Approaches to Ensuring Accessibility of Documents, can serve as a foundation for accessible document creation, and describes the major barriers that can be created by the authors of office documents, and how to avoid them.

3.2 Departmental Procurement Regulations: AGAR 49 & 50

Two Agriculture Acquisition Regulation (AGAR) Advisories serve as the foundation for implementation of Section 508:

- Agriculture Acquisition Regulation (AGAR) Advisory 49 (November 25, 2002), covers the implementation of Section 508 of the Rehabilitation Act of 1973, as

amended, and includes in one place a set of working tools to implement Section 508 at USDA

- AGAR Advisory 50 (December 31, 2002), addresses the Section 508 requirements (and exception from those requirements) for purchase card users.

These advisories are available at the following web sites, and are also included in Appendices B-3 and B-4 of this document.

AGAR 49: http://www.usda.gov/procurement/policy/advisories_x/agarad49.htm

AGAR 50: http://www.usda.gov/procurement/policy/advisories_x/agarad50.htm

3.3 USDA Procedures

Current procedures that apply to implementation of Section 508 at USDA are included in AGAR 49 and 50, referenced above. The following provides a reference to specific procedures, and where these procedures are available:

3.3.1 Procedure: Procedures for the Acquisition, Maintenance and Development of EIT

References, Comments: AGAR Advisory 49, included as Appendix B-3, and available on the web at http://www.usda.gov/procurement/policy/advisories_x/agarad49.htm, covers the acquisition of EIT, but does not specifically address the maintenance and development of EIT. Maintenance and development is addressed in AGAR Advisory 53, included as Appendix B-2.

3.3.2 Procedure: Procedures for Filing To Support a Back Office Exception for Procurements

References, Comments: See AGAR Advisory 49, attachment 3, in Appendix B-3.

3.3.3 Procedure: Procedures for the Use of Commercial Non-Availability Determination for Procurements

References, Comments: See AGAR Advisory 49, attachment 2, in Appendix B-3

3.3.4 Procedure: Procedures for the Use of Undue Burden for Procurements of EIT

References, Comments: See AGAR Advisory 49, attachment 1, in Appendix B-3.

Informal "Undue Burden" Process. The following informal procedures can help requiring officials properly document why the procurement of EIT that complies with Section 508 poses an "undue burden" for the agency:

- Follow the AGAR Advisory 49 during acquisition planning and market research. Documentation of the determination is essential.
- Document the market research, the levels of compliance each product or service provides, costs of each product or service, and methodology of installing each product or service. If it is determined that complying with Section 508 would adversely affect your agency because of a significant expense, document this as well, including an estimate of the cost that would be incurred, and the relationship between this cost and the overall resources available.
- Ensure project or program manager is heavily involved.
- Involve agency/mission area Section 508 Coordinator.
- Involve agency Chief Information Officer.
- Involve agency budget officer if an agency considers a product or service is an extraordinary expense.
- Involve USDA Section 508 Coordinator in an advisory capacity and to provide clarity.
- Involve agency Office of the General Counsel liaison for legal interpretations and to advise on actions.
- Involve Office of Civil Rights for Section 504 compliance issue when a procurement will not meet Section 508 requirements and an undue burden is claimed.
- Ensure that documents support the claim.
- Obtain approval from an executive manager such as the Deputy Administrator for Management.
- Notify USDA Chief Information Officer, the Assistant Secretary for Civil Rights, the General Counsel of an “Undue Burden determination.”

3.3.5 Procedure: Procedures for the Development of In-House Software and Web Applications

References, Comments: See [Section 508 1194.21](#)

3.3.6 Procedure: Procedures for Filing an Undue Burden for In-House Developed or Maintained EIT

References, Comments: See AGAR Advisory 49 provisions, attachment 1 covers these procedures for external applications; and which can be used for internal in-house developed or maintained EIT, as well.

Section 4. Roles and Responsibilities

4.1 USDA CIO

The Chief Information Officer (CIO) has primary responsibility for the supervision and coordination with the Department of the design, acquisition, maintenance, use, and disposal of information technology by USDA agencies, and for monitoring the performance of USDA's information technology programs and activities, and for assuring that USDA information management is consistent with Federal requirements concerning paperwork reduction, information security and privacy.

(Source: http://www.ocio.usda.gov/it_01_cio.html)

The CIO is also the principal officer in the Department charged with managing the implementation of Section 508 electronic and information technology standards in the Department. In this role, the CIO manages all government-wide activities, correspondence and reporting to the General Services Administration, Office of Management and Budget, and the Department of Justice concerning Section 508, and the Department's performance under Section 508.

The CIO in collaboration with the Director of Procurement establishes the requirements within the Department for acquiring electronic and information technology (EIT) and the CIO's oversight includes both approving IT investments and monitoring and evaluating the performance of these investments (see AGAR Advisory 53, Appendix B-2). *Requirements include USDA's implementation of Section 508.*

The CIO also has overall management oversight of the Procurement Tracking System.

As a principal member of the USDA Section 508 Coordination Team, the Office of Chief Information Officer (source: <http://ocio.wip.usda.gov/irm/508/chart508.html>):

- Advises the Secretary and USDA on matters pertaining to the implementation of Section 508;
- Works closely with the agencies to ensure that electronic and information technology is accessible to persons with disabilities;
- Updates the SACED on USDA's Section 508 accomplishments;
- Develops a critical factor specifically related to accessibility in the capital planning and investment control process;
- Works with Team Members to develop accountability checklists to assist USDA mission areas and agencies with Section 508 implementation;
- Reports to the Secretary on USDA Section 508 compliance biennially; and
- Develops the final agenda for Team meetings.

4.2 Agency Heads and Mission Area Representatives

Agency Heads and Mission Area Representatives are responsible for ensuring that the electronic and information technology that they procure, develop, or maintain is accessible to employees and members of the public with disabilities, and that the electronic and information technology complies with the standards of Section 508.

Agency Heads and Mission Area Representatives can execute this responsibility through:

- developing and maintaining plans for compliance for the electronic and information technology they procure, develop, or maintain,
- providing the resources and budgets necessary to assure compliance with Section 508 within their areas of responsibility.
- providing representatives to gather and report information for the Secretary's biennial report to the Department of Justice on the status of Section 508 compliance and the extent that electronic and information technology in the agency or mission area is accessible to persons with disabilities.

4.3 Section 508 Coordination Team

The Section 508 Coordination Team (see: <http://ocio.wip.usda.gov/irm/508/mem508.html>) reports to the Office of the Chief Information Officer (OCIO), and provides analysis and recommendations concerning the implementation and enforcement of Section 508. The Team assists USDA agencies and advises the OCIO in determining the proper course of action where an agency proposal falls outside of the bounds of Section 508.

The goal of the Team is to advise the OCIO and to ensure systematic accountability for the accomplishment of Section 508 requirements in the Department. The work of the Team will be supportive of the Secretary's goal to make USDA a model employer.

The Section 508 Coordination Team has the following duties:
(Source: <http://ocio.wip.usda.gov/irm/508/chart508.html>)

- Develop a plan to identify needs for accessible systems and adaptive technology and identify IT deficiencies that impact performance of persons with disabilities in current and prospective IT systems;
- Advise agencies of the requirement to integrate Section 508 into their IT capital plans, budget plans, and strategic plans;

- Participate in monitoring, measurement, and disclosure activities including usability testing and priority setting;
- Coordinate response to Department of Justice Section 508 surveys;
- Develop a recommended list of sources of education and training for key personnel within the department related to Section 508 implementation;
- Recommend a policy on implementation and enforcement
- Publicize the existing complaints process (per EEOC Register Notice, published August 6, 2003);
- Provide opportunity for suggestions and feedback from USDA internal and external customers, including persons with disabilities; and
- Develop web page for information sharing on the OCIO Intranet.

Individual members of the Section 508 Coordination Team have the following roles and responsibilities (responsibilities of specific team members are listed in the Section 508 Coordination Team Charter, at <http://ocio.wip.usda.gov/irm/508/chart508.html>):

- To coordinate and report on the efforts of their agencies, offices, or mission areas to comply with Section 508, and
- To work closely with all agency legal, technical and specialty experts in their organization to ensure implementation of Section 508.

The following offices have a special advisory role in their membership in the Section 508 Coordination Team:

- Office of the Chief Information Officer (OCIO)
- TARGET Center
- Office of Procurement And Property Management (OPPM)
- Office of Civil Rights
- Office of Human Resources Management
- Office of The General Counsel
- Office of Communications
- Office of Inspector General
- Secretary's Advisory Committee For Employees With Disabilities (SACED)

4.4 Requiring Officials

Consistent with Federal Acquisition Regulations, the "Purchaser/Requestor" or "Requiring Official" -- the person who generates the request for or specifies the electronic and information technology product or service to be acquired, developed or maintained -- must ensure that the acquisition of EIT products and services meet the Section 508 EIT accessibility standards, unless an exception applies (see the FAR, at Appendix E).

The Requiring Official/Requestor must conduct market research to find those products or services meeting the Section 508 standards. The market research stage is that part of the procurement process during which the agency determines both whether commercial EIT will be available in time to meet the need specified by the program or requesting official and whether providing conforming EIT would be an undue burden. For the purpose of these determinations, the determining official is the requiring official.

The market survey results are conveyed with and in the statement of work. Tools for documenting the market research and establishing whether any of the following may be applicable to the acquisition are provided in AGAR Advisory 49 (see: http://www.usda.gov/procurement/policy/advisories_x/agarad49.htm, also included in Appendix B-2). They include guidelines for preparing:

- An undue burden determination
- An unavailability determination (i.e., conforming products or services are not commercially available)
- A determination that the requirements in Federal Acquisition Regulation (FAR) 39.203 do not apply (i.e., it is excepted from the FAR requirements)
- A determination that the requirement is for parts for which no standard exists, or
- A determination that the requirements are 508 compliant

4.5 Procurement Officials/Contracting Officers

The Contracting Officer must review statements of work and purchase requests to ensure that they include the applicable requirements for Section 508 compliance. The Contracting Officer must ensure that solicitations for electronic and information technology include a clear statement of the responsibilities vendors or service providers have in supplying products or services that conform to Section 508 standards.

The Contracting Officer must include in the contract file:

- Vendor-provided documentation relating to conformance of the offered products and services with Section 508 standards (usually in the form of a Voluntary Product Accessibility Template, or VPAT, statement).
- Documentation from the requestor/requiring official regarding undue burden or non-commercial availability determination.
- If “significant difficulty or expense” causes the requestor/requiring official to determine that conforming to Section 508 standards present an undue burden in the acquisition, an explanation of the “alternative means” for access to the same information should be included in the procurement file.

4.6 Software and Web Application Developers, and Webmasters

Software and web application developers must ensure that their applications are planned and developed, in conformance with Section 508 EIT Accessibility

Standards. Because addressing accessibility requirements early in the development cycle can facilitate accessibility and compliance with Section 508 standards much more effectively than modification of software and web pages late in the development cycle, developers have a special role in ensuring that their products conform to Section 508 standards.

Developers and webmasters should use the software and web accessibility checklists referred to in Sections 8 and 9 of this document as a guide to the technical issues to be addressed in software and web page and web application development. In addition, when possible to do so, it is exceptionally useful to test products and web pages with representative assistive technologies, **during the development process**. For example, developers may download a demonstration version of a screen reading program, such as JAWS (from http://www.freedomscientific.com/fs_downloads/jaws.asp), to use in testing the usability of the application with screen reading software.

To assist web developers and webmasters in assessing whether web pages and applications conform to Section 508 standards, commercial tools are available that perform automated, as well as assisted evaluations of web pages. Two examples of commercial tools include SSB Technologies' "Infocus" (see: <http://www.ssbtechnologies.com/>) and Crunchy Technologies' "PageScreamer" (see: <http://www.crunchy.com/tools/index.html>). Other tools are also available, without cost, to test and verify web pages. These include Bobby (<http://bobby.watchfire.com/bobby/html/en/index.jsp>), and A-Prompt (<http://aprompt.snow.utoronto.ca/>). In addition, some web development tools incorporate validity testing for accessibility into their development products. For an example of this, see Dreamweaver (<http://www.macromedia.com/macromedia/accessibility/mx/dw/>)

While commercial tools can help in technical evaluation of underlying coding of web pages, they cannot assure usability and accessibility. Consequently, it is helpful to consider use of assistive technologies to test usability and accessibility, to always test for usability from the keyboard alone and without the use of a mouse, and to work with persons with disabilities in evaluating the usability of web pages.

Section 5. Performance Measures

Performance measures should be focused on the goals to be achieved in ensuring Section 508 compliance and accessibility of electronic and information technology. To actually measure performance, these goals need to be translated into measurable elements by which performance can be gauged. Overall guidance on creating performance metrics is included in http://www.feapmo.gov/resources/fea_prm_release_document_rev_1_vol_2.pdf.

In addition, in the early USDA working group discussions, the following types of performance measures were proposed. These can be used as a starting point for a more comprehensive set of Section 508 performance measures to be used in the Department:

- Reaffirm Section 508 responsibility in individual performance elements.
- Top 20 Internet sites in current fiscal year, and level of compliance for each.
- Top 20 Intranet sites in current fiscal year, and level of compliance for each.
- The extent to which applicable Section 508 technical provisions are included in statement of work, task orders, and contracts.
- Number of EIT systems developed/procured after 6/25/2001, and number of those that were Section 508 compliant.
- Number of internal and external formal 508 complaints received since 6/25/2001.
- Compliance with training requirements (i.e., number trained).
- Undue burden requests – approved and denied.

In addition to being useful for internal performance reviews, many of these same performance measures may also be used in biennial reporting to the U.S. Department of Justice on USDA's Section 508 compliance.

For a set of Section 508 performance measures to be effective as a tool within USDA, periodic (e.g., at least annual) internal performance reporting requirements should be established at the appropriate mission area and agency levels.

Section 6. Training

This section provides a framework for training all the various participants in developing, implementing, and using the department's EIT, including suggestions for content and delivery.

USDA agencies should ensure that their personnel receive the appropriate training and demonstrate appropriate levels of proficiency for their areas of responsibility.

The General Services Administration developed several online and CD training modules that can be accessed at:

<http://www.section508.gov/index.cfm?FuseAction=Content&ID=5>.

The online modules include training for:

Designing Accessible Websites

Buying Accessible EIT (Requiring Officials and Contracting Officers)

Section 508 Coordinators (Departmental and Agency level)

Accessible Conferences

Accessible Video and Multimedia

Additional Accessibility and Usability Concerns: Electronic Forms and E-Mail

Section 508 Awareness

The following section will provide guidance on developing or obtaining comprehensive training to address all areas of Section 508.

6.1 Web Development

Targeted audience: Web developers and content managers with a detailed knowledge of web development and html coding.

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Student should gain a detailed understanding of each technical standard of 1194.22 and how it is applied to web content design. Examples of how to ensure conformance to each technical standard should be provided.

Students should receive an introduction into web accessibility testing techniques.

Content for testing techniques should include an introduction to web testing tools including coverage of strengths and weaknesses for each tool.

6.2 Software Development

Targeted audience: Software developers or managers of development efforts.

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Student should receive a detailed understanding of each technical standard of 1194.21 and how it is applied to client server software applications.

Examples of proper coding techniques should be provided and explored for various development environments.

Students should be introduced to various assistive technologies used to test software applications for accessibility.

Testing techniques for each technical standard should be discussed in detail.

6.3 Procurement

Targeted audience: Procurement or contracting officers, IT managers or acquisition personnel.

Course Objectives:

Participants should gain detailed knowledge of the requirements for Federal Agencies regarding Section 508 compliance and how the changes in the Federal Acquisition Regulation (FAR) impact the requirements for EIT procurements.

Students should explore in detail agency procedures for completing market research.

Training should include techniques to evaluate vendor representation of technical conformance including evaluating Voluntary Product Accessibility Template. (VPAT)

6.4 Support Staff

Targeted audience: Support Staff

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Training should include techniques in obtaining and evaluating prospective company/products VPAT (Voluntary Product Accessibility Template).

Participants should gain an understanding of what is required for market research and how to ensure that the product conforms to the 508 standard.

6.5 Telecommunications

Targeted audience: Telecommunications staff

Course Objectives:

Participants should receive a comprehensive overview of each of the technical standards of Section 508 1194.23 as it related to telecommunications.

Content should include barriers faced by individuals with disabilities when accessing telecommunications equipment.

Topics of discussion should include TTY description and demonstrations, voicemail and IVR accessibility, caller id functions, etc.

6.6 Communications/Public Affairs

Targeted audience: Media content developers

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Student should gain a detailed knowledge of Subpart D. Information, Documentation and Support.

Student should gain a detailed knowledge of Subsection 1194.24 Video and Multimedia products.

Participants should gain knowledge of developing and producing media material in accessible formats.

Discussions of accessible formats should include close captioning, audio description, low bandwidth solutions.

Topics should include discussion of accessible formats of public materials.

6.7 Help Desk Staff

Targeted audience: Help desk staff and managers

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Topics for discussion should include:

- introduction to various types of disabilities and barriers that are faced when accessing EIT,
- discussion and demonstration of various assistive technologies,
- overview of systems requirements,
- troubleshooting techniques,
- and tips on interacting with people with disabilities.

6.8 Disability Employment Program Managers

Targeted audience: Disability Employment Program Managers

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Participants should gain an understanding of each of the Rehabilitation Act sections. 501, 504, 505, 508.

Topics of discussion should include an examination of Section 508 and Section 504 and how they interact.

6.9 Requiring Official Training

Targeted audience: Requiring Officials, contract officers or any employee that seeks to purchase EIT.

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

After completion of this course students should be able to:

Describe briefly the history of section 508.

Identify the purpose of section 508.

Identify the purpose of sections 501 and 504.

Explain the requirements of the standards for section 508 as they pertain to electronic and information technology (E & IT).

Explain how section 508 impacts the Federal Acquisition Regulation (FAR). Describe how the FAR updates impact E & IT procurement.

6.10 IT Personnel

Targeted audience: IT support personnel including network, engineering, and all IT staff.

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Discussion of how Section 508 impacts the integration of accessible technology into the Agency IT infrastructure.

6.11 Civil Rights

Targeted audience: Human Resources and Civil Rights Personnel, Managers

Course Objectives:

Participants should gain an understanding of the basics of Section 508 of The Rehabilitation Act of 1973, as amended.

Participants should gain an understanding of each of the Rehabilitation Act sections. 501, 504, 505, and 508.

Topics of discussion should include an examination of Section 508 and Section 504 and how they interact.

Students should review the section 508 complaint process.

Section 7. Application Accessibility Guidelines and Testing Procedures.

In the course of testing applications for accessibility, it is useful to have operational guidance for testing. The purpose is to provide testers with specific methods to use for testing and to show testers what they should be looking for to meet Section 508 requirements. Many current tools (Infocus, Bobby, etc.) really only apply to web pages and web applications. Testers and evaluators often feel, mistakenly, that Section 508 compliance testing has to be much more demanding and time consuming (and complicated) than it really turns out to be. The testing strategy proposed below is intended to serve as a working approach to evaluate accessibility against Section 508 standards without requiring a technical background in accessibility or assistive technology.

Hopefully, the approach discussed here should expedite applications testing and review and, at the same time, provide more realistic assessments of the accessibility of the application, and should be helpful in pointing out problem areas. At the same time, this testing strategy focuses directly on Section 508 compliance elements, as publicly available from the Access Board and in this document.

Introduction. This section describes specific techniques for evaluating whether software applications meet Section 508 requirements. For reference, see the Access Board's web site:

<http://www.access-board.gov/sec508/508standards.htm>, then click the link for "Text"

By including testing with assistive technology software, the testing described here will also help to evaluate whether the software application is usable by persons with disabilities.

Summary

The techniques are:

- Run the application.
- Put the mouse aside and do not use it during any of the testing.
- Use the keyboard alone to navigate through the entire application and note where this does not work.
- With every navigation keystroke, watch the screen to ensure that there is a visible focal point that moves with each navigation keystroke, moving among all the pieces of information on the screen, and note where this does not work.
- Check to make sure that accessibility aids (e.g., "StickyKeys" and menu font enlargement) still work when the application is running, and note if this does not work.

- Test the application with a screen reading program to ensure that the application provides sufficient information to the screen reading program to be usable, and note where there are usability problems.

In the material that follows, this short summary is explained in more detail. The techniques described are simple to use, and produce results that are consistent with repetitive testing by any tester. In other words, the results are not subjective and the testing and its results may be easily replicated by anyone.

The approach described here does not require special software (except for the assistive technology testing), or specialized skill on the part of the evaluator. When combined with testing of software applications with assistive technologies as a part of the testing procedure, the testing strategy can predict, with nearly 100% accuracy, the usability of the software application by persons with disabilities. In addition, the testing results that the tester can document when following this procedure can serve as a comprehensive description of what exact changes must be made to software in order to make it accessible, as well as compliant with Section 508.

General testing requirements

Testing should be performed on an IBM-compatible personal computer with at least 64MB RAM (128MB or more preferred), a working sound card with connected speakers or headset, a mouse, and VGA display adapter and color monitor with display settings at 800x600 resolution and 256 colors. Windows 95, 98, Millenium Edition, NT4, or Windows 2000 Workstation, or Windows XP operating system should be installed. Computers or applications that run only on Macintosh OS, Unix OS, or operating systems other than those listed above will generally fail one or more of the Section 508 criteria and consequently fail core criteria for testing and cannot benefit from the following testing approach.

How to set up the display for testing. To set display settings in preparation for testing, select the START menu, select SETTINGS, select CONTROL PANEL, select DISPLAY, select the SETTINGS tab, set "Desktop Area" to 800 x 600, if it not already; then change the COLOR PALETTE to 256 colors, then select APPLY.

Testing with Assistive Technology

To fully test the usability of the application with assistive technology, we recommend undertaking the following tests using a screen reading program, either concurrently with the testing protocol described below (recommended), or as a separate step, duplicating the entire testing protocol. A demonstration version of the JAWS screen reading program is available from the Freedom Scientific web site, and it may be used to test the application for compatibility with, and usability with a screen reading program. The current location for a demonstration version is:

http://www.freedomscientific.com/fs_downloads/jaws_form.asp

Documentation is also available on the Freedom Scientific web site. The current location is:

http://www.freedomscientific.com/fs_support/doc_screenreaders.asp

For an assessment of usability of the application with the screen reading program, specialized knowledge of the screen reading program is not required. It is sufficient to simply launch the screen reading program, and then observe whether or not the screen reading program speaks every visually evident focal point as the tester uses the keyboard to navigate through the program. In addition:

- If a focal point is logically tied to a prompt (for example, if the focal point lands in an edit field with a prompt to the left of the edit field, or a radio button with a description above the radio button), and JAWS fails to read the prompt upon movement into that edit field or other control, that component in the application fails the assistive technology test.
- If the sighted tester cannot use the keyboard to navigate to areas on the screen where information is presented that the sighted tester looks at or observes for guidance in using the program, and if those areas of the screen are not spoken by JAWS in logical order as the tester uses the keyboard to navigate across the application, then that component fails the assistive technology test.

How to test the application.

The purpose of this test is to determine the compliance of the application with Section 508 requirements, and to develop complete responses to the USDA Section 508 Evaluation Checklist (See Appendix I). In undertaking this testing, there are three stringent requirements:

(1) NO USE OF THE MOUSE. *The mouse should be set aside and not used at any time for any part of the keyboard, focus, and assistive technology tests of the application. For these tests, the keyboard can be the only means of navigation. If a component cannot be used without a mouse, or something cannot be done with the keyboard alone, that component fails one of the core Section 508 requirements, and testing need not continue further with that component. It does*

not matter whether or not the remaining application is fully keyboard-enabled, if the gateway to the remaining application can only be launched by mouse action, the application fails the "keyboard" test, and testing must be discontinued. The mouse will need to be used, however, to switch applications in the StickyKeys test, and may be used to in preparatory steps outside of the actual keyboard, focus, and assistive technology tests.

(2) FOCAL POINT MUST BE CAREFULLY MONITORED. *Careful visual observation of the "focal point" is one of the central requirements of this test. The "focal point" is typically indicated by an on-screen highlight, color change, dotted outline, underline, change in cursor, or other physical change on the screen. This focal point must move among all interactive elements of the screen. In other words, if there are parts of the screen or application that provide information but cannot be "focused upon" under keyboard control, then that component of the application fails the "focus" test, and this should be noted. Nevertheless, further testing can continue.*

(3) TESTING REQUIRES GOOD VISUAL ACUITY. *Because the visual observation of the effect of keyboard navigation on the application -- both for what IS focusable as well as for what is NOT focusable -- is so central to the Section 508 testing, the testing must be conducted by a tester with good visual acuity. While blind and low vision testers have a useful role to play in testing the accessibility of applications, it is critically important that a fully sighted tester document what is physically displayed but is NOT accessible, in order to evaluate the "focus" requirement. Because of limitations in the actual application being tested, a blind tester will be unable to properly evaluate limitations in the application's "focus" requirement.*

Testing Protocol

The testing protocol is based on the Section 1194.21 Software Applications and Operating Systems standards, of Section 508. In this protocol, the word "component" will be used to indicate the part of the application that you currently observe at any moment on-screen, and may be further broken down into smaller units, such as on-screen controls (edit boxes, radio buttons, list boxes, etc.). When a component fails one of the tests below, the "Comments" section of the corresponding element in the Section 508 Evaluation Checklist should briefly describe the component and how it failed. For the sake of documenting the problem for internal developers who might be in a position to fix the failure, specific details (such as a description of on-screen controls) should be provided for further use by developers.

The "Software Applications and Operating Systems" evaluation checklist includes twelve elements, designated alphabetically, from "A" to "L," corresponding directly with the "A" through "L" elements in the Section 508 standards, described

at 36 CFR Part 1194, Subpart B -- Technical Standards § 1194.21, Software applications and operating systems.

For the purpose of testing, elements A and C and D are combined, since they are tightly interrelated: Keyboard navigation ("element A") changes the focal point ("element C"). Changes in focal point are the triggers for at least two major categories of assistive technologies -- screen reading and screen enlargement. If a screen reading program is used as the basis for testing element D, it is usually efficient to test all three elements concurrently (keyboard use, focus, and assistive technology as represented by a screen reading program).

ELEMENT A (Keyboard): *"When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually."*

ELEMENT C (Focus): *"A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes."*

ELEMENT D (Information available to Assistive Technology): *"Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text."*

ACTION STEPS:

Keyboard test (element A):

Navigate, using the keyboard alone, through all of the components, dialogs, menus, and other interface elements to determine whether each of the interface elements is fully usable with the keyboard alone. Do not use the mouse during any part of the test, at any time. Test all of the typical navigation approaches including:

- Use the TAB key to navigate through sequentially through all of the elements of dialog boxes, forms, fields, and many other types of application interfaces. Use SHIFT + TAB to navigate in reverse through these same elements.
- Use DOWN ARROW key to navigate through lists or list boxes, or ALT + DOWN ARROW to open a combo box or list box, then DOWN ARROW to navigate, and ESC to close.
- Use ALT + a letter to activate an element that is marked with an underline under the "accelerator letter."
- If the application uses a menu bar, press the ALT key by itself, and then use the right arrow key to navigate across menu items. Then in any given menu, navigate downward to observe whether a menu opens beneath the

menu keyword. If the ALT key does not place focus on the menu, or (once that focus is visible) if the right and left and down and up cursor keys do not open up the menu, this test fails.

- When entering information into edit fields, the RIGHT or LEFT ARROW keys should navigate across existing text, and holding the DELETE and BACKSPACE keys should delete text.
- When entering information into edit fields, move to the beginning of the text with the HOME key, then hold the SHIFT key down, and use the RIGHT ARROW key to highlight text. Use CTRL + C to copy the highlighted text, and then right arrow to clear the highlight. Then use CTRL + V to paste that text back at the current cursor position. If any of these steps do not operate as indicated, the test fails.
- CTRL + TAB should navigate through successive pages of multi-paged dialog boxes.
- Also, for multi-paged dialog boxes, use TAB to move to the page tab label, then RIGHT ARROW to move from one page (of the multi-page dialog) to the next.
- ESC key will typically close an open dialog box.

Document Results: If any component cannot be used with the keyboard alone, document the deficiency, and report it under "Comments" for element A on the Section 508 evaluation checklist, 1194.21(a).

Focus Test (Element C)

Note that this test must be conducted concurrently with the keyboard test, above. With each keyboard navigation keystroke, observe if the focus changes (that is, look for a physical change on the screen indicating your new position. This can be a color change, highlight change, dotted line around a new element, etc.) Sometimes the focal point change is very subtle, and you may need to move one step back in the sequence and repeat the movement to the new focal point to observe the change in on-screen focus. If there is no visible evidence of a change in focus, the focus test fails for this particular component, and the outcome must be documented (see below, under "DOCUMENT RESULTS"). Whether or not you see a focus change may be inconsistent. For example, a dialog box may show focus changes for all but one or two elements. If there is any information that the user must be aware of that is not included in the cycling through focal points, then the focus test fails for that component.

Remember that the focus must be able to be moved to any area of on-screen information. The following situations represent typical problems of focus that indicate a failure in the focus test:

- Dual focus points. (For example, TABbing to a component in a dialog box presents an explanation of that component in another area of static text in that dialog box. Here there are two focus points, and there is no automatic way for assistive technology -- screen reader or screen enlarger -- to deal with this; consequently this is a failure of the focus test (element C) and it should be documented).

- Information areas on-screen that include instructions or other data important to the user that are not able to be "focused upon" with keyboard movement of the focus. (For example, explanatory text, hints.) Prompts are NOT a problem, as long as they are in proximity to the edit field or control they are connected with. The best way to test whether or not on-screen information is included in the focus, or programmatically exposed to assistive technology is to listen for the on-screen information during the entire cycle of keyboard navigation, with the screen reading program running. If the information area is not spoken by a screen reading program, it fails this test, and the missed information should be documented in remarks for element C.

Document Results: If there is no evident change in on-screen focus as you navigate through one or more components of an application, document the deficiency, and report it under "Comments" for element C on the Section 508 evaluation checklist, 1194.21(c).

Screen Reading Test (Element D)

Note that this test should be conducted concurrently with the keyboard test, above, or it may be conducted later, repeating the keyboard test as the primary technique used to evaluate screen reading. To run this test, the screen reading program (e.g., JAWS) should be loaded and active. [Note that the demonstration version of JAWS only runs for approximately 40 minutes, then closes. To restart JAWS, you will need to restart the computer and then reload JAWS.] With each keyboard movement that triggers a change in the focus, note whether the contents at the physical focal point is consistent with what the screen reading program is speaking. If it is not, this is a failure in the screen reading test (element D). If you want to "replay" what the screen reader spoke, use the keyboard to move one step backward in the sequence, then go forward again to return the focal point to the position where the screen reader spoke the focus, and listen again. Typical "reverse and then forward" keystrokes are SHIFT + TAB, followed by TAB, or UP ARROW, followed by DOWN ARROW. The following points should be checked carefully in the screen reading test:

- Are all prompts for edit fields or radio buttons spoken?
- Are all prompts or labels over other controls, such as list boxes, spoken?
- Are other informational areas of text spoken, appropriately, as you navigate through the application, dialog box, or other component?
- Are there areas of on-screen information that seem to be ignored by the screen reading program?

Document Results: If the screen reading program does not speak the contents of the new focal point each time you change focal point, or if it does not explain context by speaking prompts or text associated with that focus and which would be needed to understand what to do at that point, then document the deficiency, and report it under "Comments" for element D on the Section 508 evaluation checklist, 1194.21(d).

ELEMENT B (No Disruption of Accessibility Features): *"Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer."*

ACTION STEPS:

There are certain elements built into the operating system that represent accessibility features. These include accessibility aids (under Settings ... Control Panel ... Accessibility) such as "sticky keys" that allow a user to press one key at a time in a sequence instead of pressing two or more keys at once; and accommodating changes in user preferences, including, for example, enlarging system wide fonts. Two quick tests will serve to qualify whether the application meets the requirements of element B of the Section 508 Evaluation Checklist. Before running these two tests, unload the screen reading program (for example, with JAWS, use Insert + F4 to close the program, and respond with a SPACE BAR on the OK button to close the program).

"StickyKeys" Test:

The purpose of this test is to determine if having the StickyKeys accessibility aid running allows you to use StickyKeys to control your application. The test is not comprehensive, and only tests one keystroke combination, ALT + F4, which should close your application. If this test fails, however, it is reasonable evidence that the application may not be compatible with some accessibility aids.

- Be sure the application under test is running.
- Set up sticky keys: Select the START menu, select SETTINGS, select CONTROL PANEL, select "Accessibility Options," press the SPACE BAR at the "Use StickyKeys" check box, and press ENTER. A dialog appears, asking if you want to save the settings for the default user. Press the "N" key for "No." (Follow the same exact steps, later, when the test is complete, to disable StickyKeys)
- To switch to your running application, do NOT use ALT + TAB. Instead, use the MOUSE to click on your application on the task bar at the bottom of the screen.
- In your application, tap the ALT key, alone. You should hear a noise from the speakers. Then tap the F4 function key. Your application should close.

If you heard no noise from the speakers when pressing the ALT key, StickyKeys may not be properly loaded. Repeat the steps, above. Otherwise, if you heard the noise when pressing the ALT key, and if the application does not close, the test fails, and the outcome should be reported under "Comments" for element B on the Section 508 evaluation checklist, 1194.21(b).

Menu Font Size Test:

The purpose of this test is to determine whether user preference changes in overall system settings, such as the size of menu fonts, affect the application. Applications which circumvent operating system conventions for managing screen fonts, font sizes, etc., may fail this test.

- Be sure the application you are testing is running.
- Change menu font size, as follows: Select the START menu, select SETTINGS, select CONTROL PANEL, select "Display," then press CTRL + TAB to move to the "Appearance" page of the Display dialog. TAB three times to move to the "Item" setting, then press "M" for "Menu." TAB four more times to the font size, type 14 and press the ENTER key. The font size in your application's menu bar should have increased, and reformatted to accommodate the larger menu font size. Repeat this step to return the menu font size back to its previous setting, usually 8 point.

If you heard no noise from the speakers when pressing the ALT key (it sounds like a "squeak"), StickyKeys may not be properly loaded. Repeat the steps, above. Otherwise, if you heard the noise when pressing the ALT key, and if the application does not close, the test fails.

Document Results: If one or both of these two tests fail, document the deficiency, and report it under "Comments" for element B on the Section 508 evaluation checklist, 1194.21(b).

ELEMENT E (Consistent meanings for bitmap images): *"When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance."*

ACTION STEPS:

This element should be tested by visual observation of the application, looking for any inconsistency in the use of bitmap images and their associated meaning or purposes. For example, if a search button is represented in one component of the application as a bitmap image that looks like a magnifying glass, and if, in another component of the application, the search button appears to be a bitmap image of a finger pointing to a page in a book, these are not consistent, and the test fails.

Document Results: If there is inconsistent use of bitmap images, this should be documented in element E on the Section 508 evaluation checklist, 1194.21(e).

ELEMENT F (Text should be text, not an image): *"Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes. "*

ACTION STEPS:

Whether or not what APPEARS to be text on the application screen is ACTUALLY text can usually be determined by using a feature of the screen reading program, JAWS, called the JAWS cursor. If an area of the screen APPEARS that it may not be text, but rather might be a graphic image that incorporates text as a part of the graphic image itself, test for the existence of text as follows:

With JAWS running, tap the "-" key in the upper right corner of the numeric keypad. JAWS should report, "JAWS cursor." Now, use the numeric keypad ARROW keys to move what appears as the mouse cursor to the area of the screen to be tested, and move the cursor in this way across the text itself. If JAWS reads the text, the text information is being provided through operating system functions for displaying text. If JAWS does not read the text or if it reports "graphic," the test fails.

Document Results: If there is text embedded in a graphic in the application, and it cannot be read by the screen reading program, this should be documented in element F on the Section 508 evaluation checklist, 1194.21(f).

ELEMENT G (Respect user color/contrast settings): *"Applications shall not override user selected contrast and color selections and other individual display attributes."*

ACTION STEPS:

In all versions of Windows, the user has the ability to change the contrast and color selections that apply to all Windows applications and to the desktop. Some Windows applications override this system-wide setting, and that application is not compliant with element G. [Note: system policy may not allow the user to change system colors. This policy is not permitted under element G of Section 508.] To test this, select the START menu, then SETTINGS, then CONTROL PANEL, then DISPLAY. Then use CTRL + TAB to move to the "Appearance" tabbed dialog page, and press "H" to select "High Contrast Black" and press ENTER.

Now, use ALT + TAB to return to your application and test menus, dialogs, edit fields, and all other interface components. If they appear to be white foreground letters and dark background, and all elements of the application have changed, consistent with the system-wide setting of color and contrast, then the application passes this element. If any part of the application still appears to have a white background, then the application fails.

To "undo" the color and contrast selection and return it to "Windows Standard," select the START menu, then SETTINGS, then CONTROL PANEL, then DISPLAY. Then use CTRL + TAB to move to the "Appearance" tabbed dialog

page, and press "W" twice to select "Windows Standard" and press ENTER. Then ALT + F4 to close the Control Panel.

Document Results: If, after the system-wide contrast/color change is made, the application has components that are white background, or if any other foreground or background color combination is UNAFFECTED by the system-wide color change, this should be documented in element G on the Section 508 evaluation checklist, 1194.21(g).

ELEMENT H (Provided non animated alternates to animation): *"When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user."*

Document Results: If there is animation in the application, and there is no non-animated option to display the same information, this should be documented in element H on the Section 508 evaluation checklist, 1194.21(h).

ELEMENT I (Color not sole way to convey information): *"Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element."*

ACTION STEPS:

Color coding, such as the instruction, "please complete the fields in 'red'" is not allowable unless it is also accompanied by an alternate instruction, such as "please complete the fields in 'red' which are also indicated by the word 'REQUIRED' at the beginning of the question." Check the application for references to colors in prompts or instructions and determine if an alternative means is provided to understand the same information for those who cannot distinguish the color referred to in the instruction.

Document Results: If color is the sole means used in a prompt or instruction, this should be documented in element I on the Section 508 evaluation checklist, 1194.21(i).

ELEMENT J (When color/contrast used, offer variety to the user): *"When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided."*

ACTION STEPS:

This item is similar to element G, but G applies to user control over system-wide contrast and color and whether the application conflicts with this. Element J addresses the feature of an application that can provide the user with contrast or color selections WITHIN THE APPLICATION. If the application supports this, be sure that the application FIRST meets element G's requirements, and will allow the user to set system-wide settings and have it override the application's individual color settings. It is not acceptable to merely provide color controls in

the application that can mimic system-wide color settings; they must be capable of being overridden entirely by system-wide colors. After ensuring that system wide colors can override the application's specific colors (and user options for colors), then test the user-definable color and contrast settings, and ascertain whether a sufficient variety is offered to provide contrasting foreground/background colors. If user-selectable color combinations do not provide low to high contrast levels (between foreground and background), then the application fails on this element.

Document Results: If user selectable colors do not provide a wide range of contrast levels, this should be documented in element J on the Section 508 evaluation checklist, 1194.21(j).

ELEMENT K (No quick flash or blinks): *"Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz."*

ACTION STEPS:

Observe whether there is flashing or blinking text in the application, and then observe whether it looks like it is blinking more than two times per second. If it flashes more than 55 times per second, the eye will generally regard it as NOT FLASHING. If visible flashing is evident, at more than two times per second, the application fails to conform to element K.

Document Results: If flashing or blinking text occurs in the application more than two times a second, or less than 55 times per second, this should be documented in element K on the Section 508 evaluation checklist, 1194.21(k).

ELEMENT L (Electronic Forms work with Assistive Technology): *"When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues."*

ACTION STEPS:

This test only applies to electronic forms or forms-like applications. This test is best conducted in conjunction with the screen reading program, and concurrent with the testing for elements A, C, and D.

As you use the keyboard (e.g., typically the TAB or CURSOR keys) to navigate through the form, ensure that the screen reading program reads ALL information that is available to a sighted user. Note especially:

- instructions
- directions about filling out a specific field that may be located above, below, or to the right of the field, and that are separate from the field prompt itself
- error messages
- color coding for mandatory fields
- any other explanations that provide cues or other information for the user.

The navigation technique that you use for navigating through the form should be the same technique that automatically provides spoken cues for each part of the form. While instructions may be present at the beginning of a group of questions, unless they are read during the typical navigation keystroke sequence, there will be no logical way to associate the instructions with the questions or fields to which they are related. If the standard means for navigation from one field to the next bypasses instructions, directions, and cues, then the electronic form fails to conform to the element L.

Document Results: If any prompt, direction, explanation, or instruction on a form is not spoken by the screen reading program, this should be documented in element L on the Section 508 evaluation checklist, 1194.21(l).

Section 8. Technical Approaches to Ensuring Accessibility of Web Pages

Thirteen Rules for Web Accessibility Federal IT Accessibility Initiative Implementing Section 508 of the Rehabilitation Act

1. Provide *Alternate Text*

A text equivalent for every non-text element shall be provided via "alt" (alternative text attribute), "longdesc" (long description tag), or in element content. This applies to:

- Images and graphical buttons
- Graphical representations of text (including symbols)
- Image map regions
- Animations
- Applets and programmatic objects
- ASCII art (two slides)
- Frames
- Scripts
- Images used as list bullets
- Images used as "spacers"
- Sounds (played with or without user interaction)
- Stand-alone audio files
- Audio tracks of video
- Described video

2. Meaning must be independent of color

Web pages shall be designed so that all information required for navigation or meaning is not dependent on the ability to identify specific colors.

3. Identify language changes

Changes in the natural language (e.g., English to French) of a document's text and any text equivalents shall be clearly identified.

- For short passages of different languages within a page
- When the entire page is in different language

4. Style sheet independent

Documents shall be organized so they are readable without requiring an associated style sheet.

5. Update equivalents for dynamic content

Web pages shall update equivalents for dynamic content whenever the dynamic content changes.

- Image used FRAMES

- FRAMES and dynamic content created by SCRIPTS

6. Redundant text links for server-side image maps whenever possible

Redundant text links shall be provided for each active region of a server-side image map.

7. Use client-side image maps whenever possible

Client-side image maps shall be used whenever possible in place of server-side image maps.

8. Row and Column Headers in Data Tables

Data tables shall provide identification of row and column headers.

9. Data cells must be associated with header cells

Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

10. Title all frames

Frames shall be titled with text that facilitates frame identification and navigation.

- Simple titles
- Complex frameset descriptions

11. Script Independent

Pages will be usable when scripts, applets or other programmatic objects are turned off or are not supported or shall provide equivalent information on an alternative accessible page.

- When the user doesn't support scripts or plug-ins, they must have an alternative.
- When the user does support scripts, they must be as accessible as possible.
- When the page serves a programmed application, the application must be accessible.

12. Synchronize multimedia equivalents

Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

- Synchronization
- A text transcript of audio material is required and when synchronized with the multimedia, is called "captioning"
- A text or audio description of action and scenery in a video is required, and when synchronized with the multimedia, is called "video description"

13. Provide option to skip repetitive links

An appropriate method shall be used to facilitate the easy tracking of page content that provides users of assistive technology the option to skip repetitive

navigation links.

Related web sites:

- [Federal IT Accessibility Initiative](http://www.section508.gov/) (<http://www.section508.gov/>)
- [Center for IT Accommodation \(CITA\)](http://www.itpolicy.gsa.gov/cita) (<http://www.itpolicy.gsa.gov/cita>)

See also Guidelines from the Access Board, at
<http://www.access-board.gov/sec508/guide/1194.22.htm>

Section 9. Technical Approaches to Ensuring Accessibility of Documents

The following guidelines should be used when creating documents that are posted on web pages for public use, or made available in electronic form to employees. Applying these guidelines will help to remove barriers to accessibility:

Using text descriptions. Microsoft Office documents that contain graphics, graphs, photographs or other images should include text descriptions of the graphic elements immediately before or after the graphic and in enough detail that the reader understands the content. In HTML and PDF documents, the graphics, graphs, photographs or other images should be properly tagged (e.g., using ALT text in HTML) to provide sufficient detail to allow individuals who are blind or low vision to understand the information that is included in the graphic.

Creating accessible documents. For USDA employees, documents may be in Microsoft Office file formats but must be made accessible taking into account the following requirements:

- Microsoft Word documents should not have protected zones, and should
- be fully editable, and cursor navigable throughout the document. To test this, use the keyboard alone to navigate throughout the document, and place the cursor in all areas of the document, including explanatory text preceding entry fields. (Examples of problem documents: those that have explanatory text and fill-in "fields" where the explanatory text is not navigable by the user's cursor, and where keyboard navigation is limited to only fillable "fields".)
- Microsoft Word documents should not contain "text boxes" nor Word Art, both of which pose accessibility barriers to persons with low vision and mobility impairment.

Setting up tables for accessibility. Microsoft Office documents containing tabular data should be created using the table creation tools, and **not** using the TAB key to construct a simulated table. Headings should appear at the top of a table in the first table row, and should be fully descriptive of the data in the underlying column below the heading. The top row of a table should not include the table title spanning several columns of a table; rather, include the table title on a text line immediately preceding the table. For web pages with tables, properly tag table elements, including using table header (TH), ID and TITLE attributes to facilitate table navigation.

Creating accessible spreadsheets. Wherever text is used in a Microsoft Excel spreadsheet, the complete content of the text item must be included in a single cell, and NOT carried over from one row to the next, nor stacked vertically in multiple cells. Word wrap should be enabled to allow single cell text to be

displayed properly without extending into adjoining cells. Multiple level headings should be avoided, including heading cells that span several columns.

Creating accessible presentations. Prepare Microsoft PowerPoint presentations so that graphics enhance the message but do not comprise the message itself. For example, each slide should present its content fully in text or at least should include text that explains and describes graphics. Then, to check accessibility, view the "outline" view of the presentation to ensure that the outline text presents the presentation fully. Then to save an accessible version of the Powerpoint presentation, save it as an "rtf" file, which includes the full outline content. This version of the presentation may be used by employees with visual disabilities to access the presentation, or it may be used as the basis for an HTML version of the presentation with or without accompanying ("alt-text tagged") graphics. If PowerPoint's built-in function for creating an HTML version of the presentation is used and posted on an internet or intranet web site, the site should include links to the HTML version as well as an alternative link to the text version (which is constructed using the rtf file incorporating the text outline).

Using tagging in PDF documents. Adobe Portable Document Format (PDF) documents should be created using Adobe Acrobat version 6 or later software, or equivalent tools from Adobe. All elements should be properly tagged, using the "make accessible" feature, in order to make the documents as compliant as possible with the Section 508 requirements.

Where possible, for internet documents, create a text-only or HTML equivalent of all PDF documents. Even when the "make accessible" feature is used, and elements are properly tagged, some screen reading software used in conjunction with Adobe Acrobat still cannot assure accessibility. Providing an HTML or text alternative provides the widest possible accessibility to members of the public. For intranet documents, PDF documents should always be accompanied by an alternative document in Microsoft Office file format, or HTML format that is properly coded according to the Section 508 web accessibility standards (e.g., tables).

PDF documents that contain scanned images as the base for the entire document are not compatible with assistive technologies. Scanned PDF documents should be converted to text using the Adobe Paper Capture feature, or using the original electronic form of the document, where available. For internal employee use, the document should then be saved in Microsoft Office format, or in HTML format for posting on public web sites.

Adobe PDF forms can be made accessible by making them fillable using the Adobe Acrobat 6 or later software. This will enable an individual using Adobe Reader 6 or later to fill out the form on their computer and print a copy. To make the PDF forms accessible, the "make accessible" feature is applied to the form,

the form tool is used to make the fields fillable, and alternate text is added to each field so that the assistive technologies can access the field labels.

Section 10. Guidelines for Requiring Officials

The FAR sets out requirements for requesting/requiring officials to document their acquisitions through documented market research, and written substantiation for the conformance of products or services with Section 508 standards, or fully documenting the lack of commercial availability, or the existence of an undue burden in conforming to Section 508 standards. The following checklist can help facilitate this documentation, and can be used as a tool to document the acquisition, accompanying checklists that are included in AGAR Advisory 49 (see Appendix B-3). Electronic documentation is preferable.

Documenting For Conformance With Section 508 Standards

1. Name of Requestor/Requiring Official (include agency or mission area, mailing address, email address, telephone number)

2. Name of Reviewer/Approving Official (include agency or mission area, mailing address, email address, telephone number)

3. Describe the EIT to be acquired or developed (include name, source, version number(s), and category of product or service, and if applicable, include a copy of the Voluntary Product Accessibility Template(s) (VPAT) and other accessibility documents supplied by the vendor)

4. Type of Acquisition (New purchase; new development; upgrade or modification to an existing product, order, service, or contract; custom developed software; commercial off-the-shelf software (COTS); commercial off-the-shelf software (COTS). with modifications; services)

5. Provide the estimated total cost of this EIT acquisition.

6. Describe the business purpose and core functions of the software/hardware/service. (Include the type of EIT being acquired, e.g., software development tool, word processing, spreadsheet, database, message, group calendaring, etc., and also the scope of usage, e.g., USDA-wide, agency only, mission area only, division or workgroup-level only, etc.)

7. Does the product or service replace existing products or services?

8. Describe the users of the product or service (employees, contractors, public? How many users are expected to use the product or service?
9. Technology Requirements: (Explain if the EIT will be used on the network and require network connections, or if it is a standalone product).
10. Describe what testing has been performed to validate the accessibility of the product or service (VPAT's or other vendor representations need to be validated, at least on a spot basis.). Include report of testing / validation.
11. If the EIT does not meet accessibility standards, describe why it does not.
12. If the EIT does not meet accessibility standards, can it be made accessible? (Include specific ways the product or service can be made accessible, and document the expected cost and length of time required.)
13. If the EIT is not fully accessible (i.e., fully meeting Section 508 standards for technology-specific and functional requirements), describe what alternatives to the product or service requested are available in the market that IS more accessible, or that is fully accessible. (Include a listing of all other products investigated during market research, with web site references, VPATS and other accessibility documentation. Include specific description of the products including name, version number, type of product, source information such as address and contact name, and estimated prices, if available.)
14. As requiring official, attest whether this EIT is the most accessible EIT in its category (include an explanation)
15. Commercial Non-Availability: If the EIT is not accessible (i.e., fully meeting Section 508 standards for technology-specific and functional requirements), and if alternatives to the product or service being requested and which are available in the market are ALSO not accessible, explain what alternatives were researched and why they are not accessible. (Include a listing of all other products investigated during market research, with web site references, VPATS and other accessibility documentation. Include specific description of the products including name, version number, type of product, source information such as address and contact name, and estimated prices, if available.)

16. Estimate the cost in dollars and resources of making this EIT accessible, and the cost of purchasing or developing an accessible alternative. If either of these is not possible, describe why this is not possible.

17. Describe why an exception is necessary for this EIT, which Section 508 or FAR exception applies, and how you are meeting the requirements for this exception.

18. Which exception or determination are you claiming (undue burden, commercial non-availability, not specified in Section 508 (e.g., component parts), back office exception, contractor use, etc.)

19. If claiming an "undue burden", provide a detailed explanation why it would create an undue burden for the Department, agency or mission area to make this EIT accessible or to use an accessible alternative. (Include supporting budget documents, if necessary.)

This checklist should be signed and dated by the Requestor/Requiring Official and/or electronically signed, verifying the submitter, as well as by the procurement officer/reviewer, and the approving official, as designated / delegated by the Office of Chief Information Officer, USDA.

This documentation should become a permanent part of the contract/procurement/request file.

APPENDIX A

Glossary of Terms

Accessible. Defined as “conforming to the provisions of the Electronic and Information Technology Accessibility Standards, published by the Architectural And Transportation Barriers Compliance Board.

Access Board. The Architectural And Transportation Barriers Compliance Board.

(The glossary terms, below, are included in the Definitions section in Section 1194.4, Electronic and Information Technology Accessibility Standards, published in the Federal Register on December 21, 2000, by the Architectural And Transportation Barriers Compliance Board. 36 CFR Part 1194, Electronic And Information Technology Accessibility Standards

Agency. Any Federal department or agency, including the United States Postal Service.

Alternate formats. Alternate formats usable by people with disabilities may include, but are not limited to, Braille, ASCII text, large print, recorded audio, and electronic formats that comply with this part.

Alternate methods. Different means of providing information, including product documentation, to people with disabilities. Alternate methods may include, but are not limited to, voice, fax, relay service, TTY, Internet posting, captioning, text-to-speech synthesis, and audio description.

Assistive technology. Any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve functional capabilities of individuals with disabilities.

Electronic and information technology. Includes information technology and any equipment or interconnected system or subsystem of equipment, that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature

control devices, and medical equipment where information technology is integral to its operation, are not information technology.

Information technology. Any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, hardware and similar procedures, services (including support services), and related resources.

Operable controls. A component of a product that requires physical contact for normal operation. Operable controls include, but are not limited to, mechanically operated controls, input and output trays, card slots, keyboards, or keypads.

Product. Electronic and information technology.

Requiring Official. Federal personnel who generates the request for or specifies the electronic and information technology product or service to be acquired, developed or maintained -- must ensure that the acquisition of EIT products and services meet the Section 508 EIT accessibility standards, unless an exception applies (see the FAR, at Appendix E).

Self Contained, Closed Products. Products that generally have embedded software and are commonly designed in such a fashion that a user cannot easily attach or install assistive technology. These products include, but are not limited to, information kiosks and information transaction machines, copiers, printers, calculators, fax machines, and other similar types of products.

Telecommunications. The transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

TTY. An abbreviation for teletypewriter. Machinery or equipment that employs interactive text based communications through the transmission of coded signals across the telephone network. TTYs may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYs are also called text telephones.

Undue burden. Undue burden means significant difficulty or expense. In determining whether an action would result in an undue burden, an agency shall consider all agency resources available to the program or component for which the product is being developed, procured, maintained, or used.

Other Terms:

Section 501. Section of the Rehabilitation Act of 1973, as amended, that prohibits discrimination on the basis of disability in Federal employment and requires Federal agencies to establish affirmative action plans for the hiring, placement, and advancement of people with disabilities in Federal employment.

Section 504. Section of the Rehabilitation Act of 1973, as amended, that prohibits discrimination based on disability in federally funded and federally conducted programs or activities in the United States, including employment programs. This involves, but is not limited to, providing individual accommodation at the worksite using assistive technologies.

APPENDIX B

USDA Departmental Policies, Regulations, and Advisories

Appendix B-1, Reasonable Accommodations for Employees and Applicants with Disabilities (DR 4300-008, March 9, 2000)

(Reference: <http://www.apda.usda.gov/DR4300-008.htm>)

U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

DEPARTMENTAL REGULATION

Number: 4300-008

SUBJECT: Reasonable Accommodations for Employees and Applicants with Disabilities

DATE: March 9, 2000

OPI: Office of Civil Rights

1 PURPOSE

The purpose of this Departmental Regulation (DR) is to transmit the Equal Employment Opportunity Commission (EEOC) Enforcement Guidance on Reasonable Accommodation and Undue Hardship under the Americans with Disabilities Act (ADA), Appendix A, that was issued on March 1, 1999. The 1992 amendment to Section 501 of the Rehabilitation Act, as amended, incorporates ADA, Title I employment guidance. This DR specifically:

- a) Implements the statute that provides coverage for Federal employees with disabilities and requires an employer to provide reasonable accommodation to qualified applicants or employees with disabilities, except when such accommodation would cause an undue hardship; and
- b) Clarifies the rights and responsibilities of employers and individuals with disabilities as they relate to reasonable accommodation and undue hardship.

2 POLICY

It is USDA policy to make reasonable accommodation to the known physical or mental limitations of qualified applicants for employment and employees with disabilities unless such an accommodation would impose an undue hardship on the operation of the Department's activities and/or programs.

USDA will make reasonable accommodations for the removal of workplace barriers to the known physical or mental limitations of qualified applicants for employment and employees with disabilities, unless such accommodations would impose an undue hardship on the operation of the Department's activities and/or programs. It is the Department's policy to serve as a model employer of persons with disabilities and to accommodate employees and applicants with disabilities.

The attached enforcement guidance allows managers and supervisors to provide more than the minimum requirements whenever feasible, including accommodating individuals whose functional limitations do not rise to the definition of a "disability." USDA recognizes that all of its employees need the tools necessary to be productive, and that making reasonable accommodations is simply a way of providing the tools needed to accomplish its mission. USDA is committed to a simple and streamlined process for providing reasonable accommodations.

The Department's guiding principle is "When in doubt, accommodate!"

The EEOC guidance document can be found on-line at the following website:

<http://www.eeoc.gov/docs/accommodation.html>

For a paper copy of the EEOC Enforcement Guidance on Reasonable Accommodation and Undue Hardship under the Americans with Disabilities Act (ADA), contact Ruth Brown, Information Management Division, OCIO, at 202-720-8958, or by e-mail at ruth.brown@usda.gov.

Appendix B-2

AGAR Advisory 53 USDA Information Technology Acquisition Approval Process

May 21, 2003

AGAR ADVISORY

**UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT
PROCUREMENT POLICY DIVISION
AGAR ADVISORY NO. 53**

USDA Information Technology Acquisition Approval Process

INTRODUCTION: The purpose of this Agriculture Acquisition Regulation (AGAR) Advisory is to disseminate information, issued by the Department of Agriculture (USDA) Office of the Chief Information Officer (OCIO), regarding the information technology (IT) acquisition approval process; and to remind acquisition personnel of these requirements.

SUMMARY: USDA Chief Information Officer (CIO) memorandum of May 13, 2003, revised the threshold at which USDA CIO IT acquisition approval is required, lowering the threshold from \$250,000 to \$25,000. All exemptions and conditions included in the current process, delineated in USDA OCIO Memorandum of May 9, 2002, remain in place, until superseded by revised USDA OCIO guidance. AGAR Advisory No. 47, dated May 20, 2002, is cancelled and superseded by this AGAR Advisory which incorporates the revised threshold.

SPECIFIC ISSUES:

- USDA CIO memorandum of May 13, 2003, copy attached, lowers from \$250,000 to \$25,000 the threshold at which IT investments are required to be approved by the USDA CIO.
- All special exemptions and conditions included in the current process will remain in effect. The current process is set forth in USDA OCIO memorandum of May 9, 2002, copy attached.
- USDA OCIO memorandum of May 9, 2002, delineates the approval requirements for IT acquisitions, and includes a format to be followed when preparing an acquisition approval request.
- As stated in the OCIO May 9, 2002 memorandum, *revised to replace \$250,000 with \$25,000*, where that threshold appears:

“An acquisition approval request must be made if a USDA agency wishes to expend **\$25,000** “or more for an IT acquisition. ***This also applies to orders against all existing contracts and General Services Administration schedules.*** The following activities are exempt from the IT acquisition approval process:

- The renewal of existing contracts for maintenance and leases, so long as optional enhancements and/or upgrades which exceed the **\$25,000** threshold are not involved; and
- IT acquisitions for organizations other than USDA agencies when funded by USDA grants.

Special activities that require acquisition approval as part of this process include:

- All telecommunication acquisitions (with no dollar threshold) for agencies that have not met the Telecommunications Network Stabilization and Migration Program requirements. This includes entry of planned telecommunication acquisitions into the Forecast, Inventory and Reporting system; and
- Software or hardware for major systems within the functional areas of the Department's corporate *Administrative and Financial Systems Portfolio*. This will ensure that agency activities are coordinated while enabling agencies to proceed on priorities that are not part of the corporate portfolio. Specifically, the functional areas include:
 - Accounting/Budget Execution;
 - Budget Formulation/Salary Projections;
 - Human Resources;
 - Procurement (Purchase Card and other acquisitions);
 - Property (Personal and Real);
 - Payroll; and
 - Travel.”

Questions regarding these IT acquisition approval requirements should be directed to agency CIOs or the USDA OCIO.

- Departmental Regulation 5039-7, Delegation of Procurement Authority for Information Technology, dated September 18, 1998, paragraph 3, Background, subparagraph d states that:

“Proposed IT acquisitions and information resources activities must comply with all requirements established by the OCIO. OCIO oversight includes both approving IT investments and monitoring and evaluating the performance of these investments. Requirements include: (1) compliance with the Capital Planning and Investment Control Process; (2) compliance with standards of the USDA

Information Systems Technology Architectures; (3) obtaining technical approvals in accordance with DR 3130-1; and (4) compliance with requirements of any prevailing OCIO moratoriums or USDA directives.”

The IT acquisition approval requirements delineated in the USDA OCIO May 9, 2002 memorandum, as modified by the USDA CIO May 13, 2003 memorandum, are the procedures which superseded the original OCIO IT acquisition moratorium procedures.

If you have questions about this advisory, please contact Pat Honda by telephone at (202) 720-8924, by fax at (202) 720-8972, or by email to pat.honda@usda.gov. This advisory is available on the USDA homepage at <http://www.usda.gov/procurement/policy/advisories.html>.

EXPIRATION DATE: Effective until canceled.

[END]

ATTACHMENT TO AGAR ADVISORY NO. 53

May 13, 2003

TO: Under Secretaries
Assistant Secretaries
Agency Heads

FROM: Scott Charbo /s/
Chief Information Officer

SUBJECT: Revision of \$250K Information Technology Acquisition Threshold

As you may be aware, all USDA information technology (IT) acquisitions over \$250,000 require that a waiver be submitted by the Agency Head and then approved by the USDA Chief Information Officer (CIO). Unfortunately, even at this waiver level, many USDA IT investments are still not reported and tracked as part of the USDA Capital Planning and Investment Control Process. **In order to ensure that the Department is spending its IT resources on its highest priorities, effective immediately, I am lowering the threshold for IT investments that require a waiver from \$250,000 to \$25,000.** All special exemptions and conditions included in the current moratorium process will remain in effect. In addition, I will provide some new guidance in a subsequent more detailed memorandum to each Agency Head.

Authority for this action is included in the Fiscal Year 2003 Agriculture Appropriations Act (Public Law 108-7) through the following provision: “None of the funds made available to USDA by this Act may be used to acquire new IT systems or significant upgrades, as determined by the Office of the Chief Information Officer (OCIO), without the approval of the Chief Information Officer and the concurrence of the EITIRB.”

Further, this action is consistent with the Department’s Executive Information Technology Information Review Board’s (EITIRB) recent commitment to an approach to investment management. This newly endorsed approach emphasizes the importance of preserving and protecting the USDA Enterprise Architecture (modernization blueprint) and protecting the Department’s IT investments.

I want to express my appreciation for your ongoing efforts to work together as we continue to improve IT management at USDA by collectively leveraging our IT investment dollars for common and enterprise-wide efforts. I realize this reduction in threshold has workload implications for all of us. My staff will seek to minimize affects on workload as we develop implementation guidance. Please call me at 720-8833, or have your staff contact Associate CIO Gregory Parham at 720-5865, with any questions or concerns.

cc: Russ Ashworth, OPPM
Agency Deputy Administrators for Management
Agency Chief Information Officers

May 9, 2002

TO: Chief Information Officers
FROM: Gregory Parham /s/
Associate Chief Information Officer for
Information Resources Management
SUBJECT: USDA Information Technology Acquisition Approval Process

The information technology (IT) acquisition approval process is the mechanism by which the USDA Office of the Chief Information Officer (OCIO) monitors and reviews agency-level IT spending. We use this process to:

- Improve the management of the underlying IT projects;
- Ensure compliance with applicable laws and rules;
- Create an opportunity for information exchange between staff at the department level and at the agency level; and
- Address department-wide redundancies and inefficiencies where possible.

I want to remind everyone that the USDA IT acquisition approval process is still in place and share some information with you regarding the background and applicability of this process.

BACKGROUND

Public Law 105-86, making appropriations for fiscal year 1998, included the following provision, “None of the funds made available to USDA by this Act may be used to acquire new IT systems or significant upgrades, as determined by OCIO, without the approval of the Chief Information Officer (CIO) and the concurrence of the Executive Information Technology Investment Review Board (EITIRB).” This provision continues today in Public Law 107-76, Sec. 719, making appropriations for fiscal year 2002.

The law establishes the OCIO and the EITIRB as the review and approval authorities for “significant” IT spending requests. In 2000, the USDA EITIRB determined that its ongoing capital planning activities were sufficient to address its responsibilities under this law. Specifically, the EITIRB determined that the inclusion of IT projects in the department’s budget and in the Information Technology Investment Portfolio System was sufficient to address its responsibilities under the law. The EITIRB further determined that it would only review IT acquisition approval requests (also known as waivers) under very limited circumstances. Since relatively few projects meet the exceptions, OCIO manages the majority of IT acquisition approval requests for the department.

IT ACQUISITIONS REQUIRING APPROVAL

An acquisition approval request must be made if a USDA agency wishes to expend \$250,000* or more for an IT acquisition. *This also applies to orders against all existing*

contracts and General Services Administration schedules. However, the following activities are exempt from the IT acquisition approval process:

- The renewal of existing contracts for maintenance and leases so long as optional enhancements and/or upgrades which exceed the \$250,000* threshold are not involved; and
- IT acquisitions for organizations other than USDA agencies when funded by USDA grants.

Special activities that require acquisition approval as part of this process include:

- All telecommunication acquisitions (with no dollar threshold) for agencies that have not met the Telecommunications Network Stabilization and Migration Program requirements. This includes entry of planned telecommunication acquisitions into the Forecast, Inventory and Reporting system; and
- Software or hardware for major systems within the functional areas of the Department's corporate Administrative and Financial Systems Portfolio. This will ensure that agency activities are coordinated while enabling agencies to proceed on priorities that are not part of the corporate portfolio. Specifically, the functional areas include:
 - Accounting/Budget Execution;
 - Budget Formulation/Salary Projections;
 - Human Resources;
 - Procurement (Purchase Card and other acquisitions);
 - Property (Personal and Real);
 - Payroll; and
 - Travel.

In response to agency concerns about the administrative burdens of complying with the approval process, OCIO is continuing discussions about viable alternatives to this process.

For your information, Attachment 1 is a list of the waivers received by our office this year. Please review this list and ensure that all activity underway in your agency is appropriately covered by approval from the CIO. Attachment 2 is the format to follow for preparing an acquisition approval request.

I would like to take this opportunity to express my appreciation for your ongoing efforts as we continue to improve management of IT at USDA. Please call me at 720-5865, or have your staff contact Marilyn Holland at 720-6275, if you have questions or concerns regarding the IT acquisition approval process or this memorandum.

Attachments

cc: IT Major Investment Project Managers
Deputy Administrators for Management

***NOTE: By USDA CIO Memorandum of 5/13/03 revised to \$25,000
Attachment 1 to OCIO Memorandum of May 9, 2002 is not included with AGAR
Advisory No. 53**

ATTACHMENT 2

INFORMATION TECHNOLOGY ACQUISITION APPROVAL REQUEST

FROM: *Agency Head*
Staff Office Director

JUSTIFICATION FOR ACQUISITION:

Provide a justification and address the consequences if the acquisition is not approved.

DESCRIPTION OF ACQUISITION:

For all requests include:
Security analysis/requirements and security costs.

For Hardware or Software requests include:
Technical description of hardware and software
List of cost, quantity, type, and manufacturer name and model, if available
City and State of office where items will be located
Statement that items will conform to USDA architecture

For Support Services or Services requests, attach:
List of technical and business requirements
Statement of Work, if available
Start and completion dates

BUDGET INFORMATION:

Dollar amount of acquisition broken out by Fiscal Year and Information Technology category: Hardware, Software, Support Services, & Services

Information Technology Investment Portfolio (I-TIPS) entries for Life Cycle Costs.

AGENCY CONTACT:

Name, telephone number, and e-mail address of agency point of contact

DECISION BY THE CHIEF INFORMATION OFFICER:

Approve: _____
Disapprove: _____
Discuss with me: _____
Date: _____

[Return to Top](#)

Appendix B-3

AGAR Advisory 49, Implementation of Section 508

November 25, 2002

(Source: http://www.usda.gov/procurement/policy/advisories_x/agarad49.htm)

November 25, 2002

AGAR ADVISORY

UNITED STATES DEPARTMENT OF AGRICULTURE OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT AGAR ADVISORY NO. 49

Implementation of Section 508 of the Rehabilitation Act of 1973, as amended

INTRODUCTION: This Agriculture Acquisition Regulation (AGAR) Advisory provides information regarding implementation of Section 508 of the Rehabilitation Act of 1973, as amended (the Act).

SUMMARY: AGAR Advisories 34, 34a, and 34b, now expired, were issued to provide consistent guidance for USDA in the acquisition of electronic information technology (EIT). This Advisory revives those working tools and assembles them into a single directive.

SPECIFIC ISSUES:

The Federal Acquisition Regulation (FAR) provides the regulatory instructions necessary to implement Section 508 in solicitations, contracts, and the supporting acquisition files. The FAR focuses attention on the necessity of trained requirements personnel to prepare statements of work that express the procurement requirement including the need for 508 compliant Electronic and Information Technology (EIT). The requirements personnel are responsible for the market research during which the agency determines both whether commercial EIT will be available in time to meet our need and whether providing conforming EIT would be an undue burden. The market survey results are conveyed with and in the statement of work.

To provide consistent guidance for USDA, this Advisory contains, as attachments, working tools to be provided to the requirements officials. The working tools are not considered codified materials. These are guidance documents designed to ease the management of EIT acquisitions.

Attachment One is a sample format for use in making an undue burden determination.

Attachment Two is a sample format for use in making an unavailability determination.

Attachment Three is a sample format for use in making a determination that the requirements in Federal Acquisition Regulation (FAR) 39.203 do not apply.

Attachment Four is a format for use when attachments one to three are not needed.

Attachment Five is a sample format for use in making a determination that the requirement is for parts for which no standard exists. Section 508 of the Rehabilitation Act of 1973, as amended applies to all EIT, whether acquired as parts or as a system. However, some parts do not impact information input or output, and therefore not of concern in relation to the Act and its implementing regulation. Application software is an example of a system part that does impact information input or output. A replacement hard drive is an example of EIT that does not impact information input or output in the manner that is addressed in Section 508.

Attachment Six is a list of Internet sites which may be accessed as needed to assist in acquisition planning and procurement.

Attachment Seven is a sample checklist of the standards found in 36 CFR Part 1194, the accessibility standards. This checklist is dated "Version 05/16/2001." It should not be used when more current versions are made available. If a more current version is available, please forward it to the contact person below.

If you have questions about this advisory, please contact J. R. Holcombe Jr. by telephone at (202) 720-8484, by fax at (202) 720-8972, or by email at Richard.Holcombe@USDA.gov.

EXPIRATION DATE: In effect until canceled.

[END]

**ATTACHMENT ONE TO AGAR ADVISORY NO. 49
UNDUE BURDEN DETERMINATION**

The requiring official must provide a written determination to the contracting officer for inclusion in the file. When acquiring commercial items, an undue burden determination is not required to address individual standards that cannot be met with supplies or services available in the commercial marketplace in time to meet the agency delivery requirements.

The determination should describe--

1. The commercial items, products or services required to meet the agency's needs.
2. The dollar value of the acquisition, including any options.
3. The applicable Section 508 standards (see 36 CFR part 1194).
4. The market research performed to locate commercial items that meet the applicable standards.
5. Which standards can be met and which cannot.
6. The undue burden (i.e., the significant difficulty or expense the Government would incur in order to comply with a particular standard). If the monetary expense is deemed prohibitive, explain the costs and how they were estimated. In determining whether compliance with all or part of the applicable accessibility standards in 36 CFR Part 1194 would be an undue burden, an agency must consider—
 1. The difficulty or expense of compliance; and
 2. Agency resources available to its program or component for which the supply or service is being acquired.
7. The steps the agency is taking to reduce use of the undue burden exception in future procurements.
8. The alternative means of access that will be provided that will allow the individuals with disabilities to use the information or data. (29 U.S.C. 794d(a)(1)(B)).

Approval of the determination.

The determination must be approved in writing prior to award of the task or delivery order, purchase order or contract. The approving official is the requiring official.

**ATTACHMENT TWO TO AGAR ADVISORY NO. 49
UNAVAILABILITY DETERMINATION**

The requiring official must provide a written determination to the contracting officer for inclusion in the file.

The determination should describe--

1. The products or services required to meet the agency's needs.
2. The dollar value of the acquisition, including any options.
3. The applicable Section 508 standards (see 36 CFR part 1194).
4. The market research performed to locate commercial items that meet the applicable standards.
5. Which standards can be met and which cannot.
6. Which EIT that is not available in the marketplace in compliant form and in time to meet the needs of the agency.
7. The steps the agency is taking to avoid the use of the non-compliant EIT, if practicable.
8. The alternative means of access that will be provided that will allow the individuals with disabilities to use the information or data. (29 U.S.C. 794d(a)(1)(B)).

Approval of the determination.

The determination must be approved in writing prior to award of the task or delivery order, purchase order or contract. The approving official is the requiring official.

**ATTACHMENT THREE TO AGAR ADVISORY NO. 49
DETERMINATION THAT FAR 39.203 DOES NOT APPLY TO THIS
REQUIREMENT**

The requiring official must provide a written determination to the contracting officer for inclusion in the file in order to document that the agency requirements for EIT need not meet the applicable accessibility standards at 36 CFR Part 1194 when:

- a. it is purchased in accordance with subpart 13.2 (micro-purchases of \$2,500 or less) prior to January 1, 2003. However, contracting officers and other individuals designated in accordance with 1.603-3 are encouraged to comply with the applicable accessibility standards to the maximum extent practicable;
- b. it is for a national security system;
- c. it is acquired by a contractor incidental to a contract, or is neither used nor accessed by Federal employees or members of the public;
- d. it is to be located in spaces frequented only by service personnel for maintenance, repair or occasional monitoring of equipment; or
- e. it would impose an undue burden on the agency. In determining whether compliance with all or part of the applicable accessibility standards in 36 CFR part 1194 would be an undue burden, an agency must consider —
 1. The difficulty or expense of compliance; and
 2. Agency resources available to its program or component for which the supply or service is being acquired.

Approval of the determination.

The determination must be approved in writing prior to award of the task or delivery order, purchase order or contract. The approving official is the requiring official.

ATTACHMENT FOUR TO AGAR ADVISORY NO. 49 DETERMINATION THAT THE REQUIREMENTS ARE 508 COMPLIANT

The requiring official should provide written advice to the contracting officer for inclusion in the file that the requirements are compliant and that the determinations in Attachments One to Three are not required for this acquisition. The determining official is the requiring official.

ATTACHMENT FIVE TO AGAR ADVISORY NO. 49 DETERMINATION THAT NO STANDARD IS AVAILABLE

When requiring parts as commercial items and no standard exists, the requiring official must provide a written determination to the contracting officer for inclusion in the file.

The determination should describe--

1. The commercial items or products required to meet the agency's needs.
2. The dollar value of the acquisition, including any options.
3. That there is(are) no applicable Section 508 standard(s) (see 36 CFR Part 1194).

Approval of the determination.

The determination must be approved in writing prior to award of the task or delivery order, purchase order or contract. The approving official is the requiring official.

ATTACHMENT SIX TO AGAR ADVISORY NO. 49 WORKING TOOLS FOUND ON THE INTERNET

Numerous Section 508 resources are now available on the Internet. The sites identified below may be accessed as needed to assist in acquisition planning and procurement.

A variety of procurement working tools established by the Procurement Policy Division are offered at <http://www.usda.gov/procurement/policy/advisories.html>

The USDA Office of the Chief Information Officer offers similar links to Section 508 information from <http://www.ocio.usda.gov/irm/508/sec508.html>. Items currently there of special value are specific information on agency contact points within USDA and links to the Department of Justice and Department of Education sites.

The General Services Administration maintains the "Buy Accessible" site at <http://www.section508.gov/>. You are able to search the site by specific product or service and see the products of all vendors who have voluntarily provided links. You can then use the links to reach the product or service descriptions necessary to complete your

market research. This database at <http://www.section508.gov/index.cfm?FuseAction=Content&ID=99>.

ATTACHMENT SEVEN TO AGAR ADVISORY NO. 49
SAMPLE CHECKLIST OF STANDARDS (Version 05/16/2001)

During Market Research to define needs for electronic and information technology, the requirements official(s) should consider the following measurement indicators and statements from 36 CFR Part 1194, to the products or services needed:

- N No compliance and there is no expectation of compliance.
- E Eventually will be made compliant, but does not comply now.
- S__% Somewhat compliant, and no expectation of full compliance.
- P__% Partially compliant with progress toward full compliance.
- F Fully compliant.

(1) Equivalent Facilitation:

People with disabilities are provided substantially equivalent or greater access to and use of items provided through use of designs or technologies other than those prescribed in 36 CFR Part 1194. Explain which features or components use equivalent facilitation and how it provides substantially equivalent or greater access: _____

(2) Software applications and operating systems.

- (i) When software is designed to run on a system that has a keyboard, product functions are executable from a keyboard where the function itself or the result of performing a function can be discerned textually.
- (ii) Applications do not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications do not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.
- (iii) A well-defined on-screen indication of the current focus is provided that moves among interactive interface elements as the input focus changes. The focus is programmatically exposed so that assistive technology can track focus and focus changes.
- (iv) Sufficient information about a user interface element including the identity, operation and state of the element is available to assistive technology. When an image represents a program element, the information conveyed by the image is also available in text.
- (v) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images is consistent throughout an application's performance.
- (vi) Textual information is provided through operating system functions for displaying text. Text content, text input caret location, and text attributes are available.

- (vii) Applications do not override user selected contrast and color selections and other individual display attributes.
- (viii) When animation is displayed, the information is displayable in at least one non-animated presentation mode at the option of the user.
- (ix) Color coding is not used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- (x) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels are provided.
- (xi) Software does not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.
- (xii) When electronic forms are used, the form allows people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

(3) Web-based intranet and internet information and applications.

- (i) A text equivalent for every non-text element is provided (e.g., via "alt", "longdesc", or in element content).
- (ii) Equivalent alternatives for any multimedia presentation are synchronized with the presentation.
- (iii) Web pages are designed so that all information conveyed with color is also available without color, for example from context or markup.
- (iv) Documents are organized so they are readable without requiring an associated style sheet.
- (v) Redundant text links are provided for each active region of a server-side image map.
- (vi) Client-side image maps are provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.
- (vii) Row and column headers are identified for data tables.
- (viii) Markup is used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.
- (ix) Frames are titled with text that facilitates frame identification and navigation.
- (x) Pages are designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
- (xi) A text-only page, with equivalent information or functionality, is provided to make a web site comply with the Access Board Standards (36 CFR Part 1194) when compliance cannot be accomplished in any other way. The content of the text-only page is updated whenever the primary page changes.
- (xii) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script is identified with functional text that can be read by assistive technology.

- (xiii) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page provides a link to a plug-in or applet that complies with 36 CFR 1194.21(a) through (l).
- (xiv) When electronic forms are designed to be completed on-line, the form allows people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.
- (xv) A method is provided that permits users to skip repetitive navigation links.
- (xvi) When a timed response is required, the user is alerted and given sufficient time to indicate more time is required.

(4) Telecommunications products.

- (i) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality provide a standard non-acoustic connection point for TTYs. Microphones are capable of being turned on and off to allow the user to intermix speech with TTY use.
- (ii) Telecommunications products which include voice communication functionality support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.
- (iii) Voice mail, auto-attendant, and interactive voice response telecommunications systems are usable by TTY users with their TTYs.
- (iv) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, give an alert when the time interval is about to run out, and provide sufficient time for the user to indicate more time is required.
- (v) Where provided, caller identification and similar telecommunications functions are also available for users of TTYs, and for users who cannot see displays.
- (vi) For transmitted voice signals, telecommunications products provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain is provided.
- (vii) If the telecommunications product allows a user to adjust the receive volume, a function is provided to automatically reset the volume to the default level after every use.
- (viii) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies is provided.
- (ix) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) is reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.
- (x) Products that transmit or conduct information or communication, will pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal

compression, format transformation, or similar techniques do not remove information needed for access or restore it upon delivery.

(xi) Products which have mechanically operated controls or keys, comply with the following:

- (A) Controls and keys are tactilely discernible without activating the controls or keys.
- (B) Controls and keys are operable with one hand and do not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys is 5 lbs. (22.2 N) maximum.
- (C) If key repeat is supported, the delay before repeat is adjustable to at least 2 seconds. Key repeat rate is adjustable to 2 seconds per character.
- (D) The status of all locking or toggle controls or keys is visually discernible, and discernible either through touch or sound.

(5) Video and multimedia products.

- (i) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, are equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, are be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.
- (ii) Television tuners, including tuner cards for use in computers, are to be equipped with secondary audio program playback circuitry.
- (iii) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, are open or closed captioned.
- (iv) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, are audio described.
- (v) Display or presentation of alternate text presentation or audio descriptions are user-selectable unless permanent.

(6) Self contained, closed products.

- (i) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.
- (ii) When a timed response is required, the user is alerted and given sufficient time to indicate more time is required.
- (iii) Where a product utilizes touch screens or contact-sensitive controls, an input method is provided that complies with 36 CFR 1194.23 (k) (1) through (4).

- (iv) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, is also provided.
- (v) When products provide auditory output, the audio signal is provided at a standard signal level through an industry standard connector that will allow for private listening. The product provides the ability to interrupt, pause, and restart the audio at anytime.
- (vi) When products deliver voice output in a public area, incremental volume control is provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level is user selectable. A function is provided to automatically reset the volume to the default level after every use.
- (vii) Color coding is not used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- (viii) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels is provided.
- (ix) Products are designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
 - (x) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls comply with the following:
 - (A) The position of any operable control is determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length.
 - (B) Where any operable control is 10 inches or less behind the reference plane, the height is 54 inches maximum and 15 inches minimum above the floor.
 - (C) Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height is 46 inches maximum and 15 inches minimum above the floor.
 - (D) Operable controls are not more than 24 inches behind the reference plane.

(7) Desktop and portable computers.

- (i) All mechanically operated controls and keys comply with 36 CFR 1194.23 (k) (1) through (4).
- (ii) If a product utilizes touch screens or touch-operated controls, an input method is provided that complies with 36 CFR 1194.23 (k) (1) through (4).
- (iii) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, is also provided.
- (iv) Where provided, at least one of each type of expansion slots, ports and connectors complies with publicly available industry standards.

(8) Functional performance criteria.

- (i) At least one mode of operation and information retrieval that does not require user vision is provided, or support for assistive technology used by people who are blind or visually impaired is provided.
- (ii) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 is provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired is provided.
- (iii) At least one mode of operation and information retrieval that does not require user hearing is provided, or support for assistive technology used by people who are deaf or hard of hearing is provided.
- (iv) Where audio information is important for the use of a product, at least one mode of operation and information retrieval is provided in an enhanced auditory fashion, or support for assistive hearing devices is provided.
- (v) At least one mode of operation and information retrieval that does not require user speech is provided, or support for assistive technology used by people with disabilities is provided.
- (vi) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength is provided.

(9) Information, documentation, and support.

- (i) Product support documentation provided to end-users is available in alternate formats upon request, at no additional charge.
- (ii) End-users have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.
- (iii) Support services for products accommodate the communication needs of end-users with disabilities.

APPENDIX B-4

AGAR Advisory 50 Implementation of Section 508: Instructions Specifically Addressing Purchase Card Users

December 31, 2002

(Source: http://www.usda.gov/procurement/policy/advisories_x/agarad50.htm)

December 31, 2002

AGAR ADVISORY

**UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF PROCUREMENT AND PROPERTY MANAGEMENT
PROCUREMENT POLICY DIVISION
AGAR ADVISORY NO. 50**

Implementation of Section 508 of the Rehabilitation Act of 1973, as amended Instructions Specifically Addressing Purchase Card Users

INTRODUCTION: This Agriculture Acquisition Regulation (AGAR) Advisory provides information, specifically for purchase card users and purchase card system managers, on implementation of Section 508 of the Rehabilitation Act of 1973, as amended.

SUMMARY: The Federal Acquisition Regulation previously provided an exception to the application of the Section 508 standards found in 36 CFR Part 1194. That exception has now been extended (80321 FEDERAL REGISTER Vol. 67, Number 251, Tuesday, December 31, 2002). Therefore, when electronic information technology is purchased in accordance with FAR Subpart 13.2 (micro-purchases of \$2,500 or less) prior to October 1, 2004 the Section 508 standards are not mandatory. However, card users are encouraged to seek compliance with the Section 508 standards to the maximum extent practicable.

SPECIFIC ISSUES:

What is "electronic and information technology?"

This phrase has a broad meaning. You should consider it to be most things of an electronic nature or anything that can in any way be considered information technology. This includes data systems, all forms of Internet sites, telecommunication products such as telephones, office equipment such as copiers and fax machines, calculators, computers, monitors, printers, software, hardware, and computer peripheral equipment. Operational electronic technology, such as elevator or heating and air conditioning controls and fire alarms, is not included.

What is the exception for cardholders?

If the card is used for a micro-purchase, that is a *stand-alone, open-market* purchase of *\$2,500 or less* and the action occurs *prior to October 1, 2004*, the action is **not** covered. However, you are strongly encouraged to apply the Section 508 standards to the maximum extent practicable.

Does the micro-purchase exception cover all purchases under \$2,500?

No. The exception is for a *stand-alone open-market* purchase that *totals \$2,500 or less*, made *before October 1, 2004*, as opposed to a purchase under an existing procurement document. For example, buying a software package that costs \$1,800 is not a micro-purchase if it is part of a purchase requirement totaling more than \$2,500 or is acquired under an existing contract.

If the card is used to pay any amount for a new order placed against an existing contract after June 25, that action **is** covered.

Beginning June 25, 2001, does Section 508 cover purchases made against Federal Supply Schedule Contracts, Government-Wide Acquisition Contracts (GWACs), multi-agency contracts, or agency indefinite-delivery, indefinite-quantity contracts?

Yes. These are examples of existing contracts. Orders under these contracts are not micro-purchases.

What do I have to do to buy conforming products or services in a micro-purchase of "electronic and information technology"?

Today, the best way for a cardholder to determine whether a particular product or service conforms with the Section 508 standards is to ask the seller. Your responsibility, for now, is to acquire conforming products or services as best you can.

You will need sufficient familiarity with the Section 508 standards issued by the Architectural and Transportation Barriers Compliance Board, an independent Federal Agency created by Section 502 of the Rehabilitation Act of 1973. The Section 508 standards were published as a final rule in the *Federal Register* on December 21, 2000. The Section 508 standards can be reviewed on the web site <http://www.ocio.usda.gov/>. USDA's procurement working tools can be found at <http://www.usda.gov/procurement/policy/advisories.html>.

Apply sufficient familiarity in accord to the value of the purchase. If you need \$400 in supplies, do not spend time studying the Section 508 standards. If your need is for \$2,300 in web services or a \$1,900 software package, scan the Section 508 standards as time is available. By October 2, 2004, you will need to be very familiar with the Section 508 standards. Training is recommended. Over time, more and more products and services will be clearly labeled as "conforming."

Why is the micro-purchase exception temporary?

The Federal government, through its acquisition rules, is attempting to change commercial practice. In drafting the rules, the expectation was that the various industries would have a sufficient number of conforming products and informative labeling available by the time the exemption expires.

Do products or services have to be completely conforming?

Under the micro-purchase exception, no. After the exception expires -- ideally, yes. You may be able to identify only partially conforming products and services. Then you should purchase the most conforming product or service that meets your needs.

Who can provide further information on USDA's implementation of Section 508?

Your agency has a representative to the USDA 508 Team and will soon have an implementation plan for addressing this change. The 508 Team Members are listed at <http://www.ocio.usda.gov/>.

If you have questions about this advisory, please contact J. R. Holcombe Jr. by telephone at (202) 720-8484, by fax at (202) 720-8972, or by email to Richard.Holcombe@USDA.gov

This advisory is available on the USDA procurement homepage at <http://www.usda.gov/procurement/policy/advisories.html>.

EXPIRATION DATE: October 2, 2004.

[END]

APPENDIX C

"Section 508", Public Law 105-220, Title IV, Subsection 408(b)

The Workforce Investment Act of 1998, Public Law 105-220, was enacted on August 7, 1998. Title IV of the Act is the Rehabilitation Act Amendments of 1998. Subsection 408(b) amended section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d). The full text of this section is included below.
(SOURCE: <http://www.usdoj.gov/crt/508/508law.html>)

PL 105-220, 1998 HR 1385

PL 105-220, enacted on August 7, 1998, 112 Stat 936

codified as: Section 504 of the Rehabilitation Act, 29 U.S.C. § 794d

WORKFORCE INVESTMENT ACT OF 1998

SEC. 508. ELECTRONIC AND INFORMATION TECHNOLOGY.

(a) REQUIREMENTS FOR FEDERAL DEPARTMENTS AND AGENCIES.--

(1) ACCESSIBILITY.--

(A) DEVELOPMENT, PROCUREMENT, MAINTENANCE, OR USE OF ELECTRONIC AND INFORMATION TECHNOLOGY.--When developing, procuring, maintaining, or using electronic and information technology, each Federal department or agency, including the United States Postal Service, shall ensure, unless an undue burden would be imposed on the department or agency, that the electronic and information technology allows, regardless of the type of medium of the technology--

(i) individuals with disabilities who are Federal employees to have access to and use of information and data that is comparable to the access to and use of the information and data by Federal employees who are not individuals with disabilities; and

(ii) individuals with disabilities who are members of the public seeking information or services from a Federal department or agency to have access to and use of information and data that is comparable to the access to and use of the information and data by such members of the public who are not individuals with disabilities.

(B) ALTERNATIVE MEANS EFFORTS.--When development, procurement, maintenance, or use of electronic and information technology that meets the standards published by the Access Board under paragraph (2) would impose an undue burden, the Federal department or agency shall provide individuals with disabilities covered by paragraph (1) with the information and data involved by an alternative means of access that allows the individual to use the information and data.

(2) ELECTRONIC AND INFORMATION TECHNOLOGY STANDARDS.--

(A) IN GENERAL.--Not later than 18 months after the date of enactment of the Rehabilitation Act Amendments of 1998, the Architectural and Transportation Barriers Compliance Board (referred to in this section as the 'Access Board'), after consultation with the Secretary of Education, the Administrator of General Services, the Secretary of Commerce, the Chairman of the Federal Communications Commission, the Secretary of Defense, and the head of any other Federal department or agency that the Access Board determines to be appropriate, including consultation on relevant research findings, and after consultation with the electronic and information technology industry and appropriate public or nonprofit agencies or organizations, including organizations representing individuals with disabilities, shall issue and publish standards setting forth--

(i) for purposes of this section, a definition of electronic and information technology that is consistent with the definition of information technology specified in section 5002(3) of the Clinger-Cohen Act of 1996 (40 U.S.C. 1401(3)); and

(ii) the technical and functional performance criteria necessary to implement the requirements set forth in paragraph (1).

(B) REVIEW AND AMENDMENT.--The Access Board shall periodically review and, as appropriate, amend the standards required under subparagraph (A) to reflect technological advances or changes in electronic and information technology.

(3) INCORPORATION OF STANDARDS.--Not later than 6 months after the Access Board publishes the standards required under paragraph (2), the Federal Acquisition Regulatory Council shall revise the Federal Acquisition Regulation and each Federal department or agency shall revise the Federal procurement policies and directives under the control of the department or agency to incorporate those standards. Not later than 6 months after the Access Board revises any standards required under paragraph (2), the Council shall revise the Federal Acquisition Regulation and each appropriate Federal department or agency shall revise the procurement policies and directives, as necessary, to incorporate the revisions.

(4) ACQUISITION PLANNING.--In the event that a Federal department or agency determines that compliance with the standards issued by the Access Board under paragraph (2) relating to procurement imposes an undue burden, the documentation by the department or agency supporting the procurement shall explain why compliance creates an undue burden.

(5) EXEMPTION FOR NATIONAL SECURITY SYSTEMS.--This section shall not apply to national security systems, as that term is defined in section 5142 of the Clinger-Cohen Act of 1996 (40 U.S.C. 1452).

(6) CONSTRUCTION.--

(A) EQUIPMENT.--In a case in which the Federal Government provides access to the public to information or data through electronic and information technology, nothing in this section shall be construed to require a Federal department or agency--

(i) to make equipment owned by the Federal Government available for access and use by individuals with disabilities covered by paragraph (1) at a location other than that where the electronic and information technology is provided to the public; or

(ii) to purchase equipment for access and use by individuals with disabilities covered by paragraph (1) at a location other than that where the electronic and information technology is provided to the public.

(B) SOFTWARE AND PERIPHERAL DEVICES.--Except as required to comply with standards issued by the Access Board under paragraph (2), nothing in paragraph (1) requires the installation of specific accessibility-related software or the attachment of a specific accessibility-related peripheral device at a workstation of a Federal employee who is not an individual with a disability.

(b) TECHNICAL ASSISTANCE.--The Administrator of General Services and the Access Board shall provide technical assistance to individuals and Federal departments and agencies concerning the requirements of this section.

(c) AGENCY EVALUATIONS.--Not later than 6 months after the date of enactment of the Rehabilitation Act Amendments of 1998, the head of each Federal department or agency shall evaluate the extent to which the electronic and information technology of the department or agency is accessible to and usable by individuals with disabilities described in subsection (a)(1), compared to the access to and use of the technology by individuals described in such subsection who are not individuals with disabilities, and submit a report containing the evaluation to the Attorney General.

(d) REPORTS.--

(1) INTERIM REPORT.--Not later than 18 months after the date of enactment of the Rehabilitation Act Amendments of 1998, the Attorney General shall prepare and submit to the President a report containing information on and recommendations regarding the extent to which the electronic and information technology of the Federal Government is accessible to and usable by individuals with disabilities described in subsection (a)(1).

(2) BIENNIAL REPORTS.--Not later than 3 years after the date of enactment of the Rehabilitation Act Amendments of 1998, and every 2 years thereafter, the Attorney General shall prepare and submit to the President and Congress a report containing information on and recommendations regarding the state of Federal department and agency compliance with the requirements of this section, including actions regarding individual complaints under subsection (f).

(e) COOPERATION.--Each head of a Federal department or agency (including the Access Board, the Equal Employment Opportunity Commission, and the General Services Administration) shall provide to the Attorney General such information as the Attorney General determines is necessary to conduct the evaluations under subsection (c) and prepare the reports under subsection (d).

(f) ENFORCEMENT.--

(1) GENERAL.--

(A) COMPLAINTS.--Effective 2 years after the date of enactment of the Rehabilitation Act Amendments of 1998, any individual with a disability may file a complaint alleging that a Federal department or agency fails to comply with subsection (a)(1) in providing electronic and information technology.

(B) APPLICATION.--This subsection shall apply only to electronic and information technology that is procured by a Federal department or agency not less than 2 years after the date of enactment of the Rehabilitation Act Amendments of 1998.

(2) ADMINISTRATIVE COMPLAINTS.--Complaints filed under paragraph (1) shall be filed with the Federal department or agency alleged to be in noncompliance. The Federal department or agency receiving the complaint shall apply the complaint procedures established to implement section 504 for resolving allegations of discrimination in a federally conducted program or activity.

(3) CIVIL ACTIONS.--The remedies, procedures, and rights set forth in sections 505(a)(2) and 505(b) shall be the remedies, procedures, and rights available to any individual with a disability filing a complaint under paragraph (1).

(g) APPLICATION TO OTHER FEDERAL LAWS.--This section shall not be construed to limit any right, remedy, or procedure otherwise available under any provision of Federal law (including sections 501 through 505) that provides greater or equal protection for the rights of individuals with disabilities than this section.

APPENDIX D

Text of Final Rule, ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

(Reference: <http://www.access-board.gov/sec508/508standards.htm>)

Electronic and Information Technology Accessibility Standards ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD

[Published in the *Federal Register* on December 21, 2000]

36 CFR Part 1194

[Docket No. 2000-01]

RIN 3014-AA25

PART 1194 -- ELECTRONIC AND INFORMATION TECHNOLOGY ACCESSIBILITY STANDARDS

Subpart A -- General

Sec.

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Authority: 29 U.S.C. 794d.

Subpart A -- General

§ 1194.1 Purpose.

The purpose of this part is to implement section 508 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794d). Section 508 requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, Federal employees with disabilities have access to and use of information and data that is comparable to the access and use by Federal employees who are not individuals with disabilities, unless an undue burden would be imposed on the agency. Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a Federal agency, have access to and use of information and data that is comparable to that provided to the public who are not individuals with disabilities, unless an undue burden would be imposed on the agency.

§ 1194.2 Application.

(a) Products covered by this part shall comply with all applicable provisions of this part. When developing, procuring, maintaining, or using electronic and information technology, each agency shall ensure that the products comply with the applicable provisions of this part, unless an undue burden would be imposed on the agency.

(1) When compliance with the provisions of this part imposes an undue burden, agencies shall provide individuals with disabilities with the information and data involved by an alternative means of access that allows the individual to use the information and data.

(2) When procuring a product, if an agency determines that compliance with any provision of this part imposes an undue burden, the documentation by the agency supporting the procurement shall explain why, and to what extent, compliance with each such provision creates an undue burden.

(b) When procuring a product, each agency shall procure products which comply with the provisions in this part when such products are available in the commercial marketplace or when such products are developed in response to a Government solicitation. Agencies cannot claim a product as a whole is not commercially available because no product in the marketplace meets all the standards. If products are commercially available that meet some but not all of the standards, the agency must procure the product that best meets the standards.

(c) Except as provided by §1194.3(b), this part applies to electronic and information technology developed, procured, maintained, or used by agencies directly or used by a contractor under a contract with an agency which requires the use of such product, or requires the use, to a significant extent, of such product in the performance of a service or the furnishing of a product.

§ 1194.3 General exceptions.

(a) This part does not apply to any electronic and information technology operated by agencies, the function, operation, or use of which involves intelligence activities, cryptologic activities related to national security, command and control of military forces, equipment that is an integral part of a weapon or weapons system, or systems which are critical to the direct fulfillment of military or intelligence missions. Systems which are critical to the direct fulfillment of military or intelligence missions do not include a system that is to be used for routine administrative and business applications (including payroll, finance, logistics, and personnel management applications).

(b) This part does not apply to electronic and information technology that is acquired by a contractor incidental to a contract.

(c) Except as required to comply with the provisions in this part, this part does not require the installation of specific accessibility-related software or the attachment of an assistive technology device at a workstation of a Federal employee who is not an individual with a disability.

(d) When agencies provide access to the public to information or data through electronic and information technology, agencies are not required to make products owned by the agency available for access and use by individuals with disabilities at a location other than that where the electronic and information technology is provided to the public, or to purchase products for access and use by individuals with disabilities at a location other than that where the electronic and information technology is provided to the public.

(e) This part shall not be construed to require a fundamental alteration in the nature of a product or its components.

(f) Products located in spaces frequented only by service personnel for maintenance, repair, or occasional monitoring of equipment are not required to comply with this part.

§ 1194.4 Definitions.

The following definitions apply to this part:

Agency. Any Federal department or agency, including the United States Postal Service.

Alternate formats. Alternate formats usable by people with disabilities may include, but are not limited to, Braille, ASCII text, large print, recorded audio, and electronic formats that comply with this part.

Alternate methods. Different means of providing information, including product documentation, to people with disabilities. Alternate methods may include, but are not limited to, voice, fax, relay service, TTY, Internet posting, captioning, text-to-speech synthesis, and audio description.

Assistive technology. Any item, piece of equipment, or system, whether acquired commercially, modified, or customized, that is commonly used to increase, maintain, or improve functional capabilities of individuals with disabilities.

Electronic and information technology. Includes information technology and any equipment or interconnected system or subsystem of equipment, that is used in the creation, conversion, or duplication of data or information. The term electronic and information technology includes, but is not limited to, telecommunications products (such as telephones), information kiosks and transaction machines, World Wide Web sites, multimedia, and office equipment such as copiers and fax machines. The term does not include any equipment that contains embedded information technology that is used as an integral part of the product, but the principal function of which is not the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For example, HVAC (heating, ventilation, and air conditioning) equipment such as thermostats or temperature control devices, and medical equipment where information technology is integral to its operation, are not information technology.

Information technology. Any equipment or interconnected system or subsystem of equipment, that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. The term information technology includes computers, ancillary equipment, software, hardware, services (including support services), and related resources.

Operable controls. A component of a product that requires physical contact for normal operation. Operable controls include, but are not limited to, mechanically operated controls, input and output trays, card slots, keyboards, or keypads.

Product. Electronic and information technology.

Self Contained, Closed Products. Products that generally have embedded software and are commonly designed in such a fashion that a user cannot easily attach or install assistive technology. These products include, but are not limited to, information kiosks and information transaction machines, copiers, printers, calculators, fax machines, and other similar types of products.

Telecommunications. The transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received.

TTY. An abbreviation for teletypewriter. Machinery or equipment that employs interactive text based communications through the transmission of coded signals across the telephone network. TTYS may include, for example, devices known as TDDs (telecommunication display devices or telecommunication devices for deaf persons) or computers with special modems. TTYS are also called text telephones.

Undue burden. Undue burden means significant difficulty or expense. In determining whether an action would result in an undue burden, an agency shall consider all agency resources available to the program or component for which the product is being developed, procured, maintained, or used.

§ 1194.5 Equivalent facilitation.

Nothing in this part is intended to prevent the use of designs or technologies as alternatives to those prescribed in this part provided they result in substantially equivalent or greater access to and use of a product for people with disabilities.

Subpart B -- Technical Standards

§ 1194.21 Software applications and operating systems.

(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.

(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming

interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.

(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.

(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.

(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.

(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.

(g) Applications shall not override user selected contrast and color selections and other individual display attributes.

(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.

(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.

(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

(l) When electronic forms are used, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

§ 1194.22 Web-based intranet and internet information and applications.

(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

(d) Documents shall be organized so they are readable without requiring an associated style sheet.

(e) Redundant text links shall be provided for each active region of a server-side image map.

(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.

(g) Row and column headers shall be identified for data tables.

(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

(i) Frames shall be titled with text that facilitates frame identification and navigation.

(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).

(n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

(o) A method shall be provided that permits users to skip repetitive navigation links.

(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

Note to §1194.22: 1. The Board interprets paragraphs (a) through (k) of this section as consistent with the following priority 1 Checkpoints of the Web Content Accessibility Guidelines 1.0 (WCAG 1.0) (May 5, 1999) published by the Web Accessibility Initiative of the World Wide Web Consortium:

Section 1194.22 Paragraph	WCAG 1.0 Checkpoint
(a)	1.1
(b)	1.4
(c)	2.1
(d)	6.1
(e)	1.2
(f)	9.1
(g)	5.1
(h)	5.2
(i)	12.1
(j)	7.1
(k)	11.4

2. Paragraphs (l), (m), (n), (o), and (p) of this section are different from WCAG 1.0. Web pages that conform to WCAG 1.0, level A (i.e., all priority 1 checkpoints) must also meet paragraphs (l), (m), (n), (o), and (p) of this section to comply with this section. WCAG 1.0 is available at <http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>.

§ 1194.23 Telecommunications products.

(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.

(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.

(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.

(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.

(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.

(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.

(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.

(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.

- (i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.
- (j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.
- (k) Products which have mechanically operated controls or keys, shall comply with the following:
 - (1) Controls and keys shall be tactilely discernible without activating the controls or keys.
 - (2) Controls and keys shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2 N) maximum.
 - (3) If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.
 - (4) The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.

§ 1194.24 Video and multimedia products.

- (a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.
- (b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.
- (c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.
- (d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.
- (e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

§ 1194.25 Self contained, closed products.

- (a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach assistive technology to the product. Personal headsets for private listening are not assistive technology.
- (b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.
- (c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).
- (d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.
- (e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.

(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.

(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.

(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

(j) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following:

(1) The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length (see [Figure 1](#) of this part).

(2) Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.

(3) Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.

(4) Operable controls shall not be more than 24 inches behind the reference plane (see [Figure 2](#) of this part).

§ 1194.26 Desktop and portable computers.

(a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through (4).

(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).

(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.

(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards.

Subpart C -- Functional Performance Criteria

§ 1194.31 Functional performance criteria.

(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for assistive technology used by people who are blind or visually impaired shall be provided.

(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for assistive technology used by people who are visually impaired shall be provided.

(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for assistive technology used by people who are deaf or hard of hearing shall be provided.

(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.

(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for assistive technology used by people with disabilities shall be provided.

(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.

Subpart D -- Information, Documentation, and Support

§ 1194.41 Information, documentation, and support.

(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.

(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.

(c) Support services for products shall accommodate the communication needs of end-users with disabilities.

Figures to Part 1194

[Figure 1](#)

[Figure 2](#)

1. Section 508 does not apply to national security systems, as that term is defined in section 5142 of the Clinger-Cohen Act of 1996 (40 U.S.C. 1452).

2. The Access Board is an independent Federal agency established by section 502 of the Rehabilitation Act (29 U.S.C. 792) whose primary mission is to promote accessibility for individuals with disabilities. The Access Board consists of 25 members. Thirteen are appointed by the President from among the public, a majority of who are required to be individuals with disabilities. The other twelve are heads of the following Federal agencies or their designees whose positions are Executive Level IV or above: The departments of Health and Human Services, Education, Transportation, Housing and Urban Development, Labor, Interior, Defense, Justice, Veterans Affairs, and Commerce; the General Services Administration; and the United States Postal Service.

3. Whenever the Access Board revises its standards, the Federal Acquisition Regulatory Council is required to revise the FAR, and each appropriate Federal agency is required to revise its procurement policies and directives within six months to incorporate the revisions.

4. 48 CFR Chapter 1, part 2, §2.101 Definitions Information Technology (c).

APPENDIX E

Federal Acquisition Regulations (FAR) Rule For Implementing Section 508 of the Rehabilitation Act of 1973 Electronic and Information Technology Accessibility for Persons with Disabilities

Including the text of the Final Rule as published in the Federal Register April 25, 2001, and including the current version of the FAR, incorporating subsequent amendments.

References:

Final Rule as published in the Federal Register, April 25, 2001, at:

<http://www.access-board.gov/sec508/508standards.htm>

This includes a summary, and background discussions.

The full text of the FAR, Subpart 39.2, current version , as of August 25, 2003:

http://www.arnet.gov/far/current/html/Subpart_39_2.html)

Appendix E-1

Federal Acquisition Regulations (FAR) Final Rule As published in the Federal Register on April 25, 2001

(Source: <http://www.section508.gov/index.cfm?FuseAction=Content&ID=13>)

Note: This is the final rule, as published in the Federal Register on April 25, 2001, which includes a summary and background information. The actual FAR, including subsequent amendments, is included in Appendix E-2, which follows.

DEPARTMENT OF DEFENSE
GENERAL SERVICES ADMINISTRATION
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
48 CFR Parts 2, 7, 10, 11, 12, and 39
[FAC 97-27; FAR Case 1999-607]
RIN 9000-AI69

Federal Acquisition Regulation; Electronic and Information
Technology Accessibility

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Final rule.

SUMMARY: The Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) have agreed on a final rule amending the Federal Acquisition Regulation (FAR) to implement Section 508 of the Rehabilitation Act of 1973. Subsection 508(a)(3) requires the FAR to be revised to incorporate standards developed by the Architectural and Transportation Barriers Compliance Board (also referred to as the "Access Board").

DATES: Effective Date: June 25, 2001.

Applicability Date: For other than indefinite-quantity contracts, this amendment applies to contracts awarded on or after the effective date. For indefinite-quantity contracts, it is applicable to delivery orders or task orders issued on or after the effective date.

FOR FURTHER INFORMATION CONTACT: The FAR Secretariat, Room 4035, GS Building, Washington, DC 20405, (202) 501-4755, for information pertaining to status or publication schedules. For clarification of content, contact Ms. Linda Nelson, Procurement Analyst, at (202) 501-1900. Please cite FAC 97-27, FAR case 1999-607.

SUPPLEMENTARY INFORMATION:

A. Background

The Workforce Investment Act of 1998, Public Law 105-220, was enacted on August 7, 1998. Title IV of the Act is the Rehabilitation Act Amendments of 1998. Subsection 408(b) amended section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d). Subsection 508(a)(1) requires that when Federal departments or agencies develop, procure, maintain, or use Electronic and Information Technology (EIT), they must ensure that the EIT allows Federal employees with disabilities to have

access to and use of information and data that is comparable to the access to and use of information and data by other Federal employees. Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a Federal department or agency, have access to and use of information and data that is comparable to that provided to the public without disabilities. Comparable access is not required if it would impose an undue burden.

Subsection 508(a)(2)(A) required the Access Board to publish standards setting forth a definition of EIT and the technical and functional performance criteria necessary for accessibility for such technology by February 7, 2000. Subsection 508(a)(3) required the Federal Acquisition Regulatory Council to revise the FAR to incorporate the Access Board's standards not later than 6 months after the Access Board regulations were published. The Access Board published the final standards in the Federal Register at 65 FR 80500, December 21, 2000.

A proposed rule to amend the FAR was published in the Federal Register at 66 FR 7166, January 22, 2001. The 60-day comment period ended March 23, 2001.

This final rule implements the Access Board's regulations by—

- Including the definition of the term "electronic and information technology," a term created by the statute;
- Incorporating the EIT Standards in acquisition planning, market research, and when describing agency needs; and
- Adding a new Subpart 39.2.

Applicability

The proposed rule did not address the issue of whether the new rule would apply to contracts already in existence. A number of public commentors asked for clarification about the applicability of the rule.

For other than indefinite-quantity contracts, this amendment applies to contracts awarded on or after the effective date. For indefinite-quantity contracts, it is applicable to delivery orders or task orders issued on or after the effective date. Indefinite quantity contracts may include Federal Supply Schedule contracts, governmentwide acquisition contracts (GWACs), multi-agency contracts (MACs), and other interagency acquisitions. Exception determinations are not required for award of the underlying indefinite-quantity contracts, except for requirements that are to be satisfied by initial award. Indefinite-quantity contracts may include noncompliant items, provided that any task or delivery order issued for noncompliant EIT meets an applicable exception. Accordingly, requiring activities must ensure compliance with the EIT accessibility standards at 36 CFR part 1194 (or that an exception applies) at time of issuance of task or delivery orders.

Contracting offices that award indefinite-quantity contracts must indicate to ordering offices which supplies and services the contractor indicates as compliant, and show where full details of compliance can be found (e.g., vendor's or other exact web page location).

The Access Board's EIT standards at 36 CFR part 1194 do not apply to—

- Taking delivery for items ordered prior to the effective date of this rule;
- Within-scope modifications of contracts awarded before the effective date of this rule;
- Exercising unilateral options for contracts awarded before the effective date of this rule; or
- Multiyear contracts awarded before the effective date of this rule.

Exceptions

Unless an exception at FAR 39.204 applies, acquisitions of EIT supplies and services must meet the applicable accessibility standards at 36 CFR part 1194. The exceptions in 39.204 include—

- Micro-purchases, prior to January 1, 2003. However, for micro-purchases, contracting officers and other individuals designated in accordance with 1.603-3 are strongly encouraged to comply with the applicable accessibility standards to the maximum extent practicable;
- EIT for a national security system;
- EIT acquired by a contractor incidental to a contract;
- EIT located in spaces frequented only by service personnel for maintenance, repair or occasional monitoring of equipment; and
- EIT that would impose an undue burden on the agency.

Micro-purchases

The exception for micro-purchases was in the proposed rule. It was made in recognition of the fact that almost all micro-purchases are made using the Governmentwide commercial purchase card. Government personnel, who are not warranted contracting officers, use the purchase card to purchase commercial-off-the-shelf items. Use of the purchase card makes it generally impractical to comply with the EIT accessibility standards unless commercial-off-the-shelf products are labeled for standards compliance. Manufacturers are continuing to develop products that comply with the EIT accessibility standards. It is expected that almost all products will comply with the standards within the next two years, and be labeled by the manufacturer accordingly. Therefore, we have established a sunset date of January 1, 2003, for the micro-purchase exemption. Prior to that date, the Government will revisit the state of technology and the pace at which manufacturers have conformed to the required standards.

The micro-purchase exception does not exempt all products that cost under \$2,500. Some commentors were confused about this. The exception is for a one-time purchase that totals \$2,500 or less, made on the open market rather than under an existing contract. A software package that costs \$1,800 is not a micro-purchase if it is part of a \$3,000 purchase, or part of a \$3,000,000 purchase. Regardless of purchase price, there still is an agency requirement to give reasonable accommodation for the disabled under section 504 of the Rehabilitation Act of 1973. The current micro-purchase limit is \$2,500, set by statute. If the threshold is increased by a statutory change, the FAR Council will consider keeping the FAR Subpart 39.2 limit at \$2,500.

In addition, GSA will recommend that agencies modify cardholder training to remind purchase cardholders of EIT accessibility requirements.

Undue burden

Another set of comments wanted the FAR to elaborate on undue burden. The Access Board discussed undue burden in its final rule preamble (at 65 FR 80506 of the Federal Register). Substantial case law exists on this term, which comes from disability law. The Access Board chose not to disturb the existing understanding of the term by trying to define it. The FAR Council agrees with this approach. Agencies are required by statute to document the basis for an undue burden. Requiring officials should be aware that when there is an undue burden, the statute requires an alternative means of access to be provided to individuals with disabilities.

Clauses

Some commentors asked for a clause, pointing out that unless the FAR prescribes a clause, agencies may produce different clauses, resulting in inconsistent coverage across the Government. Some procurement offices want a clause to help address their lack of experience with the Access Board standards. No clauses were in the January proposed rule. The FAR Council is carefully considering whether clauses are needed and welcomes comments on this issue that would inform a potential rulemaking.

Other issues

A topic of concern to commentors was the play between the definition of EIT and a contractor's incidental use of EIT. The rule was not intended to automatically apply to a contractor's internal workplaces. For example, EIT neither used nor accessed by Federal employees or members of the public is not subject to the Access Board's standards (contractor employees in their professional capacity are not members of the public for purposes of section 508).

Commentors asked for further information on section 508 product compliance. There is a website at <http://www.section508.gov/>, providing information from manufacturers and vendors on how they meet Access Board standards. The website reference has been added to the FAR language at Subpart 39.2.

Commentors asked whether the Committee for Purchase from People Who Are Blind or Severely Disabled, and Federal Prison Industries (UNICOR) were covered. These are required sources for certain items. Agencies must consider noncompliant EIT items from these sources the same way that they would consider items from commercial sources, *i.e.*, whether purchasing the item would come under an exception. As a matter of policy, purchases from the Committee for Purchase from People Who Are Blind or Severely Disabled and Federal Prison Industries are to be treated as procurements.

The current status of compliance testing also was discussed in comments. Currently there is no uniform testing. However, there is an industry-led, Government-sponsored, program in the works, Accessibility for People with Disabilities through Standards Interoperability and Testing (ADIT). See the Section 508 website for information.

Questions arose on draft rule section 39.X03, Applicability, on the interpretation of standards available in the marketplace. The rule intended to recognize that initially there will be many products that do not meet all the Access Board's technical standards. Agencies may need to acquire these products. When acquiring commercial items, an agency must comply with those accessibility standards that can be met with supplies and services available in the commercial marketplace in time to meet the agency's delivery requirements. Individual standards that cannot be met would be documented by the requiring official, with a copy to the contract file. If products are available that meet some, but not all applicable standards, agencies cannot claim a product as a whole is nonavailable just because it does not meet all of the standards.

Requirements development, market research, and solicitations

The requiring official must identify which standards apply to the procurement, using the Access Board's EIT Accessibility Standards at 36 CFR part 1194. Then the requiring official must perform market research to determine the availability of compliant products and

services; vendor websites and the Section 508 website would be helpful here. The requiring official must then identify which standards, if any, would not apply in this procurement because of, for example, nonavailability (FAR 39.203) or undue burden (FAR 39.204(e)). Technical specifications and minimum requirements would be developed based on the market research results and agency needs. This information would be submitted with the purchase request. The solicitation would then be drafted, or a task order or delivery order would be placed. Proposal evaluation may yield additional information that could require reconsideration of the need for an exception.

B. Executive Order 12866

The Access Board determined that their December 21, 2000, final rule was an economically significant regulatory action under E.O. 12866, and was a major rule under 5 U.S.C. 804. An economic assessment was accomplished and was placed on the Access Board's website at <http://www.access-board.gov/sec508/assessment.htm>. A copy can be obtained from the Access Board. The FAR Council has determined that the assessment conducted by the Access Board provides an adequate economic assessment of both the Access Board rule and this change to the FAR. Accordingly, the Access Board's regulatory assessment meets the requirement of performing a regulatory assessment for this change to the FAR and no further assessment is necessary.

This is an economically significant regulatory action and was subject to review under Section 6(b) of Executive Order 12866, Regulatory Planning and Review, dated September 30, 1993. This rule is a major rule under 5 U.S.C. 804.

C. Regulatory Flexibility Act

This rule has a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act, 5 U.S.C. 601, *et seq.*, because small businesses that choose to market their products to the Federal Government must ensure that their electronic and information technology supplies or services meet the substantive requirements of the Access Board's standards. Since this may result in increased costs of producing and selling their products, a Final Regulatory Flexibility Analysis (FRFA) has been performed and the analysis is summarized as follows:

The objective of this rule is to revise the FAR to improve the accessibility of electronic and information technology used by the Federal Government. The standards developed by the Access Board affect Federal employees with disabilities as well as members of the public with disabilities who seek to use Federal electronic and information technologies to access information. This increased access reduces barriers to employment in the Federal Government for individuals with disabilities and reduces the probability that Federal employees with disabilities will be under-employed. The EIT standards developed for the Federal Government may result in benefiting people outside the Federal workforce, both with and without disabilities. The accessible technology from the Federal Government may spill over to the rest of society.

Section 508 uses the Federal procurement process to ensure that technology acquired by the Federal Government is accessible. Failure of an agency to purchase electronic and information technology that complies with the standards promulgated at 36 CFR part 1194, may result in an individual with a disability filing a complaint alleging that a Federal agency has not complied with the standards. Individuals may also file a civil action against an agency. The enforcement provision of section 508 takes effect June 21, 2001.

This rule establishes that contractors must manufacture, sell, or lease electronic and information technology supplies or services that comply with standards promulgated at 36 CFR part 1194. For many contractors, this may simply involve a review of the supply or service with the standards to confirm compliance. For other contractors, these standards could require redesign of a supply or service before it can be sold to the Federal Government. According to the Federal Procurement Data System in fiscal year 2000, we estimate that there are approximately 17,550 contractors to which the rule will apply. Approximately, 58 percent, or 10,150, of these contractors are small businesses.

Small businesses will have to analyze whether the electronic and information technology they or their customers plan to sell to the Federal Government complies with the standards. Manufacturers may want to redesign to make their supplies and services compliant, to have a better chance for their items to be purchased by the Government. Retailers will need to coordinate with the manufacturers. The statute will decrease demand for some supplies and services that are not compliant, leading to decreased sales for small entities manufacturing or selling those items. Conversely, the statute will increase demand for some supplies and services that are compliant, leading to increased sales for small entities manufacturing or selling those items.

Since the statute imposes private enforcement, where individuals with disabilities can file civil rights lawsuits, the Government has little flexibility for alternatives in writing this regulation. To meet the requirements of the law, we cannot exempt small businesses from any part of the rule.

The FAR Secretariat has submitted a copy of the FRFA to the Chief Counsel for Advocacy of the Small Business Administration. A copy of the FRFA may be obtained from the FAR Secretariat. The Councils will consider comments from small entities concerning the affected FAR parts in accordance with 5 U.S.C. 610. Comments must be submitted separately and should cite 5 U.S.C. 601, et seq. (FAR case 1999-607), in correspondence.

D. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the changes to the FAR do not impose information collection requirements that require

the approval of the Office of Management and Budget under 44 U.S.C. 3501, et seq.

List of Subjects in 48 CFR parts 2, 7, 10, 11, 12, and 39:

Government procurement.

Dated:

AL MATERA,
Director,
Acquisition Policy Division.

Appendix E-2

Federal Acquisition Regulations (FAR)

Subpart 39.2- Electronic and Information Technology

Current as of August 25, 2003

(Source: http://www.arnet.gov/far/current/html/Subpart_39_2.html)

Subpart 39.2- Electronic and Information Technology

39.201 Scope of subpart.

(a) This subpart implements Section 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794d), and the Architectural and Transportation Barriers Compliance Board Electronic and Information Technology (EIT) Accessibility Standards (36 CFR part 1194).

(b) Further information on Section 508 is available via the Internet at <http://www.section508.gov/>.

(c) When acquiring EIT, agencies must ensure that-

(1) Federal employees with disabilities have access to and use of information and data that is comparable to the access and use by Federal employees who are not individuals with disabilities; and

(2) Members of the public with disabilities seeking information or services from an agency have access to and use of information and data that is comparable to the access to and use of information and data by members of the public who are not individuals with disabilities.

39.202 Definition.

Undue burden, as used in this subpart, means a significant difficulty or expense.

39.203 Applicability.

(a) Unless an exception at 39.204 applies, acquisitions of EIT supplies and services must meet the applicable accessibility standards at 36 CFR part 1194.

(b)(1) Exception determinations are required prior to contract award, except for indefinite-quantity contracts (see paragraph (b)(2) of this section).

(2) Exception determinations are not required prior to award of indefinite-quantity contracts, except for requirements that are to be satisfied by initial award. Contracting offices that award indefinite-quantity contracts must indicate to requiring and ordering activities which supplies and services the contractor indicates as compliant, and show where full details of compliance can be found (*e.g.*, vendor's or other exact website location).

(3) Requiring and ordering activities must ensure supplies or services meet the applicable accessibility standards at 36 CFR part 1194, unless an exception applies, at the time of issuance of task or delivery orders. Accordingly, indefinite-quantity contracts may include noncompliant items; however, any task or delivery order issued for noncompliant items must meet an applicable exception.

(c)(1) When acquiring commercial items, an agency must comply with those accessibility standards that can be met with supplies or services that are available in the commercial marketplace in time to meet the agency's delivery requirements.

(2) The requiring official must document in writing the nonavailability, including a description of market research performed and which standards cannot be met, and provide documentation to the contracting officer for inclusion in the contract file.

39.204 Exceptions.

The requirements in 39.203 do not apply to EIT that-

(a) Is purchased in accordance with Subpart 13.2 (micro-purchases) prior to October 1, 2004. However, for micro-purchases, contracting officers and other individuals designated in accordance with 1.603-3 are strongly encouraged to comply with the applicable accessibility standards to the maximum extent practicable;

(b) Is for a national security system;

(c) Is acquired by a contractor incidental to a contract;

(d) Is located in spaces frequented only by service personnel for maintenance, repair or occasional monitoring of equipment; or

(e) Would impose an undue burden on the agency.

(1) *Basis.* In determining whether compliance with all or part of the applicable accessibility standards in 36 CFR part 1194 would be an undue burden, an agency must consider-

(i) The difficulty or expense of compliance; and

(ii) Agency resources available to its program or component for which the supply or service is being acquired.

(2) *Documentation.*

(i) The requiring official must document in writing the basis for an undue burden decision and provide the documentation to the contracting officer for inclusion in the contract file.

(ii) When acquiring commercial items, an undue burden determination is not required to address individual standards that cannot be met with supplies or service available in the commercial marketplace in time to meet the agency delivery requirements (see 39.203(c)(2) regarding documentation of nonavailability).

APPENDIX F

Federal Acquisition Regulation; Section 508 Micro-Purchase Exception Sunset Provision

(Source: <http://www.arnet.gov/far/ProposedRules/2002-012.pdf>)

80321 Federal Register / Vol. 67, No. 251 / Tuesday, December 31, 2002 / Rules and Regulations

**DEPARTMENT OF DEFENSE
GENERAL SERVICES
ADMINISTRATION
NATIONAL AERONAUTICS AND
SPACE ADMINISTRATION
48 CFR Part 39
[FAC 2001-11; FAR Case 2002-012; Item
II]
RIN 9000-AJ53
Federal Acquisition Regulation;
Section 508 Micro-Purchase Exception
Sunset Provision**

AGENCIES: Department of Defense (DoD), General Services Administration (GSA), and National Aeronautics and Space Administration (NASA).

ACTION: Interim rule with request for comments.

SUMMARY: The Civilian Agency Acquisition Council and the Defense Acquisition Regulations Council (Councils) have agreed on an interim rule amending the Federal Acquisition Regulation (FAR) to extend the electronic and information technology (Section 508) micro-purchase exception to October 1, 2004.

DATES: *Effective Date:* January 1, 2003.
Comment Date: Interested parties should submit comments to the FAR Secretariat at the address shown below on or before March 3, 2003 to be considered in the formulation of a final rule.

ADDRESSES: Submit written comments to: General Services Administration, FAR Secretariat (MVA), 1800 F Street, NW., Room 4035, Attn: Ms. Laurie Duarte, Washington, DC 20405. Submit electronic comments via the Internet to: farcase.2002-012@gsa.gov. Please submit comments only and cite FAC 2001-11, FAR case 2002-012, in all correspondence related to this case.

FOR FURTHER INFORMATION CONTACT: The FAR Secretariat, Room 4035, GS Building, Washington, DC 20405, (202) 501-4755, for information pertaining to status or publication schedules. The TTY Federal Relay Number for further information is 1-800-877-8973. For

clarification of content, contact Ms. Linda Nelson, Procurement Analyst, at (202) 501-1900, or Ms. Angelena Moy, Case Manager, at (703) 602-1302. Please cite FAC 2001-11, FAR case 2002-012.

SUPPLEMENTARY INFORMATION:

A. Background

This interim rule extends the electronic and information technology (EIT) micro-purchase exception until October 1, 2004. Previously, in incorporating the Access Board standards, the FAR provided an exception from the procurement regulations for micro-purchases until January 1, 2003. The Councils fully expected that many products would conform to the standards within that timeframe and be marketed and labeled by the manufacturer accordingly. However, industry is providing products at varying levels of conformance to the standards, and product packaging does not currently provide Section 508 conformance information, in most cases.

The Government is continuing to make compliance a high priority, and the award of many Federal EIT procurements have hinged on accessibility. While the "Buy Accessible" information on the Section508.gov Web site is helpful, not all firms have templates completed for their products making it especially difficult for Government purchase cardholders who are not contracting officers to make informed EIT purchases through reasonable effort.

Typically, Government personnel who are not warranted contracting officers use the purchase card to purchase commercial-off-the-shelf items. Use of the purchase card makes it generally impractical to comply with the EIT accessibility standards unless commercial-off-the-shelf products are labeled for Section 508 standards compliance. The Councils recognize the fact that almost all micro-purchases are

made using the Governmentwide commercial purchase cards, but also recognize that the Government purchases \$52 billion per year for EIT products and services, of which only a very small percentage are acquired through the micro-purchase process with credit cards. Most Government desktop personal computers and other infrastructure are purchased and controlled through large agency acquisitions.

By October 1, 2004, we are hopeful that vendors will provide statements related to product conformance to the Section 508 standards as part of their marketing information and their outer packaging labeling. As this occurs, Federal Government cardholders can make informed EIT purchases that conform to the Access Board's standards, and the micro-purchase exception will no longer be needed. Without the extension of the micropurchase exception, all micro-purchases may have to go through a special evaluation to ensure they comply with EIT Standards. EIT micro-purchases would be forwarded to contracting offices for purchase. This would significantly increase the workload in procurement offices and the finance offices, causing a reduction in efficiency and delivery (increased procurement lead-times). The potential costs to industry cannot be measured. The Councils realized there might be some concern within the disability advocacy groups and the Government that extending the micro-purchase exemption will signal that the Government is relaxing the implementation period. That is not the case. It is only intended to deal with the small portion of EIT that is acquired with credit cards (micro-purchases) and the practical reality that the lack of package labeling, or other manufacturer accessibility information, makes informed decision making by cardholders especially difficult. To help in determining the appropriate next steps for addressing the accessibility of EIT micro-purchases, the Councils invite respondents to address the following questions in addition to providing comments on the rule.

Any and all comments related to this rule are welcomed. Note that public comments provided in response to this notice will be available in their entirety to any requester, including any

requester under the Freedom of Information Act (5 U.S.C. 552).

Therefore, we caution respondents not to provide proprietary or other business sensitive information. Under no circumstances should respondents provide any information unless they do so with a clear understanding that it will be made available to the public.

1. For EIT industry respondents, please include in your comments responses to the following questions:

a. What type of training is your company employing to educate your developers (hardware and software) and salespersons regarding the section 508 requirements?

b. What mechanisms or approaches should the Government consider to ensure EIT micro-purchases (products and services) are accessible?

c. Do you anticipate your company will label its EIT products with buyer information regarding the accessibility aspects of the product being offered for sale? If so, when?

d. Do you offer a complete template of accessibility information for each of your EIT products and services on your Web site? If no, why not?

e. Currently, what process does your company employ to provide information to potential Government purchasers regarding the accessibility features of the products manufactured or sold?

2. For other respondents, please include in your comments responses to the following questions:

a. What mechanisms or approaches should the Government consider to ensure EIT micro-purchases (products and services) are accessible?

b. Currently, what type of training is being employed by your organization to educate purchasers and users regarding the Section 508 requirements? Is any training specifically geared towards cardholders and micro-purchases? If so, how do you explain and communicate the Section 508 requirements?

This is not a significant regulatory action and, therefore, was not subject to review under Section 6(b) of Executive Order 12866, Regulatory Planning and Review, dated September 30, 1993. This rule is not a major rule under 5 U.S.C. 804.

B. Regulatory Flexibility Act

The interim rule is not expected to have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory

Flexibility Act, 5 U.S.C. 601, *et seq.*, because for purchases under \$2,500 (a “micro-purchase”), no competitive quotations have to be obtained and micro-purchases are no longer reserved exclusively for small firms. Therefore, an Initial Regulatory Flexibility Analysis has not been performed. The Councils will consider comments from small entities concerning the affected FAR Part in accordance with 5 U.S.C. 610. Interested parties must submit such comments separately and should cite 5 U.S.C. 601, *et seq.* (FAC 2001-11, FAR case 2002-012), in correspondence.

C. Paperwork Reduction Act

The Paperwork Reduction Act does not apply because the changes to the FAR do not impose information collection requirements that require the approval of the Office of Management and Budget under 44 U.S.C. 3501, *et seq.*

D. Determination To Issue an Interim Rule

A determination has been made under the authority of the Secretary of Defense (DoD), the Administrator of General Services (GSA), and the Administrator of the National Aeronautics and Space Administration (NASA) that urgent and compelling reasons exist to promulgate

this interim rule without prior opportunity for public comment. This action is necessary because the rule extends an exception that would otherwise impose burdens that the Government and contractors are not prepared to meet. However, pursuant to Public Law 98-577 and FAR 1.501, the Councils will consider public comments received in response to this interim rule in the formation of the final rule.

List of Subjects in 48 CFR Part 39

Government procurement.
Dated: December 20, 2002.

Jeremy F. Olson,

Acting Director, Acquisition Policy Division.

Therefore, DoD, GSA, and NASA amend 48 CFR part 39 as set forth below:

PART 39-ACQUISITION OF INFORMATION TECHNOLOGY

1. The authority citation for 48 CFR part 39 continues to read as follows:

Authority: 40 U.S.C. 486(c); 10 U.S.C. chapter 137; and 42 U.S.C. 2473(c).

39.204 [Amended]

2. Amend section 39.204 in the first sentence of paragraph (a) by removing “January 1, 2003” and adding “October 1, 2004” in its place.

[FR Doc. 02-32743 Filed 12-30-02; 8:45 am]

BILLING CODE 6820-EP-P

APPENDIX G

Section 505 of the Rehabilitation Act

(Reference: <http://www.section508.gov/index.cfm?FuseAction=Content&ID=18>)

The procedures and rights set forth in Section 717 of the Civil Rights Act of 1964 shall be available, with respect to any complaint under section 501 and section 504, to any employee or applicant for employment aggrieved by the final disposition of such complaint, or by the failure to take final action on such complaint. In fashioning an equitable or affirmative action remedy under such section, a court may take into account the reasonableness of the cost of any necessary work place accommodation, and the availability of alternatives therefor or other appropriate relief in order to achieve an equitable and appropriate remedy.

(2) The remedies, procedures, and rights set forth in title VI of the Civil Rights Act of 1964 shall be available to any person aggrieved by any act or failure to act by any recipient of Federal assistance or Federal provider of such assistance under section 504 of this Act.

(b) In any action or proceeding to enforce or charge a violation of a provision of this title, the court, in its discretion, may allow the prevailing party, other than the United States, a reasonable attorney's fee as part of the costs.

APPENDIX H

Testing for Web Accessibility

The following article, written by Don Barrett of the U.S. Department of Education, Assistive Technology Team, provides an excellent technical insight into web accessibility testing from his point of view both as a user of assistive technologies, and as a well respected consultant in assistive technologies. The article is provided as an additional resource to guide web developers in creating accessible and usable web pages.

(Source: http://www.ed.gov/offices/OCIO/programs_services/assistive_technology/testing.html)

Testing for Web Accessibility Compliance Under Section 508 of the Rehabilitation Act of 1973

By Don Barrett (don.barrett@ed.gov)
Assistive Technology Specialist
U.S. Department of Education
Assistive Technology Team

Background

On December 21, 2000, the [technical standards for implementing Section 508](#) of the Rehabilitation Act of 1973 as amended by the Workforce Investment Act of 1998 were published in the Federal Register. These standards set forth, in very specific terms, criteria that must be met by software, hardware, web sites, and other electronic and information technology (E&IT) to ensure its accessibility to individuals with disabilities who are either employees or customers of the Federal government. After June 21, 2001, agencies that procure E&IT that does not meet these standards, leave themselves open to either administrative complaints or private rights of action in the Federal courts by disabled individuals unable to utilize this E&IT as a result of its inaccessibility.

These standards are of particular concern to Federal webmasters, whose web sites are potentially available to every person with access to a computer, including the millions of disabled individuals who use a variety of assistive technology to access the Internet. The phenomenally wide visibility Federal sites enjoy through the medium of the Internet brings with it the responsibility of ensuring that Federal web sites are as accessible as possible, meeting the 16 508 web-related standards to the fullest extent possible.

Since the June 21, 2001 implementation for compliance with the standards for Section 508, the number of questions concerning the proper methods for testing web sites for compliance with these standards has been increasing at an alarming rate. Both sound information and myths abound, and the web development community is fraught with concern regarding its ability to meet the

accessibility standards. The Department of Education's Assistive Technology Program, the Access Board (publishers of the Section 508 standards), and other agencies in the forefront of accessibility testing, have been inundated with 508-related questions, especially as they relate to web development and accessibility.

One of the dilemmas facing the Federal IT professional as we contemplate ensuring compliance with Section 508 in the development of ongoing web sites under the new standards, is that although the web developer may have little to no knowledge of accessibility, they are nevertheless held accountable for ensuring the accessibility of the agency's sites. Though the development community of vendors providing web design and development services must become familiar with the 508 web-related standards to ensure that their deliverables meet the requirements as set forth, the Federal web master is faced with the daunting task of establishing some mechanisms for quality assurance and verification of whatever accessibility-related assurances the vendor may provide. No Federal IT professional can afford to rely solely upon vendor assurance as a means for maintaining quality control, and thus, a certain level of expertise must be attained by the IT professional who wishes to verify that their sites are in fact accessible and in compliance with the Section 508 standards.

As Federal web developers have begun wrestling with this objective, many have begun to contemplate the establishment of small in-house testing teams, made up of individuals who show an affinity for the appropriate use of assistive technology such as screen readers, screen magnification software, etc. Of course, for those agencies with well-established in-house testing labs such as the Social Security Administration, the Department of Education, the Department of Agriculture, the Postal Service, the Department of Defense, and others, testing for accessibility is already commonplace, and in these agencies, the various development teams can generally turn to lab staff as ongoing sources of testing, technical assistance, and advice regarding the implementation of accessible web design.

However, for the agency without such a team, who must therefore rely on staff for whom accessibility verification is only one of many duties, but who nevertheless must develop some level of acumen in the use of assistive technology in order to test their sites with some reliability, we offer these simple yet useful tips on how to use assistive technology effectively for testing purposes.

Where to Begin, and for Whom

One of the first questions people ask when trying to figure out where to begin in ensuring accessibility of the web to persons with disabilities concerns developing an understanding of which disabilities are affected most by web access so as to understand where remediation and testing efforts should be concentrated. Of no less concern is the anxiety about how to test compliance for each of the 16

individual web-related 508 standards, something that can appear to be an impossible task for the already overworked web master.

Fortunately, for the web master who has little knowledge of disability and access requirements, these 16 criteria break out into broad logical categories, some of which do not require any testing with assistive technology whatsoever in order to verify compliance. If we look briefly at those of the 508 standards, which relate to web-based Internet and Intranet sites (1194.22), we will see that most of the standards are designed to ensure accessibility of the web to persons with visual impairments. This is because most of the problems encountered in accessing the web, as an output medium requiring extensive navigability, are related to the visual accessing of information provided through a software interface. Thus, we can see that people without vision are the ones who are most profoundly affected by the nature of this interface, and who, by virtue of its design, either succeed or fail in gleaning the information they desire from a given site.

To clarify this further, let's briefly review the 16 Section 508 web-related standards, the disabilities to which they apply, and what, if any assistive technology is necessary to test them for compliance.

1194.22 Web-based intranet and Internet information and applications.

“(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).”

Standard (a) impacts individuals who are blind, since descriptions of non-textual elements must be provided for those who cannot see them.

Compliance with this standard can generally be verified by examination of the HTML code to ensure that all images, image map hot spots, and other non-text elements contain text descriptions. In complex situations, such as where Java Script or other scripting languages are involved, the site can be tested with a screen reader to ensure that the descriptive information is properly exposed to the user.

One of the big misconceptions which has crept into the lore surrounding section 508 and the web involves the use of the Alt attribute to provide descriptions for images and other non-textual elements. Many regrettably believe, due to the phrasing of the standard, that every image must have a verbal equivalent, which must be spoken out loud. This is far from true, and web developers should realize that the audible labeling of graphics used for formatting purposes such as spacers with audio descriptions actually adds to the inaccessibility of a site by creating audio litter. For those images which do not convey content or navigation information, alt= " " is recommended for use as an appropriate solution. The screen reader skips over the unimportant graphic and remains silent, keeping its verbal output to the blind user clean and informative.

“(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.”

Standard B impacts blind individuals who may need audio descriptions synchronized to visual multimedia, which they cannot see, or hearing-impaired individuals who may need text captioning synchronized to audio multimedia material, which they cannot hear.

Assistive technology is not required to test for compliance with Standard B.

“(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.”

Standard C impacts those who are color-blind and cannot discern a given action depicted by color alone.

No assistive technology is required to test for compliance with Standard C.

“(d) Documents shall be organized so they are readable without requiring an associated style sheets.”

Standard D applies to people with all disabilities.

No assistive technology is required to test for compliance with Standard D.

“(e) Redundant text links shall be provided for each active region of a server-side image map.”

Standard E applies to individuals who are blind, since it is these redundant links, which are read with a screen reader, which cannot interpret the hot spots on a server-side image map.

As with Standard (a), compliance with Standard E can be verified through examination of the code, although the proper reading of these redundant links can be verified with a screen reader.

“(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.”

Again, Standard F impacts those who are blind. This standard states a preference for the use of client-side image maps where possible, since the hot spots on client-side image maps can be labeled with the alt attribute and thus be read by the blind user.

Compliance for Standard F can be verified through examination of the underlying code. When deemed necessary, the proper reading of the labels for the hot spots on these image maps can be verified with a screen reader.

“(g) Row and column headers shall be identified for data tables.” and “(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.”

Standards G and H also impact those who are blind, and raise more questions from web developers than any of the other standards, with the possible exception of Standard (I), which will be discussed shortly.

Due to the variety of attributes, which can be invoked in table construction, the complexity of the tables which can result from their use, and the inconsistency with which table attributes are handled by various screen readers, the Access Board has prepared state-of-the-art technical guidance on [accessible table construction](#).

It is generally accepted however, to use the “scope” attribute to associate row and column headers with their corresponding cells in a rectangular table, and the header/id tags in more complex multi-level tables which contain diagonal associations. Jaws and other screen readers recognize the scope and the header/id attributes.

“(i) Frames shall be titled with text that facilitates frame identification and navigation.”

Standard I also impacts those who are blind.

Standard I compliance can, as with many others, be verified by an examination of the HTML code, but can also be tested with a screen reader. The Access Board is also issuing guidance on proper frame titling techniques.

“(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.”

Standard J affects those with seizure disorders for whom the onset of seizures may be triggered by material blinking within the specified range.

No assistive technology is required to test for compliance with Standard J. Individuals should utilize the blink rate specifications provided with the blink generation software to determine compliance with this standard.

“(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.”

Standard K primarily impacts those who are blind.

Verification of the non-utility of the inaccessible page should be tested with a screen reader. The accessibility of the alternate text-only page can be tested by examination of the code or with a screen reader.

“(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.”

Here too, Standard L is designed to assist the blind surfer by ensuring that text produced via scripting is available to the assistive technology.

Compliance for Standard L should be tested with a screen reader, since it may not be possible by code examination alone to verify the availability of functional text to this technology. Here too, as with tables and frame titling, the Access Board is issuing technical assistance guidance on how to construct scripts, which will yield functional text for capturing by the screen reader.

“(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with 1194.21(a) through (l).”

Standard M deals with those occasions when a plug-in is necessary to present content to the user which falls outside the standard HTML interface, thus requiring that the plug-in comply with the standards contained in another section of the 508 requirements. These requirements for plug-ins and other desktop software applications are not covered in this article, which is devoted to the specific discussion of web accessibility.

“(n) When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.”

Standard N is also designed to assist the blind because it impacts their ability for accurately filling out forms on the web.

Here too, because of the wide variety of techniques used in form construction, which can impact the accessibility of these forms, compliance with Standard N should be tested with a screen reader. In addition, guidance may be issued in accessible form construction by the Access Board as well, to ensure a high level of accessibility in this area.

“(o) A method shall be provided that permits users to skip repetitive navigation links.”

Standard O allows repetitive information at the top of each page to be skipped so that those using screen readers don't have to listen to the same repetitive links each time a page is loaded. Standard O also assists those with mobility impairments who want to skip directly to page content and find it easier to click on a "skip navigation" button.

Standard O requires no assistive technology for compliance testing, although screen readers should be used to test if transparent gifs or gifs with the same background color are used making them invisible except to the screen reader. However, some discourage the use of invisible graphics as skip links as it negatively impacts the ability of a person with a mobility impairment to use these links.

“(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.”

Standard P is designed to allow persons with mobility impairments who may be slower than average in filling out a timed form to be alerted that time is running out and extend the time if necessary. It applies to individuals with mobility impairments which affect their ability to input data at the normal rate of speed. No assistive technology is required for compliance testing for Standard P.

Formulating a Testing Strategy

As should be evident by now, when it is necessary to use assistive technology to test for web site accessibility, the only assistive technology that is required for ensuring compliance with a given standard is the screen reading technology used by the blind employee or customer who will also be accessing the site in the same fashion. As stated above, those standards not requiring assistive technology can be evaluated for accessibility through simple code examination and observation.

Ok, so what is a screen reader?

This technology, which resides in the user's computer, translates the visual web interface into spoken or Braille output thus making it available to the blind surfer. In fact, the Section 508 standards were designed in such a fashion so that if followed correctly, the web developer would have the best possible chance of ensuring that the screen reading technology currently in use today could best interpret the web display in a manner understandable and useable by the population of blind web surfers.

Think of it this way - when a blind individual surfs the web, or does anything with a computer for that matter, she does it without a monitor and without a mouse. Sound impossible? Well, it is, unless you have software, which provides you with verbal or Braille feedback about what is on the screen, and that, in a nutshell is

what a screen reader does. The next time you hear someone question the utility of the 508 standards because they don't understand their value, just tell them to unplug their monitor and their mouse and without any assistance, turn on their computer and print out the home page of their favorite web site. In fact, promise them a million dollars if they can do it right now. You can be sure that without a screen reader, they won't be able to do it. (The author of this document is not liable for million dollar claims made as a result of reading this article.).

This discussion is in no way meant to diminish the importance of ensuring the accessibility of the web to persons with other disabilities. As stated above, there are web-related standards under Section 508 which definitely speak to ensuring the accessibility of the web to all persons of varying disabilities other than blindness -- requiring for example, that multimedia presentations be captioned for persons with hearing impairments, or that individuals with mobility impairments who may input data more slowly than average be alerted when timed responses are being encountered. Our point here though is simply that although they are just as significant as those standards affecting web access for the blind, these standards differ in one significant fashion -- compliance with them can be verified through simple code examination or site observation, and they do not, as do the blindness-related web standards, require a testing process using heretofore unfamiliar assistive technology such as screen readers.

Thus, to truly assess a site's accessibility to those blind employees and customers who may encounter it, the web developer or their designee will have to become at least minimally familiar with screen reader technology, in order to ensure that it is being used properly and is thus yielding accurate and useful information about the accessibility of the given site in question.

This is especially true in our discussion here with regard to the accessibility of complex web technologies, e.g., table construction, the use of Java scripting in revealing functional text, form development, and frame labeling.

But by mastering just a few simple screen reader techniques designed to assist the user in navigating these complex technologies, the web designer can experiment with different scenarios in these complex areas which, though all visually appealing, may each offer various access-related advantages and disadvantages which the developer can uncover by exposing these various scenarios to the screen reader environment. With just a little information, the web savvy person examining a given page can make at least some determination as to the site's accessibility, and based upon experience with the screen reader, can choose coding methods which yield the greatest possible accessibility while retaining the look and feel of the particular site design.

One Goal, Many Strategies

As with most anything in this life of ours, there is usually more than one way to do anything well, and with screen readers, this is no exception. Suffice it to say, without getting sidetracked, that each of the major screen readers/talking browsers on the market today handle the web with its complex technologies just a little bit differently, some providing greater or lesser levels of access depending upon the situation, page design, and complexity of the material being presented. Section 508 however, was written specifically to avoid the trap of requiring agencies and customers to rely upon a single screen reader technology to provide an appropriate level of access. The reality in fact, is that all else being equal, web coding in full compliance with Section 508 standards will yield different levels of access depending upon which screen reader is use. This is not your problem, and we wish to make it clear that your obligation is correct or appropriate 508- compliant coding, not the perfect performance of each screen reader on the market.

Some screen readers work better than others in different situations. By understanding and accepting this, you can test for compliance recognizing the limitations of different screen reader technologies. This of course raises the question of what happens when a site appears to be 508 compliant, but due to one factor or another, is not being handled well by a given screen reader. Does this inability of a given screen reader to handle a given site mean the site is out of compliance? Although there is no hard and fast simple answer, there are instances in which a site can be fully compliant yet yield inaccessible information due to a screen reader's inability to properly render the compliant coding. For example, each screen reader handles tables, especially complex ones with multiple headers, differently and with a different level of skill, and one of them, due to its reliance on access technology which doesn't yet effectively render tabular information in a useable fashion, can't yet read tables at all.

Does this mean that the use of tables is non-508 compliant? Not at all. By following the 508 standards and using the guidance issued by the Access Board, it won't be long before assistive technologies catch up to the HTML specification currently in use, thus rendering the information in a useable form according to the 508-compliant code it encounters.

A reader's inability to handle 508-compliant HTML is, we assure you, the exception rather than the rule, and should not deter you from establishing some level of testing and ensuring that your sites are both Section 508 compliant and thus accessible.

With this in mind, let's move to a discussion of the kinds of things screen readers do, and what one can expect from their use.

In making a determination as to which screen reader to test with, first, find out what screen reader your particular agency has standardized upon. Ask around and see if there is one that many of your blind customers are using? Once you

ascertain which reader is in use within your agency, either obtain a demo copy or purchase it from its manufacturer. If you can find a savvy blind web user who can give you some testing time, so much the better; if not, you will need to get hold of one of the screen readers with which your site is being accessed. And of course, if you want to test with more than one, given their various strengths and weaknesses, we won't object. And remember, don't be put off by the seeming strangeness of the technology - your goal isn't perfection, but it is accessibility.

What to Expect Once you have picked a Screen Reader

1) All of these technologies will talk to you as you install them. This is normal and should happen if you are using an appropriate sound card (these days, most will work fine). So, when you talk to the vendor, find out first how to slow down the speech rate so you can understand what it is saying. You can't test for accessibility if you don't understand the speech, and although you will get faster if you use it enough, you should start out slow and comfortable.

2) With the exception of the Home Page Reader (a talking browser produced by IBM), other screen readers have been designed to work with a multitude of programs. If you use such a screen reader, before you open your first web page, go into say Notepad and write yourself a letter. Get brave even and turn off your monitor and leave that mouse alone. Listen to what happens as you hit your up, down, left, and right arrows, and what happens when you add the control key to various cursor movements. Can you hear the letters as you type, the lines of text as you move up and down, and the words as you ctrl-arrow right and left? Hit the alt key and move among the options in the menu bar and listen with your ears to what your eyes would normally tell you. Try opening the File Menu, arrowing down to the Save option, and hitting the Enter key. Can you type in a file name without looking. Can you tab to the Save Button and hit enter to save your document without using the mouse or looking at the screen. Remember, your goal, within the context of limited time, is to at least become a little familiar with the paradigm of "Look Mom, no monitor, and no mouse." Get a little bit used to learning what it is like to be blind and receive information from your computer using a heretofore mostly unused sense - your hearing.

3) Next, read and print out the help section on how your screen reader interacts with web pages. For example, WindowEyes tells you when the page is done loading; Jaws for Windows tells you the same thing by telling you how many links are on the open page; and the IBM Home Page Reader just begins reading the page once loaded. Once you know what you're listening for, it won't throw you.

4) This is important!! Learn to shut it up (not you, the screen reader). All screen readers are designed to automatically read the entire page to the advanced user, a characteristic that will no doubt cause great confusion to anyone unfamiliar with the given product. Generally, hitting the Control key as soon as the web page begins reading will stop most readers in their tracks, and that is what you want;

stay in control, don't let it talk its or your head off. Remember, you want to examine the page yourself, a line at a time, not listen to the reader just chatter away mindlessly.

5) Understand the concept that all browsers scroll; this means that there is no system caret such as you would find in Notepad or Word Perfect. For blind folks, this is bad news, since scrolling data is generally not accessible in any interactive direct fashion. This being the case, the good folks who put these screen readers together have invented special cursors and large page buffers, which allow an individual to arrow through a web page by as small a unit as a character at a time, or through the up and down arrows, a line or page element at a time. This cursor simulation thus mimics the functionality of a word processor, and although data cannot be input into the page, the blind surfer (and you too) can move through the page in a fashion, which will yield easy to understand results just as if you were carefully reviewing a document in Word. By learning to arrow through the pages in your site to review an entire page's contents, or to tab from link to link listening to how the links are spoken, you will thus be able to use the screen reader to review all elements encountered in the page, facilitating the reading of text surrounding hyperlinks, and the detailed examining of complex sites.

6) All screen readers also allow the user to simply tab from link to link, verbalizing each hyperlink as it is encountered. This is useful for the web developer who simply wants to test the efficacy of alt text placed on images or hot spots, the proper speaking of labeled form controls, or the availability of functional text in links containing Java Script or other scripting languages.

7) Each screen reader has specific keystrokes for doing specific tasks. For example, when using Jaws for Windows in a table, one must hold down both alt and control while hitting the arrow keys to properly move through the tables columns and rows reading the information contained in each cell along with its header information.

The Home Page Reader, on the other hand, requires that the alt-t key combination be hit to engage table navigation mode. So, learn from the screen reader's help file what specific keystrokes you need to know to test your site, and you'll do just fine.

The Bottom Line

Is the testing of a web site with a screen reader possible with a little time and effort? We think so, and experience has borne this out. Does it require a high level of master-level skill and years of training – we think not. We believe, that with a decent level of computer literacy, some patient practice, and a true sense of the mission at hand, anyone tasked with this project can take it on and do it well.

Effective testing with a screen reader, coupled with the code examination for the non-screen reader-related standards, can help to ensure that any Federal web

site complies with Section 508. It's worth the effort, and it's the right thing to do, and you can rest assured that your site will then be available to the widest audience possible, and that's what it's all about.

For further information on testing procedures, accessible web design, or other accessibility-related matters, feel free to contact the Education Department's Assistive Technology Team as follows:

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APPENDIX I

Section 508 Evaluation Checklist

Section 1194.21 Software Applications and Operating Systems			
Criteria	How Supported?	Comments	
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.			
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.			
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.			
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.			
(e) When bitmap images are used to			

identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.			
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.			
(g) Applications shall not override user selected contrast and color selections and other individual display attributes.			
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.			
(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.			
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.			
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.			
(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.			

Section 1194.22 Web-based Internet information and applications		
Criteria	How Supported?	Comments
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).		
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.		
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.		
(d) Documents shall be organized so they are readable without requiring an associated style sheet.		
(e) Redundant text links shall be provided for each active region of a server-side image map.		
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.		
(g) Row and column headers shall be identified for data tables.		
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.		
(i) Frames shall be titled with text that facilitates frame identification and navigation		
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.		
(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-		

only page shall be updated whenever the primary page changes.			
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.			
(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).			
(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.			
(o) A method shall be provided that permits users to skip repetitive navigation links.			
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.			

Section 1194.23 Telecommunications Products		
Criteria	How Supported?	Comments
(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.		
(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.		
(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.		
(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.		
(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.		
(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one intermediate step of 12 dB of gain shall be provided.		

<p>(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.</p>			
<p>(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.</p>			
<p>(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.</p>			
<p>(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.</p>			
<p>(k)(1) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be tactilely discernible without activating the controls or keys.</p>			
<p>(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable with one hand and shall not require tight grasping, pinching, twisting of the wrist. The force required to activate</p>			

controls and keys shall be 5 lbs. (22.2N) maximum.			
(k)(3) Products which have mechanically operated controls or keys shall comply with the following: If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.			
(k)(4) Products which have mechanically operated controls or keys shall comply with the following: The status of all locking or toggle controls or keys shall be visually discernible, and discernible either through touch or sound.			

Section 1194.24 Video and Multi-media Products

Criteria	How Supported?	Comments	
(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.			
(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.			
(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.			
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.			

Section 1194.25 Self-Contained, Closed Products		
Criteria	How Supported?	Comments
(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach Assistive Technology to the product. Personal headsets for private listening are not Assistive Technology.		
(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.		
(c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).		
(d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.		
(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.		
(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.		
(g) Color coding shall not be used as		

<p>the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.</p>		
<p>(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.</p>		
<p>(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.</p>		
<p>(j) (1) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length on products which are freestanding, non-portable, and intended to be used in one location and which have operable controls.</p>		
<p>(j)(2) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.</p>		
<p>(j)(3) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches</p>		

maximum and 15 inches minimum above the floor.			
(j)(4) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Operable controls shall not be more than 24 inches behind the reference plane.			

Section 1194.26 Desktop and Portable Computers		
Criteria	How Supported?	Comments
(a) All mechanically operated controls and keys shall comply with 1194.23 (k) (1) through (4).		
(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with 1194.23 (k) (1) through (4).		
(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.		
(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards		

Section 1194.31 Functional Performance Criteria		
Criteria	How Supported?	Comments
(a) At least one mode of operation and information retrieval that does not require user vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.		
(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.		
(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided		
(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.		
(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for Assistive Technology used by people with disabilities shall be provided.		
(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.		

Section 1194.41 Information, documentation, and support.

Criteria	How Supported?	Comments	
(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge.			
(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.			
(c) Support services for products shall accommodate the communication needs of end-users with disabilities.			