

# CEA Standards Update

## Call for Participants: ATSC Mobile/Handheld Special Interest Group

CEA is forming a Special Interest Group (SIG) to give its members a venue to share information about Advanced Television Systems Committee mobile/handheld technology (ATSC M/H). The SIG will help the consumer electronics industry understand this technology and its market dynamics.

ATSC M/H allows TV broadcasters to use part of their signals to deliver services that can be reliably received by handheld devices and receivers in moving vehicles. Broadcasters have expressed a keen interest in launching mobile services to coincide with the 2009 holiday selling season. U.S. broadcasters, representing more than 800 TV stations, formed the Open Mobile Video Coalition ([OMVC](#)) to accelerate the development and rollout of mobile DTV services.

The ATSC has fast-tracked its efforts to develop an M/H emission standard. It is anticipated that within the next two months there will be what the ATSC calls a Candidate Standard for ATSC M/H. In principle, this Candidate Standard will enable both the manufacturers of broadcast equipment and manufacturers of mobile and handheld receiving devices to design and build ATSC M/H equipment. In practice, it may be difficult for a manufacturer who has not participated in ATSC M/H development to go from Candidate Standard to working product. More, there will be field trials and potential refinements to the technology over the next six months.

CEA members interested in joining the SIG should contact Jack Cutts at [jcutts@CE.org](mailto:jcutts@CE.org) and Brian Markwalter at [bmarkwalter@CE.org](mailto:bmarkwalter@CE.org).

## Call-for-Participants: Remote User Interface (RUI) Test Specification for CEA-2014-A Web4CE

R7WG9 Enhanced UPnP Remote User Interface Working Group is seeking knowledgeable participants to help develop a compliance and test specification for CEA-2014-A, *Web-based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)*.

The test specification would initially cover the following areas outlined in the current CEA-2014-A spec:

- Setup: Discovery and Connection of Remote UI Devices (both client and server)
- Capability Exchange
- HTTP Headers
- XHTML profile (CE-HTML)
- NotifSocket Scripting Object
- 3rd Party Notifications
- AV control
- Save-Restore
- Cookie Support
- Robustness Guidelines (Server-side only)

A special RUI Test Task Force, under the auspices of R7WG9, is being established to develop the CEA-2014-A test specification. The task force will be co-chaired by Michael van Hartkamp of Philips and Russell Berkoff of Samsung.

The Task Force's first teleconference is scheduled for October 9 at 10:00am ET.

A subsequent Task Force face-to-face meeting is scheduled for November 6 from 9:00am-4:00pm ET at CEA's office in Arlington, VA (this meeting will follow the R7WG9 2-day meeting on Nov. 4 & 5).

If you would like to contribute to this new work effort, please contact Leslie King at [lking@CE.org](mailto:lking@CE.org).

## New Projects

- ✚ DTV Audio Metadata (new recommended practice that would help consumers more easily navigate to secondary audio programs (e.g., alternate language feeds) in DTV signals).

## Recently Published ANSI Standards

- ✚ ANSI/CEA-775-C, *DTV 1394 Interface Specification* (published September 2008)
- ✚ ANSI/CEA-775.2-A, *Service Selection Information for Digital Storage Media Interoperability* (published August 2008)
- ✚ ANSI/CEA-2031, *Testing and Measurement Methods for Mobile Loudspeaker Systems* (published September 2008)

## Recently Published CEA Standards

- ✚ CEA-708-D, *Digital Television (DTV) Closed Captioning* (published August 2008)
- ✚ CEA-805-D, *Data Services on the Component Video Interfaces* (published August 2008, ANSI public review comments due 10/20/08)
- ✚ Errata for CEA-2014-A, *Web-Based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)* (published August 2008)

## Publications Nearing ANSI Completion

- ✚ CEA-849-B, *Application Profiles for CEA-775 Compliant DTVs* (published May 2008, ANSI public review closed 7/28/08, awaiting final ANSI approval)

## Publications Nearing CEA Completion

- ✚ CEA-9, *Standard Method of Measurement for Phonograph Cartridges Used in Analog Disc Playback Equipment* (vote scheduled for 10/21/08)
- ✚ CEA-490-A, *Standard Test Methods of Measurement for Audio Amplifiers* (vote scheduled for 10/21/08)
- ✚ CEA-542-C, *Cable Television Channel Identification Plan* (vote scheduled for 10/23/08)
- ✚ CEA-636, *Recommended Loudspeaker Safety Practices*, (vote scheduled for 10/21/08)
- ✚ CEA-709.1-C, *Control Network Protocol Specification* (vote scheduled for 10/15/08)
- ✚ CEA-762-B, *DTV Remodulator Specification* (approved 7/24/08, in final editorial review)
- ✚ CEA-774-B, *TV Receiving Antenna Performance Presentation and Measurement* (pre-vote comment period closed 9/9/08, comments being addressed)
- ✚ CEA-819-A, *Cable Compatibility Requirements for Two-Way Digital Cable TV Systems* (approved for withdrawal 8/26/08)
- ✚ CEA-852-B, *Tunneling Component Network Protocols Over Internet Protocol Channels* (approved 12/7/06, in final editorial review, awaiting completion of CEA-852.1, *Enhanced Tunneling Device Area Network Protocols Over Internet Protocol Channel*)
- ✚ CEA-2006-B, *Testing and Measurement Methods for Mobile Audio Amplifiers* (vote scheduled for 10/20/08)
- ✚ CEA-2002-A, *Test Procedure for Powerline Carrier Technology* (vote scheduled for 10/23/08)
- ✚ CEA-2028-A, *Color Codes for Outdoor TV Receiving Antennas* (pre-vote comment period closed 9/9/08, comments being addressed)
- ✚ CEA-2032-A, *Indoor TV Receiving Antenna Performance Standard* (pre-vote comment period closed 9/9/08, comments being addressed)

- ✚ CEA-2035 (aka J-STD-070), *Emergency Alert Signaling for the Home Network* (vote scheduled for 10/23/08)
- ✚ CEA-CEB11-A, *NTSC/ATSC Loudness Matching* (pre-vote comments due 10/15/08)

## Ongoing Work

- ✚ CEA-516, *Joint EIA/CVCC Recommended Practice for Teletext: North American Basic Teletext Specification (NABTS)*, five year review
- ✚ CEA-709.2-B, *Control Network Power Line (PL) Channel Specification*
- ✚ CEA-851.1-A, *IP-Based Digital Telephony for the Versatile Home Network*
- ✚ CEA-851.2, *Security Services for the Versatile Home Network*, five year review
- ✚ CEA-852.1, *Enhanced Tunneling Device Area Network Protocols Over Internet Protocol Channels*
- ✚ CEA-2014-B, *Web-based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)*
- ✚ CEA-2017-A, *Common Interconnection for Portable Media Players*
- ✚ CEA-2019, *Testing and Measurement Methods for Audio Amplifiers*
- ✚ CEA-2021, *Auto Discovery & Self-configuring Home Control Networks*
- ✚ CEA-2030-A, *Multi-Room Audio Cabling Standard*
- ✚ CEA-2034, *Standard Method of Measurement for In-Home Loudspeakers*
- ✚ CEA-CEB12-A, *PSIP Recommended Practice*, five year review
- ✚ CEA-CEB20, *A/V Synchronization Processing*
- ✚ CEA-CPEB6-A, *Preferred Voltage and Impedance Values for the Interconnection of Audio Products*, five year review
- ✚ Possible consumer guidelines for using indoor TV antennas

## Summary of Projects by CEA Product Division

### Accessories

#### ✚ Smart Antenna Performance

CEA's Antennas Committee is working on CEA-774-B, *TV Receiving Antenna Performance Presentation and Measurement*, CEA-2028-A, *Color Codes for Outdoor TV Receiving Antennas*, and CEA-2032-A, *Indoor TV Receiving Antenna Performance Standard*. This simultaneous work on these three standards is expected to result in performance criteria and test and measurement

procedures for “smart” antennas. Smart antennas automatically steer themselves, usually by adjusting the positions of nulls or lobes in their patterns. They enable consumers to enjoy free over-the-air television without having to manually adjust their antennas every time they change channels. It is hoped that this project will lead to a smart antenna certification program, and then to AntennaWeb.org recommendations for the use of certified smart antennas. AntennaWeb.org, jointly sponsored by CEA and the National Association of Broadcasters, predicts television reception when given an address, and recommends the types of antennas that will provide best reception at that address. Pre-vote comment periods for all three standards closed on 9/9/08 and comments are now being addressed. Interested? [Join R5](#).

### **Indoor Antenna Guidelines for Consumers**

The Antennas Committee is considering the development of guidelines or recommendations for consumers who are using indoor TV antennas. The computer prediction models that it developed for [www.AntennaWeb.org](http://www.AntennaWeb.org) only apply to outdoor antennas. Interested? [Join R5](#).

## **Audio**

### **Standard Audio Levels**

The Audio Systems Committee is conducting its five year review of CEA-CPEB6-A, *Preferred Voltage and Impedance Values for the Interconnection of Audio Products*. The bulletin defines preferred voltage and impedance values for inputs and outputs of generally available, mass produced, audio products and accessories. By following these guidelines manufacturers can facilitate the interconnection of products from different manufacturers and permit the addition of other products or accessories to integrated systems. Interested? [Join R3 WG9](#).

### **Phonograph Cartridges**

The Audio Systems Committee is conducting its five year review of CEA-9, *Standard Method of Measurement for Phonograph Cartridges Used in Analog Disc Playback Equipment*. This standard describes standard test conditions and procedures for testing an electromechanical phonograph cartridge transducer. It also defines a method for reporting test results. A vote to reaffirm this standard is scheduled for 10/21/08. Interested? [Join R3](#).

### **Audio Amplifier Measurement**

The Audio Systems Committee is conducting its five year review of CEA-490-A, *Standard Test Methods of Measurement for Audio Amplifiers*. This standard describes

a measurement procedure for measuring various characteristics of multi-channel audio amplifiers. A vote to reaffirm this standard is scheduled for 10/21/08. Interested? [Join R3 WG8](#).

### **Loudspeaker Safety**

The Audio Systems Committee is conducting its five year review of CEA-636, *Recommended Loudspeaker Safety Practices*. This standard is proposed for withdrawal because it has been superseded by CEA-CEB19, *Recommended Loudspeaker Safety Practices*. Both documents describe recommended practices for producing loudspeakers that do not pose safety hazards. A vote to withdraw CEA-636 is scheduled for 10/21/08. Interested? [Join R3](#).

### **Distributed Audio**

The Audio Systems Committee is working on an addition to CEA-2030, *Multi-Room Audio Cabling Standard*, which defines how to configure cabling and connectors in order to distribute analog and digital audio throughout a home. The new addition will explain how to document distributed audio systems installed in homes. Interested? [Join R3 WG7](#).

### **Loudspeaker Performance**

An Audio Systems Committee working group is currently developing CEA-2034, *Standard Method of Measurement for In-Home Loudspeakers*, which it hopes will describe a method for measuring and reporting frequency response and perhaps other loudspeaker characteristics in a manner that will be easy for non-technical consumers to understand. Interested? [Join R3 WG1](#).

### **Amplifier Performance**

Another Audio Systems Committee working group is attempting to write an amplifier measurement standard aimed mainly at home theater in-a-box systems, but which would include some other audio amplifiers as well. There is hope that this standard, and perhaps an accompanying CEA logo program, may help ensure consumers’ ability to make apples-to-apples comparisons among these types of products. The new standard would be called CEA-2019, *Testing and Measurement Methods for Audio Amplifiers*. Interested? [Join R3 WG8](#).

## **Mobile Electronics**

### **Mobile Audio Amplifiers**

The Mobile Electronics Committee is working on CEA-2006-B, *Testing and Measurement Methods for*

*Mobile Audio Amplifiers*. This standard describes a method for testing the performance of mobile audio amplifiers and reporting the results. A vote on this updated standard is scheduled for 10/20/08. Interested? [Join R6 WG10](#).

#### **PDMI Connector**

The Mobile Electronics Committee is working on a proposed “digital overlay” for the portable digital media interface (PDMI) connector. It is mapping the pins on the PDMI connector to accommodate additional digital signals. These digital signals, including USB 3.0 and/or HD video, would be supported in addition to the analog signals that have already been accommodated. However, in order to make this work the “digital version” of the connector would sacrifice some analog functionality. For example, the connector likely would not support serial connectivity or analog audio in/out at the same time as USB v3.0 or HD video. This would not mean that serial connectivity or analog audio in/out would be removed from the connector, only that they would not be supported simultaneously with USB v3.0 or HD video.

PDMI connectors comply with CEA-2017, *Common Interconnection for Portable Media Players*, which was approved as an American National Standard in July 2007. It is hoped that this connector will eventually become a standard feature on vehicle dashboards, making it easy for consumers to plug their portable media devices into their vehicle power supplies and audio/video systems. Interested? Join [R6 WG15](#).

#### **Mobile Loudspeakers**

The Mobile Electronics Committee published ANSI/CEA-2031, *Testing and Measurement Methods for Mobile Loudspeaker Systems*, in September 2008. This standard defines a method for measuring and reporting the performance of mobile loudspeakers systems.

## TechHome

#### **LonTalk®-based Control Network Protocol**

The Home Systems Control Subcommittee is considering revisions to CEA-709.1-C, *Control Network Protocol Specification*. This standard describes a control network protocol that can be used over different physical links. This protocol is suitable for implementing both peer-to-peer and master-slave system strategies. An email ballot has been scheduled for 10/15/08.

#### **VOIP for Versatile Home Network**

The Home Networks Committee is working on CEA-851.1-A, *IP-Based Digital Telephony for the Versatile Home Network*. This standard defines IP-based telephony for the Versatile Home Network. Interested? [Join R7](#).

#### **Security Services for Versatile Home Network**

The Home Networks Committee has begun its five year review of CEA-851.2, *Security Services for the Versatile Home Network*. This standard defines security services for the home network defined in ANSI/CEA-851-A, *Versatile Home Network*. It assumes a VHN that is digital and IP-based, and that uses web tools like HTTP for device control. Interested? [Join R7](#).

#### **IP Tunneling**

The Home Systems Control Subcommittee approved CEA-852-B, *Tunneling Component Network Protocols Over Internet Protocol Channels* on 12/7/06. This standard specifies a communications method that allows networked data acquisition and control devices to communicate with each other over the Internet. It is currently under final editorial review and will be published after CEA-852.1, which it references, is completed.

The subcommittee is also working on CEA-852.1, *Enhanced Tunneling Device Area Network Protocols Over Internet Protocol Channels*. This standard will address limitations in the CEA-852-B protocol and provide improvements in performance, scalability, and robustness. Some of the provisions in CEA-852.1 might not be backward compatible with earlier versions of CEA-852. Interested? [Join R7.1 WG2](#).

#### **Powerline Carrier Test Procedure**

The Home Networks Committee is nearing completion of CEA-2002-A, *Test Procedure for Powerline Carrier Technology*. This standard defines a test procedure that can be used to validate key aspects of power line carrier systems. A vote is scheduled for 10/23/08. Interested? [Join R7](#).

#### **Remote User Interface for UPnP™ Devices**

The Home Networks Committee published CEA-2014-A, *Web-Based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)*, in July 2007. Several errors were discovered and an erratum was published in August 2008. CEA-2014-A defines how to produce remote user interfaces for UPnP™

devices. Revisions from the previous version clarify several points that some readers thought were unclear. The next revision is expected to extend the functionality of the standard while preserving existing functionality and maintaining backward compatibility. It is expected to add new functionality in the following general areas: remote user interface access to the underlying platform resources, the level of security available within the remote user interface and protocol framework, and the remote user interface experience. Interested? [Join R7 WG9](#).

### **Power Line Carrier**

The Home Control Systems 1 Subcommittee is working on CEA-709.2-B, *Control Network Power Line (PL) Channel Specification*. This standard describes the physical characteristics of a communications network that uses power lines to collect and distribute information. Interested? [Join R7.1](#).

The Home Control Systems 1 Subcommittee is also working on CEA-2021, *Auto Discovery & Self-configuring Home Control Networks*. This standard is expected to define a method for devices on a home control network to automatically discover each other and exchange data. It will facilitate the development of future home automation devices that may be installed by CE installers, electricians, or do-it-yourself homeowners. It will provide a set of standard application-layer services for the ANSI/CEA-709.1 protocol, thus enabling devices and appliances from different manufacturers to work together in a home network. Interested? [Join R7.1](#).

## **Video**

### **North American Teletext**

The Television Data Systems Subcommittee has begun its five-year review of CEA-516, *Joint EIA/CVCC Recommended Practice for Teletext: North American Basic Teletext Specification (NABTS)*. This standard describes the transmission technique, coding language, and user interface for one-way broadcast teletext service applications in North America using NTSC television signals. Interested? [Join R4.3](#).

### **Cable Channel Numbering**

The Cable Compatibility Committee is working on CEA-542-C, *Cable Television Channel Identification Plan*. This standard defines 6 MHz channel allocations for 158 channels up to 1002 MHz, and includes a method for specifying higher channels. It does not preclude channel mapping in cable systems. It applies to channels carrying analog or digital signals, though it does not specify a

numbering plan for the tuning of digitally multiplexed services within one or more RF channels. A vote on this standard is scheduled for 10/23/08. Interested? [Join R8 WG3](#).

### **DTV Remodulator Specification**

The DTV Interface Subcommittee approved CEA-762-B, *DTV Remodulator Specification*, on 7/24/08. This standard defines minimum specifications for a one-way data path utilizing an 8-VSB trellis remodulator that complies with ATSC Standard A/53B, Annex D. This standard applies to any device used to connect to an ATSC compliant digital television (DTV) receiver. Devices meeting this standard should interoperate with any ATSC compliant receiver that also supports “monitor mode.” The standard is in final editorial review and will be published soon. It will also be sent to ANSI for public review.

### **IEEE 1394 Service Selection Information**

The DTV Interface Subcommittee published ANSI/CEA-775.2-A, *Service Selection Information for Digital Storage Media Interoperability*, in August 2008. This standard defines how to store Service Selection Information when recording a program over the IEEE 1394 high-performance serial bus described in CEA-775-B. Service Selection Information includes information such as the title of the program, the program duration, descriptors related to the program such as content advisories and the name of the source channel from which the program was recorded.

### **IEEE 1394 Application Profiles**

The DTV Interface Subcommittee published CEA-849-B, *Application Profiles for CEA-775 Compliant DTVs*, in May 2008. This standard defines profiles for various applications of the IEEE 1394 high performance serial bus described in CEA-775-B. The applications covered include ATSC digital television streams, direct broadcast satellite digital streams, US cable digital streams and standard definition digital video camcorder digital streams. ANSI public review closed on 7/28/08 and the standard is now awaiting final ANSI approval.

### **Data Over Component Video Interface**

The DTV Interface Subcommittee approved CEA-805-D, *Data Services on the Component Video Interfaces* on 5/22/08. This standard describes how to transmit data over the analog component video interfaces (CVI) described in CEA-770.2-C and CEA-770.3-D, and it covers all CE devices carrying data on the CVI vertical blanking interval

(VBI). It was published in August 2008 and ANSI public review closes on 10/20/08.

### **Two-Way Cable Systems**

The Cable Compatibility Committee approved the withdrawal of CEA-819-A, *Cable Compatibility Requirements for Two-Way Digital Cable TV Systems* on 8/26/08. This standard defines minimum requirements for two-way digital cable TV systems and two-way digital TV receivers whose RF inputs and outputs connect directly to these cable systems. These systems permit the viewing of analog and digital TV programs, as well as additional features such as impulse pay-per-view purchases, interactive shopping and audience opinion polling.

### **Loudness Matching Between Analog/Digital TV**

The Video Systems Committee is nearing completion of CEA-CEB11-A, *NTSC/ATSC Loudness Matching*. This bulletin provides guidance to TV set makers on how to maintain uniform audio loudness between analog NTSC programs and digital ATSC programs. It assumes that NTSC broadcasters follow accepted North American broadcast practices for audio levels, and that ATSC broadcasters have encoded their signals with the correct “dialnorm” value, a number that corresponds to the actual dialog level of the program material. Pre-vote comments are due 10/15/08. Interested? [Join R4 WG10](#).

### **DTV Closed Captioning**

The Television Data Systems Subcommittee published CEA-708-D, *Digital Television (DTV) Closed Captioning*, in August 2008. This standard was updated to coordinate with related Advanced Television Systems Committee (ATSC) and Society of Motion Picture and Television Engineers (SMPTE) standards.

### **DTV 1394 Interface**

The DTV Interface Subcommittee published ANSI/CEA-775-C in September 2008. This standard defines a method by which set-top boxes, DVRs and other similar devices may send MPEG video to a DTV set for decoding using a 1394 interface. The DTV Interface Subcommittee works to keep CEA-775 up to date with the latest standards developed by the 1394 Trade Association. Interested? [Join R4.8 WG1](#).

### **PSIP Recommended Practice**

The Television Data Systems Subcommittee is conducting its five year review of CEA-CEB12-A, *PSIP Recommended Practice*. This bulletin provides guidance

for designing DTV receivers, cable TV receivers, video recorders and other consumer products that make use of the Advanced Television Systems Committee’s (ATSC) Program and System Information Protocol (PSIP). It provides recommendations and suggestions for device functionality. Interested? [Join R4.3](#).

### **DTV Audio Metadata**

The Television Data Systems Subcommittee is beginning work on a recommended practice that will give guidance to receiver manufacturers on how to parse the relevant portions of an ATSC audio stream, particularly in situations where the broadcaster is sending audio in multiple languages. It is considering what practices might be followed in order to help consumers most easily find the audio streams that they are looking for. Interested? [Join R4.3 WG12](#).

### **DTV Receiver Audio/Video Synchronization**

The Video Systems Committee has begun work on CEA-CEB20, *A/V Synchronization Processing*, a bulletin that will recommend methods for synchronizing audio and video content at the receiver using time stamps in MPEG-2 transport streams. Interested? [Join R4 WG15](#).

### **XML Schema for Emergency Alert Information**

The Cable Compatibility Committee is working on CEA-2035, *Emergency Alert Signaling for the Home Network*. This new standard will define an XML Schema to signal emergency alert information from home network servers to home network client devices, in harmony with existing standards (CAP v1.1, ANSI J-042-A, and ATIS 0800012). A vote on this standard is scheduled for 10/23/08. Interested? [Join R8 WG5](#).