



USC Center for Sound AUDIO SUMMIT

The University of Southern California's new Center for Sound held an industry-wide summit to address implementation of loudness controls for High Definition Television July 31, 2007, on their University Park - Los Angeles campus.

More than 60 industry professionals attended this event with representation from broadcast, post, cable, DBS, manufacturing and multiple industry organizations.

"This was remarkable in the breadth of the attendance as such a wide range of professionals in this industry have probably never before gotten together around such an important single topic," said Professor Tomlinson Holman of the School of Cinematic Arts, organizer of the event.

Holman led off the day with an overview of the technical, economic, and other impacts of decisions made 15 years ago in writing the standards, and demonstrated some problems with sound segments recorded off the air and played in the calibrated facilities of the Cinema School.

"It is not a simple problem. You want to keep the intent of the program producer insofar as possible, but perhaps you are watching on a kitchen television set. In this case you can't appreciate the full loudness range.

Other presentations included Professor Holman and Dolby's Craig Todd insights on the history of the dialnorm standard. Sean Richardson from Starz presented data on loudness collected from feature films and added information on workflow procedures at his network. Ken Hunold from Dolby New York City presented a dialnorm primer. Jim Starzynski from NBCUniversal, the ATSC S6-3 DTV Loudness Sub Group chair presented on his network's tape and remote delivery practices, DTV station dialnorm procedures, the WNBC-DT 2nd generation transmission system. He included a summary reaching out to the industry asking for more dialnorm awareness and industry wide implementation of ATSC loudness practices.

A major reason to address this right now comes from the adoption rate of high-

the stand

Audio Summit... (continued from Page 1)

definition television, which is reaching critical mass. It is expected to be in 36% of U.S. homes by the end of the year, and the number of high definition channels is expected to increase significantly in the coming months.

A major part of the program was an open forum, where questions raised by those in one part of the chain could

be discussed by those from all parts of the chain.

For additional information about the USC Loudness Summit, please contact Jim Starzynski at Jim.Starzynski@nbcuni.com

Thanks to Jim Starzynski, NBC Universal; and Tom Holman, USC for their input with this article. ■

DTV Transition Coalition

The ATSC recently joined the Digital Television Transition Coalition, a group comprised of business, trade and industry groups as well as grass roots and membership organizations that share an interest in a smooth transition. The core mission of the Coalition is to ensure no consumer is left without broadcast television due to a lack of information about the transition.

A DTV Transition Coalition meeting was held on September 10, 2007 at the National Association of Broadcasters (NAB) in Washington, DC. A variety of topics by coalition members on the DTV transition were presented, including:

- An introduction of the new contractors chosen by NTIA to administer and promote the converter box coupon program.
- A discussion on the environmental impact of the transition and an introduction of Consumer Electronics Association (CEA)'s website on recycling and reuse of analog televisions and other electronics, www.mygreenelectronics.org
- Strategies to place DTV transition-related information into classrooms via Scholastic
- Recent government issues - specifically, actions that Congress, the National Telecommunications Information Administration (NTIA) and Federal Communications Commission (FCC) have taken regarding the DTV transition:

The coalition's sole purpose is to educate consumers about the February 17, 2009 federally mandated transition to digital

broadcasting, with the goal of no consumer losing television reception due to a lack of information about the DTV transition. The coalition does not promote or oppose any public policy issues surrounding the transition, although some coalition members do individually take positions on DTV-related issues.

A variety of printed materials about the DTV transition are now available online at www.dtvtransition.org/membertools. These include a DTV Transition Coalition flyer, a DTV talking points document and a PowerPoint presentation that member organizations can use for speaking engagements.

If ATSC Members know of any organizations that might be interested in joining the DTV Transition Coalition, please let the DTV Coalition know. Membership in the DTV Transition Coalition, and now numbers now numbers 161 organizations. The list of organizations that have joined the coalition is available on the coalition's Web site at www.dtvtransition.org, and is updated weekly.

If you have any comments or suggestions, or would like additional information on future Coalition activities, please do not hesitate to contact Jonathan Collegio at jcollegio@nab.org. ■



Standard

John Henderson named next TSG Chair



John Henderson

The Board of Directors of the Advanced Television Systems Committee (ATSC) have named John Henderson, to be the next Chairman of the Technology and Standards Group. Mr. Henderson has been an active participant in ATSC for many years, contributing to its technology and standards group, the planning committee and the board's strategic planning and membership subcommittees. He replaces Mr.

William Miller of ABC, whose term as TSG Chairman will expire on December 31, 2007.

"John Henderson has a long history of contributions to the ATSC Digital Television standards - from leading system-

specific tests of the original digital systems and the Grand Alliance system to his most recent contributions as TSG vice-chair, the chair of our Specialist Group on Receivers and a number of other leadership roles," said Glenn Reitmeier, ATSC Board of Directors Chairman, NBC Universal. "John's deep technical knowledge and balanced perspective on system and receiver design is widely recognized by ATSC members."

Adds ATSC President Mark Richer: "John will be taking the reins of our key technology group at an exciting time in the twenty five year history of our organization. As we develop the next generation of DTV Standards, we are fortunate to have a Technology and Standards chair with John's engineering experience and leadership skills." ■



Reduce,
Reuse,
Recycle

"So," you may be asking yourself, "come February 19th, what exactly will *happen* to unwanted analog television sets?"

For those people planning on investing in a brand-new television, instead of fitting their older model sets with set-top boxes, let your guilt be assuaged.

Electronics improve our lives in many ways. However, there's one place where these products should have no impact: the natural world. Through responsible use, reuse and recycling of electronics, the consumer electronics industry and consumers can protect and preserve the environment— together.

The Consumer Electronics Association (CEA) has established a new web presence, making it simple to discover more about recycling analog television sets, as well as other outdated electronic devices.

www.MyGreenElectronics.org allows you to search for recycling programs by product type or by zip code, finding convenient dropoff locations for your goods. The site also provides an "energy calculator" designed to determine your personal energy consumption costs, educational references on rethinking your electronics usage and reducing your power consumption, and resale & charitable options for donating items for reuse.

Electronics manufacturers can register their green products online at the site, and electronics recyclers can register their locations, certifications, and specific products they accept.

Kristina Taylor Duggan, Manager of the CEA's Environmental & State Policy Communications, says "Recycling your electronics not only protects the environment, it saves energy by making the manufacturing process more efficient. myGreenElectronics.org can help you find a recycler new you, but also help you make the right choices throughout every phase of your products' lifecycle, including how to buy green and use your products in an energy-conscious way."

For more information on recycling analog televisions and other electronics, please visit www.mygreenelectronics.org ■

ATSC 25th Anniversary

In 2008, the Advanced Television Systems Committee will celebrate its 25th anniversary. Several special events are planned for the week of May 5-9, the same time of the ATSC Annual Meeting, which will be held in Arlington, VA on May 8th.

Please save the date/mark your calendars for this exciting chapter in the continuation of our organizations history. Several special guests responsible for the creation of the ATSC will be invited, and we strongly encourage all members of ATSC to attend this years very special annual meeting.

More information regarding festivities will be forthcoming. Please keep your eyes peeled for sponsorship opportunities, which will be communicated via email, as well as save-the-date announcements. Other updates will be included in the Descriptor and Standard newsletters. Additionally, a 25th anniversary website will soon be launched, and will contain continually updated information regarding next spring's events.

For more information on the ATSC's 25th Anniversary, please contact Lindsay Shelton-Gross at lsheltongross@atsc.org ■

D I A L N O R M

By Steve Lyman, Dolby

Dialnorm is the meta-data parameter that controls decoder gain within the ATSC A-52 Digital (AC-3) audio compression standard.

The basic idea of the AC-3 system is to transmit the full original dynamic range of a program to the listener along with loudness and dynamic range control metadata. This allows the AC-3 decoder in each DTV receiver to present the program material at a normalized loudness, and allows individual listeners to limit the dynamic range, if they choose to, to suit their particular listening situation.

This is a complete departure from the conventional NTSC approach to loudness control. Because NTSC's FM sound system has a smaller dynamic range than DTV, and because NTSC broadcasters want to maintain a relatively high average modulation level, they typically use multi band compressor limiters (audio processors) to reduce the audio peak to average ratio, then push the remaining peaks up very close to 100% modulation levels. This tends to normalize program loudness (but clearly does not cure the "loud ad" problem reliably) and forces the listener to accept programs with some timbre changes and a much reduced dynamic range.

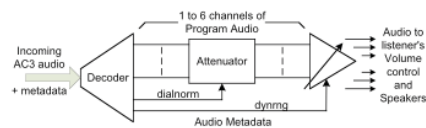
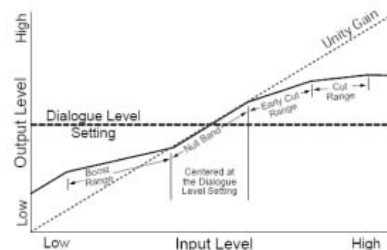


Figure 1 shows the concept of the AC-3 Digital system. The average loudness of the program is measured and expressed in terms of decibels below full scale. This "dialnorm" metadata value is added to the stream of rate reduced audio data and carried to the decoder as part of the AC-3 Digital data stream. There it is recovered and applied to an attenuator following the audio decoder. Different amounts of attenuation, based on the dialnorm of each

program, are applied to normalize the overall loudness of all the programs to -31 dBFS, thus essentially eliminating loudness variations between programs (and fixing the loud ad problem).

This is all predicated on being able to determine a value for dialnorm that accurately represents the overall program loudness. Fortunately, the industry now has a reliable, non-proprietary loudness meter. The second metadata parameter shown in Figure 1 is "dynrng". It is used to control the gain of a (multichannel) amplifier following the dialnorm attenuator and thus to alter the dynamic range of the program material.



The values of dynrng generated are determined by the relationship between the program level and the boost or cut gain ranges shown in Figure 2. The breakpoints are defined by a "profile" that can be selected by the program producer as being the most appropriate for that particular program.

The most important lesson of Figure 2 is that the Dialog Level (dialnorm) setting must be correct if the dynamic range control is to operate as intended. If the dialnorm value indicates that the overall program level is lower than it actually is, the low level portions will not be boosted, and the rest of the program will fall into the Cut ranges and be too heavily compressed.

For more information on dialnorm, contact Steve Lyman at sbl@dolby.com ■

ATSC would like to congratulate the following members for their prestigious industry awards:

2007 Library of Broadcasting "Giant of Broadcasting" Award

Joseph Flaherty, CBS

Profile: Victor Tawil, MSTV



Victor Tawil, MSTV

The Advanced Television Systems Committee board member Victor Tawil is a long-standing contributor to ATSC work. Victor is the Senior Vice President of the Association for Maximum Service Television (MSTV), providing leadership, technology and telecommunication policy guidance and support to MSTV and its more than 400 member television stations.

As well as being a board member of ATSC, Victor had served as Chairman of the Digital Television Station Project (WHD-TV), a test station for evaluating digital television production and transmission equipment, sponsored by the television and consumer electronics manufacturing industries.

In 2007, Victor was the recipient of the National Association of Broadcaster's (NAB) Engineering Achievement Award. The award recognizes outstanding achievements and contributions in the broadcast engineering profession.

Prior to joining MSTV in 1988, Mr. Tawil was with the Federal Communication Commission for fifteen years. He held various positions in a number of bureaus and in the Office of Science and Technology, specializing

in the fields of spectrum management, tropospheric propagation and system engineering. He has worked extensively in the areas of broadcasting, satellite, wireless communications and new communication technologies. During his tenure at the FCC, he served as a US delegate on a number of International and ITU Plenipotentiary Conferences, and bilateral negotiations. Victor's many other contributions to the advancement of broadcast television technology particularly include his work in the area of RF spectrum allocation, which was used to create the DTV channel assignment table. He is also being recognized for his ongoing leadership in researching RF modulation techniques for DTV, as well as testing technical transmission improvements for television broadcasting.

"Victor's dedication to the advancement of DTV with a focus on the optimal use of broadcast spectrum has made him an important leader in our industry," says Mark Richer, ATSC President.

Mr. Tawil holds an MSE in Electrical Engineering from the University of Rochester, and a BSE from New York University. He is a member of the International Union of Radio Scientist (URSI), Institute of Electrical and Electronic Engineers (IEEE) and the Society of Motion Picture and Television Engineers (SMPTE) and Tau Beta Pi.

Victor, who is fluent in both French and Arabic, has many personal hobbies as well as his robust professional life. Some favorites include boating, sailing, fishing and reading. He has two daughters, ages 25 & 29, and one grandson. ■

Joseph Flaherty Honored

It is an honor for ATSC to recognize board member Mr. Joseph Flaherty's recent acknowledgement as a "Giant of Broadcasting" by the American Library of Broadcasting. Mr. Flaherty was honored at a luncheon on September 19th at the Grand Hyatt Hotel in New York City, alongside several other industry luminaries, including Dennis Fitzsimons, Catherine L. Hughes, Charlie Rose, Diane Sawyer, Dennis Swanson, John Blair, and Tony Malara.

The Library was founded in 1972 as the Broadcast Pioneers Library. It was housed at the NAB until 1994, when it became a part of the University of Maryland. For more information on the Library of American Broadcasting, please visit their website: <http://www.lib.umd.edu/LAB/> ■



Front row: Wayne Luplow, Zenith; Lynn Claudy, NAB; Mark Richer, ATSC; Joe Flaherty, CBS; Jan Flaherty. **Back Row:** Glenn Reitmeier, NBC Universal; Craig Tanner, Sharp; Peter Fannon, Panasonic; Robert Graves, ATSC Forum; Bob Siedel, CBS; Michael Dolan, Rupert Stow, Consultant; John Taylor, LG Electronics.

the standard



1750 K Street NW, Suite 1200, Washington DC 20006

The ATSC is an international, non-profit organization developing voluntary standards for digital television. The ATSC has member organizations representing the broadcast, broadcast equipment, motion picture, consumer electronics, computer, cable, satellite, and semiconductor industries.

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or log on to
www.atsc.org

ATSC New Staff

ATSC would like to welcome it's newest staff administrative assistant, Li Liu. Li is a graduate student at the George Washington University, studying accounting. Please welcome her into the ATSC family!

Welcome Wagon

ATSC would like to welcome it's newest members:

Building-B, Inc., Dongguan Electronics, Legend Silicon, and Silicon Labs.

These companies have recently become members. We eagerly anticipate their contributions to the DTV standards currently being developed in the ATSC, and we know their participation will have an immeasurable effect on the future of digital television.

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this issue...



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2008 ATSC Draft Meeting Schedule

Please be aware that a preliminary schedule for 2008 ATSC meetings has been created. This calendar is subject to change, however, ATSC will make every effort to stick to this plan for the calendar year 2008. The calendar is also available for viewing online at:

www.atsc.org/technicalmeetings_2008.html

January 22 - Board

February 5 - PC

February 6 - TSG

February 27 - Board (conference call, tentative)

March 26 - Board (conference call, tentative)

April 30 - Board (conference call, tentative)

May 7 - PC & TSG

May 8 - ANNUAL MEETING

May 9 - Board

June 11 - Board (conference call, tentative)

July 9 & 10 - Board Retreat

July 16 - PC

July 17 - TSG

September 18 - Board (conference call, tentative)

September 23 - PC

November 5 - Board (conference call, tentative)

December 2 - PC

December 3 - TSG

December 17 - Board

If you are aware of a significant industry event that the ATSC should make every effort to avoid, please contact Lindsay Shelton-Gross at lsheltongross@atsc.org

Visit the current ATSC calendar online at
www.atsc.org/technicalmeetings.html