NAB TV TechCheck

The Weekly NAB Newsletter for Television Broadcast Engineers

June 16, 2008

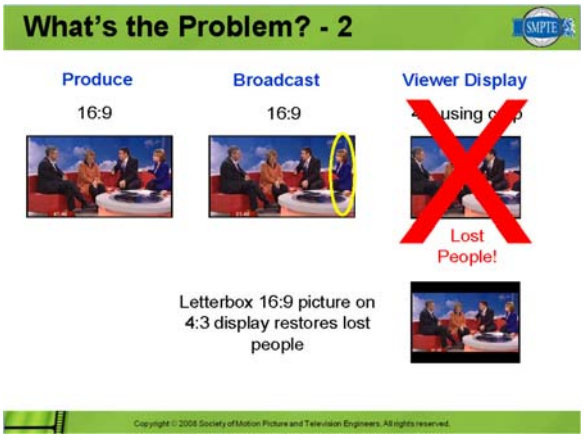
AFD EDUCATION AND THE "AFD READY" INITIATIVE

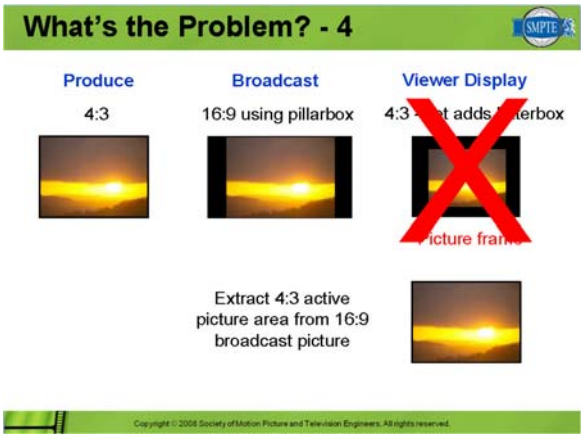
TV TechCheck in the November 6, 2006 and June 4, 2007 editions reported on the standards for Active Format Description for managing the use of 4:3 and 16:9 aspect ratios and also discussed some of the first implementations. Interest in this topic has increased greatly as the end of analog broadcasting approaches and last week on June 12 the SMPTE Professional Development Academy presented a "PDA Now" Webinar as a comprehensive educational tutorial on the topic. Guest speakers were Graham Jones, Director Communications Engineering with NAB and Larry Thaler, VP Distribution with NBC Universal, and the event was announced as:

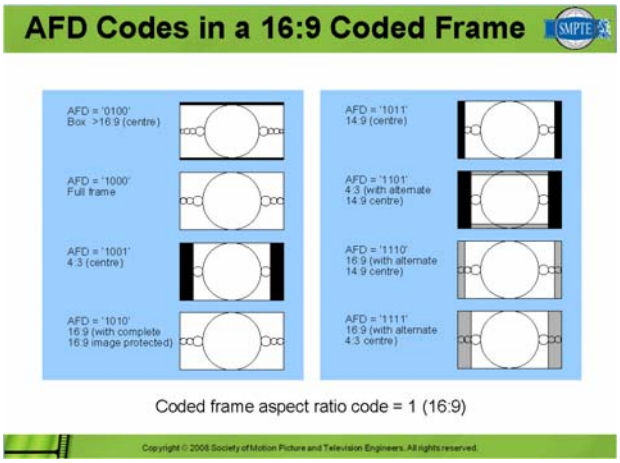
> **HDTV Transition: Managing Aspect Ratio from Camera to the Home**
>
> The introduction of HDTV and wide screen 16:9 aspect ratio images into the video world has brought a number of challenges for production, distribution, and displays. This applies particularly where 4:3 and 16:9 formats and images have to coexist in a broadcast facility or within a program. This SMPTE PDA Now session will cover Active Format Description (AFD) and how it may be used to manage 4:3 and 16:9 images in the broadcast studio environment and to optimize images for display on consumer televisions. It also covers some recommended techniques for downconversion of HD signals for distribution to NTSC receivers via cable and satellite. The SMPTE, ATSC and CEA standards relating to AFD and Bar Data will be explained, and experience gained in practical implementation in a broadcast facility will be shared.

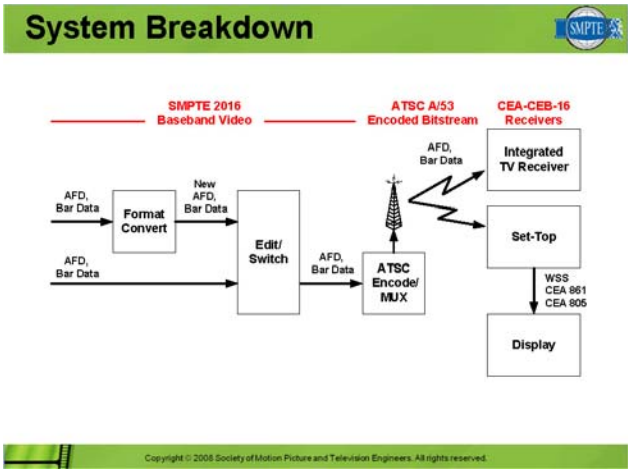
In the Webinar, Mr. Jones described the issues relating to the use of 4:3 and 16:9 aspect ratios for production, distribution and display. He discussed the problems that can arise and the solutions that are enabled by using Active Format Description (AFD) and bar data, described the main features of AFD and bar data as set out in the SMPTE 2016 standard. He explained the role that the ATSC A/53 standard and CEA-CEB16 recommended practice have for implementation and made clear that as well as optimizing images displayed on home DTV receivers, there are applications for managing aspect ratio and control of picture processing equipment in the network and local station facility and for controlling the extraction of a 4:3 signal from 16:9 HD and SD ATSC content at by MPD facilities for distribution over cable and satellite.

Mr. Jones also mentioned the work now going on in the ATSC TSG-4 group to develop a recommended practice for conversion of ATSC signals for distribution to NTSC viewers over cable and satellite. This includes recommendations for the use of AFD. The following pictures are taken from the Mr. Jones' PowerPoint presentation.

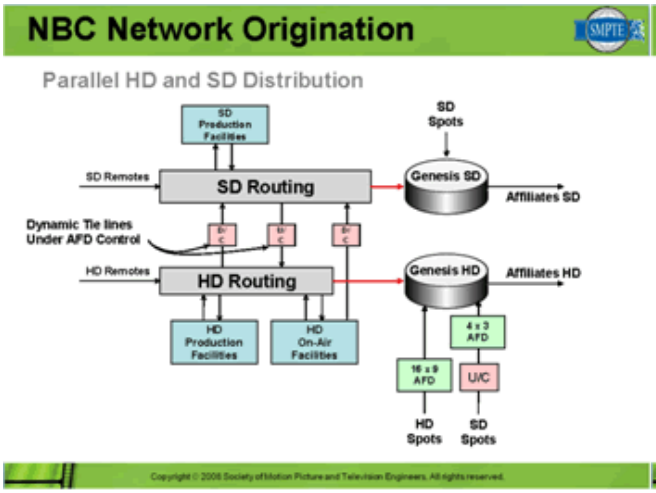


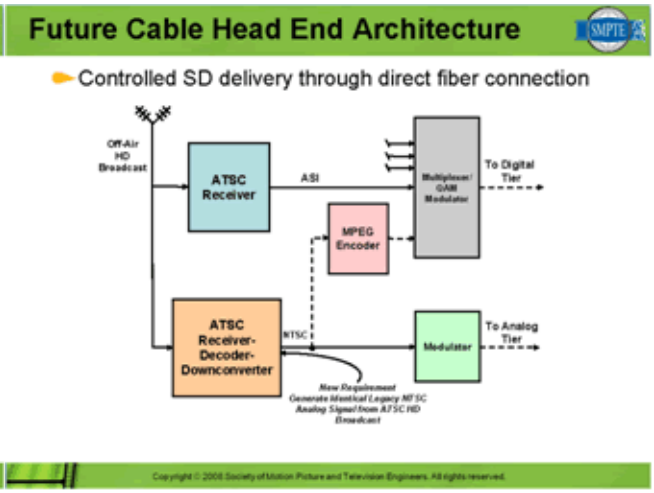






Larry Thaler talked about NBC Universal's experience with implementing and using AFD in their New York facility and their future plans. This developed the paper and presentation that he made at the NAB Broadcast Engineering Conference in April, as reported in *TV TechCheck*, March 17, 2008. He also gave an update on the "AFD Ready" initiative that was announced at the NAB Show. The following pictures are taken from the Mr. Thaler's PowerPoint presentation.





The SMPTE Web site describes "PDA Now" as live, interactive Webcasts covering high demand topics and recent technology developments, presented on the second Thursday of every month. Each one hour session covers a single technical topic and is designed to address specific technical aspects, technical challenges or answer questions associated with technologies of high interest to the engineering and technical communities within the motion imaging industry. SMPTE PDA Now sessions are available free of charge to SMPTE members. Non-members may access content for a nominal fee. Sessions are recorded and made available to SMPTE Members for later viewing. Further information on the SMPTE Professional Development academy is at: http://www.smpte.org/education.

The following information is based on an announcement made at the ATSC DTV HotSpot at the 2008 NAB Show in April, with more recent updates.

The "AFD Ready" Initiative

"AFD Ready" is an initiative to insure uniform and optimum program delivery of television broadcasts after the analog shutdown on February 17, 2009. The "AFD Ready" Initiative is designed to increase awareness of AFD and promote its use

throughout the broadcast industry. With specific goals:

1. Increase awareness of AFD technology and its uses.
2. Promote its use throughout the television industry.
3. Influence and develop technology solutions for AFD.
4. To insure uniform and optimum delivery of television broadcasts after the DTV Transition.

The “AFD Ready” Initiative is supported by a number of broadcasters including: Cox Broadcasting, Fox Television, Hearst Argyle Television, NBC-Universal, and Tribune Broadcasting Company and others.

The following broadcast equipment manufacturers have come out in support of the initiative and showed their “AFD Ready” solutions at the 2008 NAB Show.

> Blonder Tongue, DTV Exchange, Evertz, EVS, Harmonic, Harris, K-Tech, Leader Instruments, Miranda, Motorola, Nvision, Omneon, Scopus, Seachange, Sencore, Snell & Wilcox, Tandberg Television, Tektronix, Telestream, Thompson/GVG, Tiernan

The following cable head-end equipment manufacturers have announced support for AFD. Release schedules of the AFD feature varies by manufacturer, but all will support firmware upgrades for units deployed in the field. Manufacturers should be contacted for specific details.

> Blonder Tongue, DTV Exchange, Harris, K-Tech, Miranda, Motorola, RL Drake, Scientific Atlanta, Scopus, Sencore, Tandberg Television, Wegener

Zenith Electronics has just announced that their new DTT 901 coupon-eligible DTV converter box, to be in stores this summer, will include support for AFD with automatic picture format display control.

For more information on the AFD Ready initiative, please contact Clarence Hau at NBC Universal, clarence.hau@nbcuni.com

NAB’S SATELLITE UPLINK OPERATORS TRAINING SEMINAR
September 29 – October 2, 2008

If you weren’t able to attend the June NAB Satellite Uplink Operators Training Seminar, you still have one more opportunity this year. The course will be offered September 29 – October 2 at NAB’s headquarters in Washington DC. This four-day course is designed to instruct students in the proper technical and operational practices that will ensure safe, successful and interference free satellite transmissions. For more information call Cheryl Coleridge at (202) 429-5346 or go to NAB Satellite Uplink Operators Seminar.