NAB TV TechCheck

The Weekly NAB Newsletter for Television Broadcast Engineers

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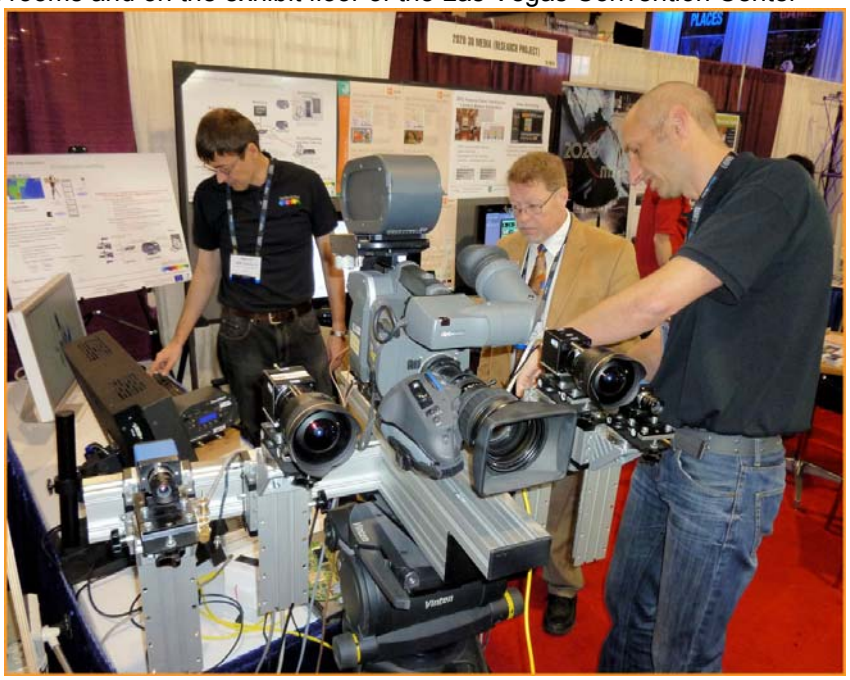
NAB 2010 is a Showcase for New Digital TV Technology

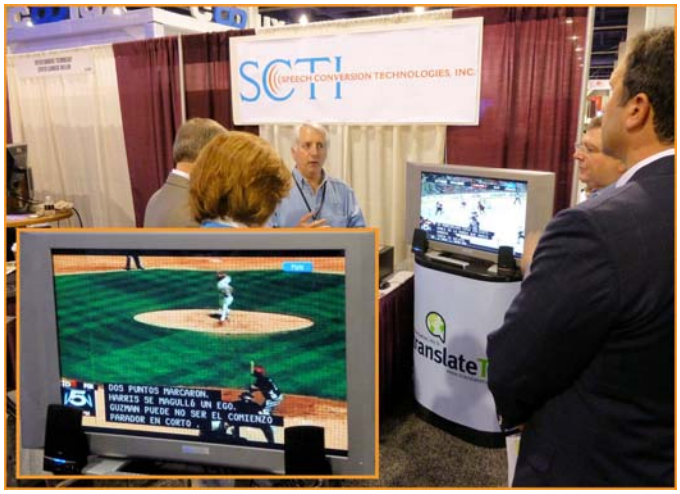
Last week's 2010 NAB Show (April 10-15, 2010, Las Vegas, NV, www.nabshow.com) was a showcase for new digital TV technology both in the session rooms and on the exhibit floor of the Las Vegas Convention Center (LVCC). Below are some highlights from this annual industry event.



International Research Park - 2020 3D Media Research Project – this was the first year for a new exhibit area, the International Research Park, which featured advanced broadcast technologies not yet commercially available. One of the exciting exhibits in this area was from the European 2020 3D Media Research Project, showing a highly advanced 3D production workflow. The system they were demonstrating (see photo) utilizes three cameras working together, one main and two satellite, to do "3D depth acquisition" in a much more sophisticated fashion that the two-image stereoscopic cameras being used commercially today. Looking closely at the photograph, there are actually five cameras mounted on the rail – a large main camera in the center, and two sets of satellite cameras, which can be used alternately for experimentation.

The capture of the three camera's video streams is done within a new infrastructure based on 10GigE and GigE-Vision. All uncompressed HD streams are recorded on a single field recorder, the FlashPakII approach, that can deal with up to seven cameras in parallel. The infrastructure and the field recorder provides a net data bandwidth of 9 Gbit/s. Members from this consortium exhibiting at NAB included JRS, Technicolor, University of Hasselt and Barcelona Media. For more information visit their Web site at www.20203dmedia.eu/.

International Research Park - Speech Conversion Technologies Inc. (SCTI) - partly funded by the NAB FASTROAD program (www.nabfastroad.org), SCTI was demonstrating a highly accurate automated speech recognition and conversion technology called "AutoVOZ." In the demonstration (see photo), an English language audio program was being translated into Spanish in real time, both into Spanish language captions (shown on the screen) and to a natural-sounding Spanish voice. Further, this tool synchronizes all of the captions (English and Spanish) and voice (also English and Spanish) with the video. For additional information, visit the SCTI Web site at www.speechtechno.com.

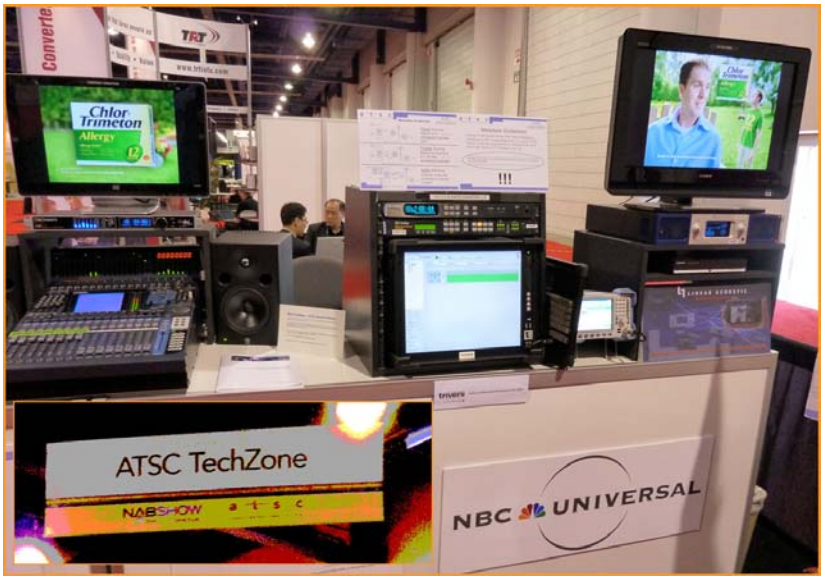


Mobile DTV Marketplace – a showcase of mobile DTV receiver technology, the Mobile DTV Marketplace was located at the front of the LVCC Grand Lobby. Sponsored by NAB, the ATSC, CEA and the Open Mobile Video Coalition (OMVC), some of the mobile DTV receivers on display included:

● LG Electronics was showing the first consumer product to carry the new ATSC Mobile DTV certification mark, the DP570MH mobile digital television with DVD playback. Also shown by LG was a prototype GSM mobile phone with a built-in mobile DTV receiver;

● Dell had on display an Inspiron Mini 10 with mobile DTV, WiFi and embedded broadband capabilities;
● The "Tivizen" model VTV-A10, a small, battery powered mobile DTV receiver designed to receive mobile DTV signals then stream them to WiFi-connected devices was also being shown. This device, previously announced at the 2010 International CES as the "Tivit," is expected to be available in May for a suggested retail price of $149;
● USB receivers – among the first mobile DTV products to reach consumers will be tiny USB receivers that will pick up mobile DTV signals and allow a laptop or other mobile Internet device with a USB connection to receive and display mobile DTV programs. USB Receivers from DTV Interactive, iMovee, and Hauppauge were featured.

ATSC Tech Zone - Audio Loudness Management – in the ATSC Tech Zone there was a demonstration of the tools necessary to address DTV audio loudness concerns. As part of its ongoing loudness awareness effort, the ATSC hosted NBC Universal and Dolby Laboratories in the ATSC Tech Zone where they demonstrated methods to manage the loudness of content during creation, distribution, and transmission, then showing the results and the impact on the consumer experience.

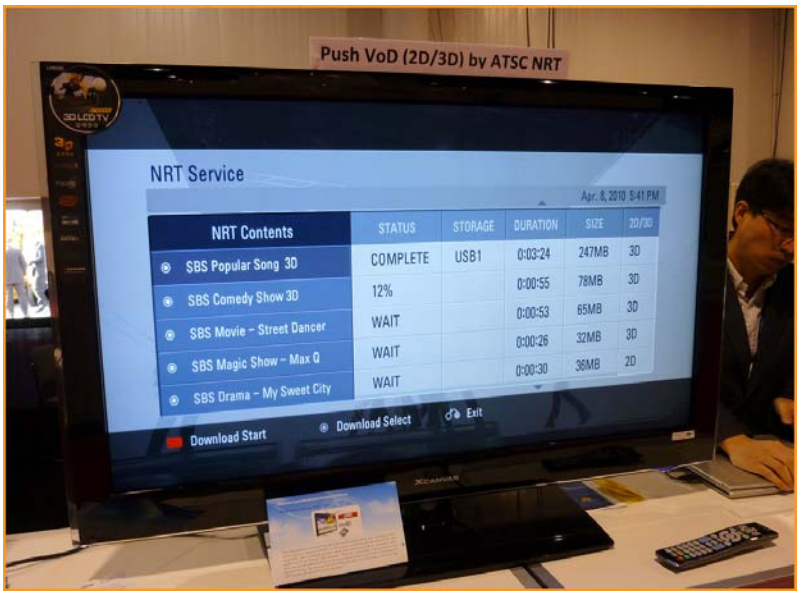


In the demonstration, a booth "operator" could mix the audio sources of NBC Nightly News with Brian Williams to the same -24LKFS loudness as done in Studio 1A in Rockefeller Center. Once the participant sets this level, the tools described in the ATSC Recommended Practice make it simple to verify the loudness and consistency of the signal as it passes through all points of the signal chain, and ultimately to the consumer's set top box.

As shown in the photo, program audio flow is from left to right, beginning with the mixing console through encoding and simulated transmission to a consumer DTV receiver. The ATSC's Recommended Practice on loudness control, ATSC document number A/85, is titled "Techniques for Establishing and Maintaining Audio Loudness for Digital Television." The RP provides guidance to broadcasters and creators of audio for high-definition or standard-definition television content. It recommends production, distribution, and transmission practices needed to provide the highest quality audio soundtracks to the digital television audience. The RP can be downloaded at no charge from the ATSC Web site at www.atsc.org/cms/index.php/standards/recommended-practices.

ATSC Tech Zone – 3DTV using non real-time (NRT) services – also in the TechZone was an exhibit conducted by a consortium of Korean broadcasters, LG Electronics, and Kyung Hee University of a non real-time (NRT) service using the ATSC digital TV system. Their demonstration featured an end-to-end implementation of the NRT technology which is one of the core elements of ATSC 2.0. The content is encoded and delivered using ATSC NRT technology and then stored at the local storage device attached to an NRT-capable LG TV set through a USB connection.

In the demonstration, a viewer could watch a live DTV transmission while at the same time video files were being downloaded for later viewing. The menu shown on the screen in the photo indicates content available for NRT downloading (first column), the status of the download (second column), etc. Much of the content being downloaded was in 3D, representing one possible way that over-the-air DTV can be used to support 3D video transmissions.



Sezmi – Sezmi is a new video service that seamlessly integrates live television, on-demand movies and television shows, and web videos in an easily self-installed system that automatically records, recommends and organizes the favorite shows of each individual member of the family. In their exhibit at the NAB Show, Sezmi was demonstrating this new service which is now available in the Los Angeles, CA viewing area. Their booth is shown in the photo at right, and in the inset is an example of the customizable user interface which can be set up for each person in a viewing household.

The Sezmi System can be purchased for $299 and includes an HD Media Recorder that automatically organizes live, recorded, on-demand and online content and can store up to 1,400 hours of programming. It also includes an advanced indoor television reception system for receiving local ATSC DTV broadcast channels and Sezmi's programming lineup of cable channels (which are included in the over-the-air DTV transmission or downloaded from the Internet). Finally the system includes a remote control featuring personal "mi" buttons for each member of the family to quickly discover and enjoy the programming they care about most. Sezmi expects to expand their service beyond the LA area later this year. For additional information, visit the Sezmi Web site at http://www.sezmi.com.