

# CEA Standards Update

## CEA Launches New Home Systems Committee with CEDIA

On 10/21/08 the Consumer Electronics Association's (CEA)® Technology & Standards Council approved the creation of a new standards committee that will be jointly led by CEA and Custom Electronic Design & Installation Association (CEDIA). R10, Residential Systems, will be co-chaired by Walt Zerbe, product manager, emerging technologies at Russound, and Mario Leone, a custom design engineer and owner of Electronic Solutions Company in the Philadelphia area. Zerbe was nominated by CEA and Leone was nominated by CEDIA. Zerbe stepped down from his role as co-chair of the Audio Systems Committee to assume his new position.

The new committee will develop standards and bulletins related to the design and installation of residential systems. It will focus mainly on the integration and installation of home systems, in contrast with the Home Networks Committee (R7), which focuses on equipment design and network protocols.

## Cumberland Becomes Co-chair of Audio Systems Committee

On 10/21/08 Tom Cumberland, vice president, research and development at Axiom Audio Ltd., was elected co-chair of the Audio Systems Committee (R3) by the Technology & Standards Council. He fills the position vacated by Walt Zerbe, who assumed a co-chair position on the newly formed R10 committee. In addition to being a valuable contributor to CEA's standards development efforts Cumberland is also vice chair of CEA's Home Audio Division board, and was recently elected to serve on CEA's Board of Industry Leaders (BIL). The BIL serves as the conduit for CEA's 2,200 member companies, and "helps protect our industry's interests through one resounding voice," said Gary Shapiro, president and CEO of CEA.

## Home Networks Committee Chair Rose Steps Down, Card Takes Over

William J. Rose, longtime chair of CEA's Home Networks Committee (R7), stepped down this month. At its 10/21/08 meeting CEA's Technology & Standards Council

appointed John Card II of Echostar to replace him, effective 11/1/08.

Rose is president and founder of WJR Consulting Inc., a consulting firm that advises manufacturers and technology development companies on product and business development, market strategies and standards relating to the consumer electronics and entertainment networking industries.

Card is director of standards and technology for EchoStar Technologies LLC and has been active in CEA standards work for a number of years.

## CEA Starting Work on 3D Video, Portable/Handheld Device Standards

At the CEA Technology & Standards Forum in Las Vegas this month CEA convened two discovery groups to examine interest in standards work related to 3D video and portable and handheld devices. There was significant interest in both areas.

The Video Systems Committee formed a task group that will examine possible 3D video standardization work and report back. The Technology & Standards Council formed a task group that will recommend where portable and handheld device standards would best be addressed within CEA's existing committee structure. Both task groups are expected to act quickly.

## Deepak Joseph Joins CEA Staff

Deepak Joseph joined the CEA Technology & Standards Department on 10/6/08. He comes from Sprint Nextel where he managed the Device Ecosystem initiative for the launch of WiMax broadband services under the Xohm brand. Prior to Sprint Deepak was with Freescale Semiconductor, the chip business that Motorola spun off a few years ago. Deepak's work at Sprint in helping chip suppliers and product manufacturers come together to create an array of WiMax devices for Sprint's network is perfect prologue for what he will be doing at CEA. As evidenced by CEA's PlugFests and logo programs, the industry needs more than standards to sell products. Deepak will be building relationships with companies and organizations to complete the services CEA provides in our mission to grow the industry. You can reach Deepak at 703-907-7046 or [djoseph@CE.org](mailto:djoseph@CE.org).

## Recently Published ANSI Standards

- ✚ CEA-861-E Errata, *A DTV Profile for Uncompressed High Speed Digital Interfaces*

## Recently Published ANSI Standards

- ✚ ANSI/CEA-775-C, *DTV 1394 Interface Specification* (published September 2008)
- ✚ ANSI/CEA-849-B, *Application Profiles for CEA-775 Compliant DTVs* (published October 2008)
- ✚ ANSI/CEA-2031, *Testing and Measurement Methods for Mobile Loudspeaker Systems* (published September 2008)

## Recently Published CEA Standards

- ✚ CEA-805-D, *Data Services on the Component Video Interfaces* (published August 2008, ANSI public review closed 10/20/08 with no comments, will be forwarded to ANSI for final approval)

## Publications Nearing CEA Completion

- ✚ CEA-9, *Standard Method of Measurement for Phonograph Cartridges Used in Analog Disc Playback Equipment* (approved for withdrawal 10/21/08)
- ✚ CEA-490-A R-2008, *Standard Test Methods of Measurement for Audio Amplifiers* (reaffirmed 10/21/08, in final editorial review)
- ✚ CEA-542-C, *Cable Television Channel Identification Plan* (approved 10/23/08, in final editorial review, will be sent to ANSI for public review)
- ✚ CEA-636, *Recommended Loudspeaker Safety Practices*, (approved for withdrawal 10/21/08)
- ✚ CEA-762-B, *DTV Remodulator Specification* (approved 7/24/08, in final editorial review)
- ✚ CEA-774-B, *TV Receiving Antenna Performance Presentation and Measurement* (vote scheduled for 11/20/08)
- ✚ CEA-819-A, *Cable Compatibility Requirements for Two-Way Digital Cable TV Systems* (approved for withdrawal 8/26/08)
- ✚ CEA-851.1-A, *IP-Based Digital Telephony for the Versatile Home Network* (approved 10/23/08, in final editorial review)
- ✚ 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-2002-A, *Test Procedure for Powerline Carrier Technology* (approved 10/23/08, in final editorial review)

- ✚ CEA-2006-B, *Testing and Measurement Methods for Mobile Audio Amplifiers* (approved 10/20/08, in final editorial review, will be sent to ANSI for public review)
- ✚ CEA-2028-A, *Color Codes for Outdoor TV Receiving Antennas* (vote scheduled for 11/20/08)
- ✚ CEA-2032-A, *Indoor TV Receiving Antenna Performance Standard* (vote scheduled for 11/20/08)
- ✚ CEA-2035 (aka J-STD-070), *Emergency Alert Signaling for the Home Network* (pre-vote comment period closed 9/3/08, comments being addressed)
- ✚ CEA-CEB11-A, *NTSC/ATSC Loudness Matching* (pre-vote comment period closed 10/15/08, comments being addressed)

## Ongoing Work

- ✚ CEA-516, *Joint EIA/CVCC Recommended Practice for Teletext: North American Basic Teletext Specification (NABTS)*, five year review
- ✚ CEA-709.1-C, *Control Network Protocol Specification*
- ✚ CEA-709.2-B, *Control Network Power Line (PL) Channel Specification*
- ✚ 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-CEB21, *Recommended DTV Audio Metadata Normalization Practices*
- ✚ 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 will 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. Votes are scheduled for all three of these standards on 11/20/08. 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 withdrew CEA-9, *Standard Method of Measurement for Phonograph Cartridges Used in Analog Disc Playback Equipment* at its 10/21/08 meeting. This standard describes standard test conditions and procedures for testing an electromechanical phonograph cartridge transducer. It also defines a method for reporting test results.

### ✚ Audio Amplifier Measurement

The Audio Systems Committee reaffirmed CEA-490-A, *Standard Test Methods of Measurement for Audio Amplifiers* on 10/21/08. This standard describes a measurement procedure for measuring various characteristics of multi-channel audio amplifiers.

### ✚ Loudspeaker Safety

The Audio Systems Committee withdrew CEA-636, *Recommended Loudspeaker Safety Practices* at its 10/21/08 meeting. This standard was superseded by CEA-CEB19, *Recommended Loudspeaker Safety Practices*. Both documents describe recommended practices for producing loudspeakers that do not pose safety hazards.

### ✚ Residential Systems

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 approved CEA-2006-B, *Testing and Measurement Methods for Mobile Audio Amplifiers* on 10/20/08. This standard describes a method for testing the performance of mobile audio amplifiers and reporting the results. The revised document is in final editorial review and will be published soon. It will also be sent to ANSI for public review.

### 🚧 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.

## Home Networks

### 🚧 LonTalk®-based Control Network Protocol

The Home Systems Control Subcommittee is working on 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. Interested? [Join R7.1](#).

### 🚧 VOIP for Versatile Home Network

The Home Networks Committee approved CEA-851.1-A, *IP-Based Digital Telephony for the Versatile Home Network* on 10/23/08. This standard defines IP-based telephony for the Versatile Home Network. It is in final editorial review and will be published soon.

### 🚧 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 approved CEA-2002-A, *Test Procedure for Powerline Carrier Technology* on 10/23/08. This standard defines a test procedure that can be used to validate key aspects of power line carrier systems. It is in final editorial review and will be published soon.

### 🚧 Remote User Interface for UPnP™ Devices

The Home Networks Committee is working on a revision to CEA-2014-A, *Web-Based Protocol and Framework for Remote User Interface on UPnP™ Networks and the Internet (Web4CE)*. This 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 approved CEA-542-C, *Cable Television Channel Identification Plan* on 10/23/08. 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. This standard is

now in final editorial review. After publication it will be sent to ANSI for public review. 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.

#### **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](#).

#### **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 the ANSI public review period closed on 10/20/08. It will now be sent to ANSI for final approval.

#### **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.

## **IEEE 1394 Application Profiles**

The DTV Interface Subcommittee published ANSI/CEA-849-B, *Application Profiles for CEA-775 Compliant DTVs*, in October 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.

## **HDMI Reference Standard**

The DTV Interface Subcommittee has begun work on an errata that will clarify the relationship between the automatic format descriptor (AFD) line numbering scheme used in CEA-861-E, *A DTV Profile for Uncompressed High Speed Digital Interfaces*, and a slightly different line numbering scheme used by the Society of Motion Picture and Television Engineers (SMPTE). Interested? [Join R4.8 WG7](#).

## **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). The pre-vote comment period closed on 9/3/08 and comments are now being addressed. Interested? [Join R8 WG5](#).

## **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. The pre-vote comment period closed on 10/15/08 and comments are now being addressed. Interested? [Join R4 WG10](#).

## **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 working on CEA-CEB21, *Recommended DTV Audio Metadata Normalization Practices*, 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](#).