

Before the
UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION
ADMINISTRATION
Washington, D.C. 20230

In the Matter of)
Implementation and Administration of a) Docket No. 060512129-6129-01
Coupon Program for Digital-to-Analog)
Converter Boxes)

Comments of the:

- WGBH National Center for Accessible Media (NCAM),
- American Association of People with Disabilities, and
- Information Technology and Accessible Interface Rehabilitation
Engineering Research Center, Trace Center - University of Wisconsin -
Madison

September 25, 2006

SUMMARY

The parties submitting these comments are organizations which serve people with disabilities and/or are membership organizations made up of people with disabilities. People with disabilities are among the poorest of Americans, often unemployed or under-employed, and are therefore most likely to be among the last remaining television owners who have neither cable nor satellite TV service nor a digital television receiver or display. These comments focus on the need to assure that the Federally subsidized and taxpayer-supported digital converter boxes will be fully accessible to people with disabilities by adherence to properly and clearly written technical specifications. In addition, the processes involved in

consumer education and distribution of the converter box subsidies must also be fully accessible to people with disabilities, utilizing common accessibility standards and practices.

TECHNICAL CAPABILITIES

Section E of the NPRM ("Digital-to-Analog Converter Box") delineates the proposed technical capabilities of the converter boxes which will be subsidized by this program.

Specifically, NTIA proposes the following technical characteristics in certifying a converter box:

- "(a) appropriately processes all ATSC radio frequency (RF) signals provided to the antenna-only input and then provides output signals in standard definition video for display on an NTSC television receiver/monitor;
- (b) delivers NTSC composite video and stereo audio to drive NTSC monitors;
- (c) delivers Channel 3 or 4 switchable (NTSC) RF output for television receivers;
- (d) complies with FCC requirements for Closed Captioned, Emergency Alert System (EAS) and the required parental controls;
- (e) operable by and includes a remote control; and
- (f) tunes to all television channels 2-69."

Concerns regarding accessibility, specifically for people with sensory disabilities, arise from the lack of specificity in the above parameters. NTIA should clarify the following points:

- Audio Capabilities – Video Description Support

When delivering stereo audio, the full Multichannel Television Sound standard (MTS), established by the National Television Systems Committee (NTSC) in 1984, should be supported. MTS includes support for the Secondary Audio Program (SAP) service where video description for blind individuals is carried (also known variously as DVS[®], Descriptive Video Service[®], audio description, or narrative description). Video description within digital television signals will be delivered via multiple ancillary audio services (including alternate language audio) and these additional audio channels should all be available via the subsidized converter box. An accessible menuing system should also be implemented to allow visually impaired users to choose among the various ancillary audio services that will be received and converted by the subsidized converter box.

- Closed Captioning

The NPRM proposes that an eligible subsidized converter box will "... compl[y] with FCC requirements for Closed Captioned [sic]..." More commonly known as "closed captioning," the converter box specifications must explain and clarify that the ATSC signal which arrives at the converter box's antenna input may contain as many as 63 different caption channels per program as specified by the standard known as "CEA-708." FCC regulations¹ require digital television sets and digital set-top boxes to detect and display up to six standard services per program. Thus, it is likely that TV programs of the future will contain multiple caption tracks and the converter box not only needs to be able to convert the incoming "CEA-708" DTV caption data to the analog captioning standard known as "CEA-608," (which is the caption data format which the circuitry of analog television receivers decode into on-screen text), but must also provide a means of mapping the six DTV caption channels to the four analog TV caption channels

¹ FCC Report and Order (00-259), In the Matter of Closed Captioning Requirements for Digital Television Receivers

presently supported and required by FCC rules. (These analog caption channels are often referred to as CC1, CC2, CC3, and CC4 and the data for these channels reside on line 21, fields one and two, of the analog TV signal. These multiple channels are used to provide caption users with a choice among verbatim captioning, edited captioning, Spanish translation of programming in text form and other ancillary data services).

- Remote controls

The accessibility of the user interface is of great concern to people with visual impairments and motor impairments. In addition, the basic usability of the remote control is also an issue. A properly designed user interface would be one which can be operated by anyone, without assistance, and is intuitively obvious. For people with disabilities, a poorly designed user interface can mean the difference between being able to readily use a device and not being able to use the device at all.

At a bare minimum, the converter box's remote control should contain dedicated keys which provide direct access to the closed captioning function and the SAP/video description function. Too often these functions are nested deeply in on-screen menus, often many levels down. For a user of closed captions, this is a huge frustration. For a user of video description, this is an absolute and irremediable barrier. Some consumer electronics manufacturers provide direct access to these functions via dedicated keys on the remote control. For the SAP key, a tactile differentiator provides assistance to people who can't see. E.g., a nib on the key or a shape different from all the other remote control keys helps guide a blind user to the proper control. Dedicated keys for access features and tactile differentiation of those keys on the remote control should be required of manufacturers.

An additional, and more ideal solution for blind people, is a user interface which utilizes audio output and feedback to guide the user through the device's capabilities. "Talking menus" can be designed which read out the functions that are highlighted on an on-screen menu, thus providing an audio analog to the visual interface. Guidelines for the design and development of such menus are available at: <http://ncam.wgbh.org/resources/talkingmenus/>

- Additional Standards – Section 508

In the technical standards section of the NPRM, NTIA "invites comment on the appropriate minimum technical capabilities for converter boxes. We also seek comment on the extent we should consider certain standards, such as energy standards, in determining the type of converter box that would be eligible for this program. How would these standards affect this program?" Section 508 is such a standard that should be considered. According to the web site operated by the General Services Administration (www.section508.gov):

"In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology."

An analysis must be undertaken to determine whether the large expenditure of Federal funds to subsidize the purchase of converter boxes is subject to section 508 requirements. These requirements, clearly spelled out in guidelines published in December of 2000 (65 Fed. Reg. 80499), can be applied to the converter box design and

outreach activities and contain such technical guidelines as are mentioned above.

- Testing/Certification Processes

The same section of the NPRM says, "We also invite comment on whether there are existing industry or government organizations engaged in activities that can help speed the development of testing/certification processes within the allowed time frame of this program." If NTIA determines that there are such public or private organizations that can contribute to the timeliness and success of this program, those organizations should be directed to include testing of accessibility features and requirements as part of their activities.

- Support/Repair/Upgrades

Specifications, standards and best practices for digital television broadcasting – and the essential access services provided as part of DTV – are evolving technologies. Even in 2009 when the converter boxes are deployed, changes due to mistaken interpretations of DTV standards, as well as errors caused by incorrect implementations, are to be expected. NTIA must protect the consumers and the investment of taxpayer money in the subsidy program by requiring the converter boxes to have the ability to accept fixes for software changes and problems. Over-the-air software download mechanisms are available to assure the continuing successful operation of the boxes and should be required as part of the maintenance program that should also be put in place by manufacturers of the devices. Software downloads will accommodate any potential future changes to emergency alerting, closed captioning or V-chip parental control ratings as they may develop

CONSUMER EDUCATION

An important aspect of the converter box subsidy program is the public information campaign which will help the public understand the digital transition and the availability of the digital-to-analog converter box program. As the NTIA seeks proposals to produce and disseminate electronic and physical messages to the public concerning the program, every effort must be made to assure that all of this information will include information which addresses the needs of people with disabilities and will be produced in an accessible manner, with alternate formats for people with print disabilities and other special needs.

For example, all television announcements should be closed captioned and video described. Print materials should be readily available in large-print and Braille formats. Web-based communications must be produced according to existing or emerging Web accessibility guidelines (including section 508 guidelines and those promulgated by the World Wide Web Consortium's Web Accessibility Initiative).

- Retailer Order Fulfillment

NTIA encourages vendors to make the converter boxes available via mail, phone or Internet-based sales. All of the above-mentioned accessibility issues arise in each of these venues as well, in addition to the need for proper training of online, phone-based and in-store personnel; accessible use of automated telephone interactive voice response systems, and additional accommodations necessary when serving people with disabilities in all of the environments, physical and electronic, that the converter boxes will be sold.

SUMMARY

The transition to digital television in this country promises to enhance the lives of all of us and to free up valuable spectrum for many vital public service and commercial uses. Congress and the Administration have recognized that the benefits of the transition must not be accompanied by drastic negative consequences to our most vulnerable fellow citizens. Our most-common and most-comfortably used medium – television – must continue to be available to all Americans. With attention to certain basic principles of access and fairness, America's citizens with disabilities can be equally served by the transition to digital television.

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