

§ 1193.31

and consistently as possible. Manufacturers shall identify barriers to accessibility and usability as part of such a product design and development process.

(b) In developing such a process, manufacturers shall consider the following factors, as the manufacturer deems appropriate:

(1) Where market research is undertaken, including individuals with disabilities in target populations of such research;

(2) Where product design, testing, pilot demonstrations, and product trials are conducted, including individuals with disabilities in such activities;

(3) Working cooperatively with appropriate disability-related organizations; and

(4) Making reasonable efforts to validate any unproven access solutions through testing with individuals with disabilities or with appropriate disability-related organizations that have established expertise with individuals with disabilities.

Subpart C—Requirements for Accessibility and Usability

§ 1193.31 Accessibility and usability.

When required by §1193.21, telecommunications equipment and customer premises equipment shall be accessible to and usable by individuals with disabilities and shall comply with §§1193.33 through 1193.43 as applicable.

§ 1193.33 Information, documentation, and training.

(a) Manufacturers shall ensure access to information and documentation it provides to its customers. Such information and documentation includes user guides, installation guides for end-user installable devices, and product support communications, regarding both the product in general and the accessibility features of the product. Manufacturers shall take such other steps as necessary including:

(1) Providing a description of the accessibility and compatibility features of the product upon request, including, as needed, in alternate formats or alternate modes at no additional charge;

(2) Providing end-user product documentation in alternate formats or al-

36 CFR Ch. XI (7–1–05 Edition)

ternate modes upon request at no additional charge; and

(3) Ensuring usable customer support and technical support in the call centers and service centers which support their products at no additional charge.

(b) Manufacturers shall include in general product information the contact method for obtaining the information required by paragraph (a) of this section.

(c) Where manufacturers provide employee training, they shall ensure it is appropriate to an employee's function. In developing, or incorporating existing training programs, consideration shall be given to the following factors:

(1) Accessibility requirements of individuals with disabilities;

(2) Means of communicating with individuals with disabilities;

(3) Commonly used adaptive technology used with the manufacturer's products;

(4) Designing for accessibility; and

(5) Solutions for accessibility and compatibility.

§ 1193.35 Redundancy and selectability. [Reserved]

§ 1193.37 Information pass through.

Telecommunications equipment and customer premises equipment shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide telecommunications in an accessible format. In particular, signal compression technologies shall not remove information needed for access or shall restore it upon decompression.

§ 1193.39 Prohibited reduction of accessibility, usability, and compatibility.

(a) No change shall be undertaken which decreases or has the effect of decreasing the net accessibility, usability, or compatibility of telecommunications equipment or customer premises equipment.

(b) Exception: Discontinuation of a product shall not be prohibited.

§ 1193.41 Input, control, and mechanical functions.

Input, control, and mechanical functions shall be locatable, identifiable,

and operable in accordance with each of the following, assessed independently:

(a) *Operable without vision.* Provide at least one mode that does not require user vision.

(b) *Operable with low vision and limited or no hearing.* Provide at least one mode that permits operation by users with visual acuity between 20/70 and 20/200, without relying on audio output.

(c) *Operable with little or no color perception.* Provide at least one mode that does not require user color perception.

(d) *Operable without hearing.* Provide at least one mode that does not require user auditory perception.

(e) *Operable with limited manual dexterity.* Provide at least one mode that does not require user fine motor control or simultaneous actions.

(f) *Operable with limited reach and strength.* Provide at least one mode that is operable with user limited reach and strength.

(g) *Operable without time-dependent controls.* Provide at least one mode that does not require a response time. Alternatively, a response time may be required if it can be by-passed or adjusted by the user over a wide range.

(h) *Operable without speech.* Provide at least one mode that does not require user speech.

(i) *Operable with limited cognitive skills.* Provide at least one mode that minimizes the cognitive, memory, language, and learning skills required of the user.

§ 1193.43 Output, display, and control functions.

All information necessary to operate and use the product, including but not limited to, text, static or dynamic images, icons, labels, sounds, or incidental operating cues, shall comply with each of the following, assessed independently:

(a) *Availability of visual information.* Provide visual information through at least one mode in auditory form.

(b) *Availability of visual information for low vision users.* Provide visual information through at least one mode to users with visual acuity between 20/70 and 20/200 without relying on audio.

(c) *Access to moving text.* Provide moving text in at least one static presentation mode at the option of the user.

(d) *Availability of auditory information.* Provide auditory information through at least one mode in visual form and, where appropriate, in tactile form.

(e) *Availability of auditory information for people who are hard of hearing.* Provide audio or acoustic information, including any auditory feedback tones that are important for the use of the product, through at least one mode in enhanced auditory fashion (i.e., increased amplification, increased signal-to-noise ratio, or combination). For transmitted voice signals, provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, provide at least one intermediate step of 12 dB of gain.

(f) *Prevention of visually-induced seizures.* Visual displays and indicators shall minimize visual flicker that might induce seizures in people with photosensitive epilepsy.

(g) *Availability of audio cutoff.* Where a product delivers audio output through an external speaker, provide an industry standard connector for headphones or personal listening devices (e.g., phone-like handset or earcup) which cuts off the speaker(s) when used.

(h) *Non-interference with hearing technologies.* Reduce interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) to the lowest possible level that allows a user to utilize the product.

(i) *Hearing aid coupling.* Where a product delivers output by an audio transducer which is normally held up to the ear, provide a means for effective wireless coupling to hearing aids.

Subpart D—Requirements for Compatibility With Peripheral Devices and Specialized Customer Premises Equipment

§ 1193.51 Compatibility.

When required by subpart B of this part, telecommunications equipment and customer premises equipment shall be compatible with peripheral devices and specialized customer premises