

Missouri Office of Information Technology Information Technology Standard

Missouri IT Accessibility Standard	Document Number: ITGS0003
	Effective Date: 01/29/2003
	Published By: Office of Information Technology

1.0 Purpose

These standards are intended to advise agencies on the procedures necessary to ensure compliance with the provisions of RSMo 191.863 regarding development, procurement, maintenance or use of information technology, or when administering contracts or grants that include the procurement, development, or upgrading of information technology.

2.0 Scope

Each State agency shall work diligently to assure compliance with the provisions of RSMo191.863 through statewide implementation of information technology accessibility standard (ITS-01).

3.0 Background

RSMo 191.863 requires that the Missouri Assistive Technology Council work with the Office of Information Technology to adopt accessibility standards to be used by each State department or agency in the procurement of information technology, and in the development and implementation of custom-designed information technology systems, web sites and other emerging information technology systems. When developing, procuring, maintaining or using information technology, or when administering contracts or grants that include the procurement development, or upgrading of information technology, each State department or agency shall ensure, unless an undue burden would be imposed on the department or agency, that the information technology allows employees, program participants and members of the general public with disabilities to have access to and use of information and data that is comparable to the access by individuals without disabilities.

4.0 References

4.1 Missouri Revised Statute, Chapter 191, Section 191.863

4.2 Section 508

4.3 January 29, 2003 ITAB Meeting Minutes

5.0 Revision History

Date	Description of Change
01/29/2003	Original Standard Published - Version 1.0
11/07/2003	Removed Appendix A - Version 2.0
01/04/2008	Revisions were made within Technical Standards in the areas of: <ul style="list-style-type: none">• Web-based Internet, Internet Information and Applications• Video and Multimedia Products

6.0 Inquiries

Direct inquiries about these standards to:

Office of Information Technology
Truman Building, Room 560
301 W. High Street
Jefferson City, MO 65102
Voice: 573-526-7741
FAX: 573-526-7747

Effective Date: January 29, 2003

State of Missouri Information Technology Accessibility Standards

Table of Contents

	<u>Page</u>
Overview	1
Introduction	1
General Considerations	2
Technical Considerations	2
IT Accessibility Standards	5
General Standards	5
Purpose	5
Definitions	5
Application	7
General Exceptions	9
Equivalent Facilitation	10
Enforcement	10
Technical Standards	11
Software Applications and Operating Systems	11
Web-based Internet and Internet Information and Applications	12
Telecommunications Products	14
Video and Multimedia Products	16
Desktop and Portable Computers	17
Information, Documentation, and Support	18

Information Technology Accessibility Standards

Overview

Introduction

The State of Missouri's Information Technology (IT) Accessibility Standards provide direction for complying with RSMo Section 191.863 (attached and located on the Web at <http://www.moga.State.mo.us/statutes/c100-199/1910863.htm>). RSMo 191.863 requires State agencies to make information technologies accessible to individuals with disabilities. RSMo 191.863 was adopted to:

- ❑ Reduce information technology barriers.
- ❑ Provide new opportunities for individuals with disabilities.
- ❑ Encourage the development of new technologies to adhere to these goals.

RSMo 191.863 applies to all State departments and agencies as defined by law and requires that members of the public and State employees with disabilities have access to information that is comparable to the access available to others. These standards apply to all information technologies subject to the conditions as specified in the General Exception section of this document and its attachments.

The State of Missouri IT Accessibility Standards are based on the standards developed to implement Section 508 of the Rehabilitation Act of 1973 and the World Wide Web Consortium (W3C) Accessibility Guidelines. For further information on Section 508 standards and W3C guidelines go to:

- ❑ Federal Section 508 Electronic and Information Technology Accessibility Standards
- ❑ World Wide Web Consortium Accessibility Guidelines

NOTE: Portions of the following text have been extracted in whole or in part from the Section 508 standards 36 CFR Part 1194. Exact Section 508 terminology is frequently used to minimize potential confusion resulting from different wording between these standards and Section 508. However, the wording and content of Section 508 have not been adopted in all situations. Modifications to Section 508 wording have been made to clarify or adapt the standards consistent with Missouri resources and needs. State departments and agencies should use these State standards to comply with the Missouri law requiring IT accessibility.

General Considerations

These standards cover technology procured or developed by State departments or agencies, and apply only to those products directly relevant to the contract and its deliverables. Products covered by the standards shall comply with all applicable standards, e.g. software products will comply with the software standards, unless

Information Technology Accessibility Standards

an undue burden would be imposed. Standards provide direction for documentation of undue burden.

An exception clarifies that the standards do not apply to technology that is incidental to a State contract. Thus, those products that are not specified as part of a contract with a State agency would not need to comply with the standards. For example, a firm that produces a report for a State agency under a contract would not have to procure accessible computers and word processing software even if they were used exclusively for the contract; however, compliance would be required if such products were to become the property of the State agency as contract deliverables or if the State agency purchased the products to be used by the contractor as part of the project. If a State agency contracts with a firm to develop its Web site, the standards would apply to the new Web site for the agency but not to the firm's own Web site.

These standards also cover technology procured by grantees or contractors who receive dollars from a State department or agency administering a grant or contract program when the program includes the allotment of funding for the procurement, development, or upgrading of information technology. As with the previous example, if the grantee's purchase or development of information technology is incidental to the grant program purpose, these standards do not apply. However, if the purchase or development is an integral part of the grant program the standards do apply.

Technical Considerations

These standards identify criteria specific to various types of technologies, including:

- ❑ Software applications and operating systems
- ❑ Web-based information or applications
- ❑ Telecommunication products
- ❑ Video and multimedia products
- ❑ Desktop and portable computers
- ❑ Information, documentation and support

At this time, standards have not been established for *self-contained - closed products* due to the lack of specifications and availability of products related to this category.

Software Applications and Operating Systems

Most of the standards for software pertain to usability for people with vision impairments. For example, one provision requires alternative keyboard navigation, which is essential for people with vision impairments who cannot rely on pointing devices, such as a mouse. Other provisions address animated displays, color and contrast settings, flash rate, and electronic forms, among others.

Information Technology Accessibility Standards

Web-based Intranet and Internet Information and Applications

The standards for Web-based technology and information are based on access guidelines developed by the Web Accessibility Initiative of the World Wide Web Consortium. Many of these provisions ensure access for people with vision impairments who rely on various assistive products to access computer-based information, such as screen readers, which translate the computer screen display into automated audible output, and refreshable Braille displays. Certain conventions, such as verbal tags or identification of graphics and format devices, such as frames, are necessary so that these devices can "read" them for the user in a sensible way. The standards do not prohibit the use of Web site graphics or animation. Instead, the standards help ensure that such information is also available in an accessible format. Generally, this means use of text labels or descriptors for graphics and certain format elements. (HTML code already provides an "Alt Text" tag for graphics, which can serve as a verbal descriptor for graphics). This section also addresses the usability of multimedia presentations, image maps, style sheets, scripting languages, applets and plugins, and electronic forms.

The standards apply to State Web sites but not to private sector Web sites (unless a site is provided under contract to a State agency, in which case only that Web site or portion covered by the contract would have to comply). Accessible sites offer significant advantages that go beyond access. For example, those with "text-only" options provide a faster downloading alternative and can facilitate transmission of Web-based data to cell phones and personal digital assistants.

Telecommunications Products

The standards of this section are designed primarily to ensure access to people with hearing impairments. This includes compatibility with hearing aids, cochlear implants, assistive listening devices, and teletypewriters (TTYs). TTYs are devices that enable people with hearing or speech impairments to communicate over the telephone; they typically include an acoustic coupler for the telephone handset, a simplified keyboard, and a visible message display. One requirement calls for a standard non-acoustic TTY connection point for telecommunication products that allow voice communication but also provide TTY functionality. Other specifications address adjustable volume controls for output, product interface with hearing technologies, and the usability of keys and controls by people who may have impaired vision or limited dexterity or motor control.

Video or Multimedia Products

Multimedia products involve more than one media and include, but are not limited to, video programs, narrated slide production, and computer-generated presentations. Standards address caption decoder circuitry (for any system with a screen larger than 13 inches) and secondary audio channels for television tuners, including tuner cards for use in computers. The standards also require captioning

Information Technology Accessibility Standards

and video description for certain training and informational multimedia productions developed or procured by State agencies in accordance with a time schedule. The standards also provide that viewers are able to turn captioning or video description features on or off.

Desktop and Portable Computers

This section focuses on keyboards and other mechanically operated controls, touch screens, use of biometric forms of identification, and ports and connectors.

Information, Documentation, and Support

These standards address access to all information, documentation, and support provided to end users (e.g., State employees) for covered technologies. This includes user guides, installation guides for end-user installable devices, customer support and technical support communications. 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, TTY access, and captioning and audio description for video materials.

Information Technology Accessibility Standards

IT Accessibility Standards

The Information Technology (IT) Accessibility Standards are organized into the following topics:

General Standards

- ❑ Purpose
- ❑ Definitions
- ❑ Application
- ❑ General Exceptions
- ❑ Equivalent Facilitation
- ❑ Enforcement

Technical Standards

- ❑ Software Applications and Operating Systems
- ❑ Web-based Intranet and Internet Information and Applications
- ❑ Telecommunications Products
- ❑ Video and Multimedia Products
- ❑ Desktop and Portable Computers
- ❑ Information, Documentation, and Support

General Standards

Purpose

The purpose of these technical standards is to implement RSMo 191.850 and 191.863. These statutes requires that when State agencies develop, procure, maintain, use, or administer contracts or grants that include the procurement, development, or upgrading of information technology, State employees with disabilities have access to and use of information and data comparable to the access and use by State employees who do not have disabilities, unless an undue burden would be imposed on the agency. RSMo 191.863 also requires that individuals with disabilities, who are members of the public seeking information or services from a State agency, have access to and use of information and data comparable to that provided to the public who do not have disabilities, unless an undue burden would be imposed on the agency.

Definitions

The following definitions apply to these standards.

- ❑ **Accommodation.** Accommodations are changes in the way things are customarily done that enable individuals with disabilities to enjoy equal access and benefits. Most often in these standards the term refers to the provision of effective communication through delivery of auxiliary aids and

Information Technology Accessibility Standards

- services such as qualified interpreters, note takers, transcription or captioning, qualified readers, Braille, video description and assistive devices.
- ❑ ***Alternate formats.*** Alternative formats usable by people with disabilities may include, but are not limited to, Braille, ASCII text, large print, recorded audio, and electronic formats.
 - ❑ ***Alternate methods.*** Alternative methods are 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 Device.*** Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain or improve functional capabilities of individuals with disabilities.
 - ❑ ***Captioning.*** Captions are a written representation of audio or dialogue that accompany video information. Captions are similar to subtitles but also convey non-dialogue auditory information that is important to the video, such as laughter.
 - ❑ ***Individual With Disabilities.*** Any individual who is considered to have a disability or handicap for the purposes of any Federal or Missouri law.
 - ❑ ***Information Technology.*** Any electronic information equipment or interconnected system that is used in the acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information, including audio, graphic and text.
 - ❑ ***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.
 - ❑ ***Self-Contained, Closed Products.*** Products that generally have embedded software and are commonly designed in such a fashion that a user couldn't easily attach or install assistive technology. These products include, but are not limited to, information kiosks and information transaction machines, copiers, printers, fax machines, voting machines and other similar types of products.
 - ❑ ***State Department or Agency.*** Any department, office, board, bureau, commission, or other unit of the executive, legislative or judicial branch of State government, including public four-year and two-year colleges and universities.
 - ❑ ***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.
 - ❑ ***Television Broadcast.*** Pertains to any video production that was distributed via an FCC regulated television station, but does not include the same video production distributed or redistributed via the Internet or an internal Intranet.

Information Technology Accessibility Standards

- **Teletypewriter (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.** Significant difficulty or expense, including, but not limited to, difficulty or expense associated with technical feasibility.
- **Video Description.** Video description is the insertion of verbal descriptions about the setting and/or action in a video program when information about these visual elements is not contained in the audio portion of the program. These descriptions supplement the regular audio track of the program. Video descriptions are a way to let people who are blind or have low vision know what is happening on screen. Note: In these standards the term video description is used rather than audio description. The term audio description is reserved for verbal descriptions of live events.

Application

- (a) Information technology products covered by these standards shall comply with all applicable provisions. When developing, procuring, maintaining, or using information technology products (either directly or through administration of contracts or grants), each State department or agency, shall ensure that the products comply with these standards, unless an undue burden would be imposed on the agency.
 - (1) Information technology products are those as defined by RSMo. 191.850.
 - (2) State departments or agencies are those as defined by RSMo. 191.850.
 - (3) Undue burden is as defined by RSMo. 191.850.
 - (i) When procuring a product, if an agency determines that compliance with any provision of these standards 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.
 - (ii) When compliance with these standards imposes an undue burden, agencies shall provide individuals with disabilities the information and data involved by an alternative means of access that allows the individual to use the information and data in accordance with other applicable State and Federal laws such as Title I and Title II of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act.
- (b) When procuring a commercial, off-the-shelf product, the accessibility determination will be conducted as part of the subjective evaluation and will

Information Technology Accessibility Standards

be subservient to the general, technical and functional requirements of the product. At a minimum, it will be done through review of vendor provided information submitted in the form of the Voluntary Product Accessibility Template (VPAT) or comparable document with judgements made regarding degree of conformance to the access standards. The relative accessibility weighing may be adjusted for due cause based on the specific procurement. The rating and relative weighing of ratings for accessibility, functional performance and cost in the bid review process shall be specified in all Requests For Proposals and Invitations For Bids issued for the purchase of commercial, off-the-shelf information technology products.

- (c) When developing software applications, web pages or other information technology systems, each covered entity shall require conformance with the applicable technical access standards unless an undue burden would be imposed.
- (d) Except as described under “General Exceptions” provided below, these standards apply to information technology developed, procured, maintained, or used by State departments or agencies directly; or used by a contractor under a contract with a State department or 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; or when State departments or agencies administer contracts or grant programs that include a significant allotment of funding for the procurement, development, or upgrading of information technology.
- (e) These standards apply to all information technology purchased six months subsequent to the effective date of these standards and whose corresponding Request for Proposal or Invitation for Bid was issued on or after that date.
- (f) These standards apply to all newly developed information technology and substantially modified or substantially enhanced technology, six months subsequent to the effective date of these standards

General Exceptions

- (a) These standards do not apply to any information technology operated by State departments or agencies, the function, operation, or use of which involves intelligence activities, crypto logic activities related to public safety, command and control of law enforcement, equipment that is an integral part of a weapon or weapons system, or systems which are critical to the direct fulfillment of public safety or intelligence missions. Systems which are critical to the direct fulfillment of public safety 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).

Information Technology Accessibility Standards

- (b) These standards do not apply to information technology that is acquired by a contractor or grantee incidental to a contract or grant, provided the technology does not become State property upon the completion of the contract.
- (c) Except as required to comply with these standards, State departments and agencies are not required to install specific accessibility-related software or attach an assistive technology device to information technology products unless required by other applicable State or Federal laws.

NOTE: In general, compliance with these standards provides built in access features in products or provides compatibility with add-on assistive technology devices. Compliance with these standards does not necessarily ensure access needed by individual people with disabilities as an additional assistive device may be required, a substitute product may be required, or another type of accommodation may be needed to meet their individual needs. Provision of assistive technology, substitute products with specific access features, and other types of accommodation should be done in accordance with the requirements of applicable State and Federal laws, e.g. the Americans with Disabilities Act and Section 504 of the Rehabilitation Act.

- (d) When State departments or agencies provide public access to information or data through 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 where the 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 information technology is provided to the public.
- (e) These standards 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 these standards.

Equivalent Facilitation

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

Agencies may accept IT offered by vendors, which uses designs or technologies that do not meet the applicable technical provisions, but provide substantially

Information Technology Accessibility Standards

equivalent or greater access to and use of a product for people with disabilities. This is referred to as "equivalent facilitation."

Equivalent facilitation is not an exception or variance from the requirement to provide comparable access. Rather, it is recognition that technologies may be developed or used in ways not envisioned by the technical provisions of this document but still result in the same or better functional access. Functional outcome – not form – is the key to evaluating whether a technology results in "substantially equivalent or greater access."

Enforcement

Effective six months after the effective date of the Missouri information technology access standards, any individual with a disability may file a complaint alleging that state department or agency fails to comply with RSMo 191.863. Each state department or agency shall identify a person, office, or entity to process complaints and shall make that information publicly available. The complaint process shall minimally include an investigation of the allegation, an attempt to resolve the complaint, and written communication regarding the findings and final decision or disposition of the complaint. If any actions were taken or will be taken to resolve the complaint, the written communication shall describe and provide a specific time line for such actions. State departments and agencies are encouraged to establish an internal complaint process that gives divisions and units the opportunity to directly address the complaint first and also provides for a second appeal to another unit independent of the agency in question. Agencies are encouraged to develop and implement complaint processes that voluntarily resolve disputes over accessibility.

Technical Standards

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.

Information Technology Accessibility Standards

- (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.

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) except for captioning of audio information which shall comply with (b) of this section.
- (b) Captioning, video description or other equivalent alternatives for multimedia presentations, excluding live Webcasts and web transmission of television programming subject to (f) of Video and Multimedia Products, shall be provided in synchrony with the presentation, and in accordance with paragraph (c) and (d) of Video and Multimedia Products.

Information Technology Accessibility Standards

- (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 these standards, 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 the standards set forth under "Software Applications and Operating Systems", paragraphs (a) through (l) contained within this document.
- (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.

Information Technology Accessibility Standards

- (p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.
- (q) Contact information for issues related to accessibility shall be provided on each entry page.

Telecommunications Products

- (a) Telecommunications products or systems that provide a function allowing voice communication and do not themselves provide 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, messaging auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users either through direct TTY access or through use of the relay service and by Voice Carry Over (VCO), Hearing Carry Over (HCO), Speech To Speech users through the relay service.
- (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. Notwithstanding gain requirements, maximum output shall not exceed 125 db SPL.
- (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 if the volume is capable of greater than 18 db of gain.

Information Technology Accessibility Standards

- (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) 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.
- (j) 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. The 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.

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. Wide screen digital television (DTV) receivers with 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 stereo and equipped with secondary audio program playback circuitry.

Information Technology Accessibility Standards

(c) Training and information video and multimedia products with content critical to the mission of the agency, excluding television broadcasts, web transmission of television programming and live Webcasts, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned or include a text transcript to the maximum extent practicable with priority given to:

- ❑ Content of importance made available to the public without restriction, and;
- ❑ Content that is likely to be re-used or re-purposed for broad based use and the recipients of the content is unknown.

(d) Training and informational video and multimedia products with content critical to the mission of the agency, excluding television broadcasts, web transmission of television programming and live Webcasts, that contain visual information necessary for the comprehension of the content, shall be video-described to the maximum extent practicable with priority given to:

- Content of importance made available to the public without restriction, and;
- Content that is likely to be re-used or re-purposed for broad based use and the recipients of the content is unknown.

NOTE: Situations in which the recipients of a product are known (e.g. employees who must register for a training session) will allow covered entities to provide captioning or a transcript upon request pursuant to the requirements of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Situations in which the recipients of a product are not known (individuals at an event do not register to attend a training session) do not similarly allow for alternative communication to be provided upon request.

(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.

(f) Television broadcasts, both live and pre-recorded, and web broadcasts of television programming, are subject to all the rules and regulations as specified by the Federal Communications Commission (FCC) regarding the inclusion of captioning and video descriptions applicable to television programming.

Desktop and Portable Computers

(a) All mechanically operated controls and keys shall comply with Paragraphs (k.1) through (k.4) as specified under the topic “Telecommunications Products”.

Information Technology Accessibility Standards

- (b) If a product utilizes touch screens or touch-operated controls, an input method shall be provided that complies with Paragraphs (k.1) through (k.4) as specified under the topic “Telecommunications Products”.
- (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.

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.