September 13, 2010

TV TechCheck

NAB NATIONAL ASSOCIATION OF BROADCASTERS

The Weekly NAB Newsletter for Television Broadcast Engineers

Broadcasters File Comments with the FCC on STELA DTV Signal Strength Prediction and Measurement Procedures

On September 3, NAB, together with the ABC Television Affiliates Association, the CBS Television Network Affiliates Association, the FBC (Fox) Television Affiliates Association, the NBC Television Affiliates and the Association for Maximum Service Television (collectively, the "Broadcaster Associations") filed reply comments with the FCC responding to several technical issues raised by DISH Network and DIRECTV, the Direct-to-Home (DTH) satellite carriers, regarding DTV signal strength and measurement procedures.

The Commission began an inquiry in July regarding implementation of The Satellite Television Extension and Localism Act of 2010 (STELA), which reauthorizes the Satellite Home Viewer Extension and Reauthorization Act of 2004 (SHVERA). It sought comment on a number of issues regarding a prediction model and on-site measurement procedure for determining the strength of a DTV signal at any specific location. This would be used to determine whether a household could be considered "unserved" by a local network affiliated DTV station and thus would be eligible to receive a distant DTV network affiliated signal retransmitted by DTH satellite carriers. Among other things, the FCC sought comment on whether it should consider basing the STELA DTV signal strength prediction model on the use of an indoor receive antenna instead of an outdoor antenna as was required under SHVERA. (See *TV TechCheck* from August 8, 2010.)

On August 24, the Broadcaster Associations filled comments in this proceeding supporting the continued use of an outdoor receive antenna for determining eligibility under STELA because the DTV planning factors and service, as described in OET-69 are based on the use of an outdoor antenna. Further, because of the complexities of the indoor receiving environment, there is no way to create a "one size fits all" computer model that could be used to reliably and accurately predict the DTV signal strength inside a consumer's home. Broadcasters also stated that the result of switching to an indoor antenna based regime would be a drastic increase in the number of "unserved" households.

The DTH Satellite Carriers' comments filed in this proceeding included an engineering statement that, in addition to advocating the use of an indoor antenna, recommended several correction factors that should be applied to the DTV signal strength prediction to account for differences in antenna gains (indoor antennas have less gain than outdoor antennas), building penetration losses, differences in antenna height (1 meter vs. 10 meters), time variability, land clutter, multipath and other factors that they propose to use for indoor reception. The net result of including all these factors is that a DTV station would have to increase power by 64 dB in order for a household to be considered "served" by that station.

The Broadcasters Associations' reply comments included an engineering statement prepared by the firm of Meintel, Sgrignoli & Wallace, LLC which pointed out that an increase of 64 dB would require stations to increase their radiated power 2,511,886 times their existing ERPs to account for the carriers' proposed changes in the predictive model. In other words, a UHF digital television station that currently broadcasts with an ERP of 1,000 kW would need to increase its ERP to 2,511,886,432 kW (in excess of 2.5 billion kW or 2.5 trillion watts) under these assumptions.

The Broadcaster Associations' reply comments also presented the following points in response to issues raised by the DTH Satellite Carriers:

- Because of the enormous variability from one household to another in building materials and construction type, it would be impossible to develop an accurate predictive model for indoor reception. Further, a television could be located in a variety of locations around the home, which may have widely different reception characteristics.

- The adjustments that DIRECTV and DISH propose to make to the minimum signal strength required by the Act are unfounded. They ask the Commission to add 3 additional dB based on multipath problems, but the Act does not give the Commission that authority. In addition, modern receivers do an excellent job at combating multipath, making any such adjustment unnecessary. The same is true of interference, and the Commission is correct in rejecting the DIRECTV/DISH suggestion to add a new layer of complexity on ILLR by adding interference.

- The carriers' proposals about taking into account land use and land cover are too vague to deserve any consideration by the Commission. Other than a passing mention of Google Earth and of unidentified "precise mapping tools," they give the Commission nothing to work with. In any event, the Commission's existing approach to land use and land cover has worked well and is not in need of repair.

- The carriers' proposal to raise time variability for TV broadcast stations from 90% to 99% has been carefully considered and rejected by the Commission in earlier proceedings. The most important reason to reject the carriers' proposal is that 90% time variability applies only at the edges of a station's service area, and even homeowners there can improve their reception by use of a directional rooftop antenna and a preamplifier.

- DIRECTV and DISH suggest that different standards should apply to households with and without rooftop antennas. This overtly discriminatory proposal would be a recipe for conflict and resentment.

- The carriers' request for a "picture test," in addition to a signal strength test, is inconsistent with the plain language of the statute and with settled case law. It would also lead to innumerable problems in determining whether a consumer's lack of picture was caused by signal issues or by, for example, the presence of interfering electronic devices close to the television.

- The proposed indoor testing protocol offered by the carriers' expert, Mr. Kurby, is riddled with problems. He does not address the problem of multiple televisions in a home; he does not require testing antennas to be calibrated; he proposes a type of antenna that must be extended to nearly nine feet for some stations; he proposes to put the antennas close to or on the floor; and he recommends that antennas be improperly oriented in two different ways.

- The carriers' proposed testing procedures would be much more burdensome on consumers than the procedures currently followed. They are thus directly contrary to STELA's command that the Commission "seek ways to minimize consumer burdens associated with on-location testing."

To see the Broadcaster Associations' and other comments filed in this proceeding go to the FCC's Electronic Comment Filing System (ECFS) at http://www.fcc.gov/cgb/ecfs. Select "search for filings" at the top of the page, then search for docket No. 10-152.

NAB Broadcast Engineering Conference Committee Meets to Begin 2011 Conference Planning

The 2011 NAB Broadcast Engineering Conference Committee met at NAB headquarters last week to begin planning for the 2011 conference. Pictured from left to right are: IEEE BTS representative, Lanny Nass, CBS Corporation; Jim Kutzner, PBS; SBE representative, Fred Baumgartner, Harris Corporation; Jim Stagnitto, WNYC/WQXR Radio; SBE representative, John Poray, SBE; Brett Jenkins, ION Media Networks; Steve Fluker, Cox Media Group, Orlando; Jeff Andrew, WTTG-TV; Martin Stabbert, Citadel Communications and BEC Committee chairperson, Dom Bordonaro, Cox Radio. (Committee members missing: Greg DePriest, NBC Universal, Ardell Hill, Media General, Glynn Walden, CBS Radio.)

Sign up for NAB's 2010 Satellite Uplink Operators Training Seminar

October 4-7, 2010
Washington, DC

Sidney Skjei of **Skjei Telecom** conducts the seminar for NAB. Mr. Skjei has more than 30 years of experience in engineering and is highly knowledgeable in all major satellite communications market areas.

In just four days, NAB will teach you the skills necessary for the proper operation of the satellite uplinks. Now certified by the Satellite Users Interference Reduction Group (SUIRG), this course offers expert training for you and your staff. Interference is an industry-wide problem. One solution is well-trained operators. The seminar includes: in-depth information about the theory of satellite communications, a satellite newsgathering truck demonstration and a half-day field trip to SES Americom Operations Center. Space is limited so register now. There is additional information on NAB's website or contact Cheryl Coleridge at 202 429 5346.

ATSC Digital Television Transmission System Seminar VSB Special Update Seminar

SCETV Telecommunications Center, Columbia, S.C.
Thursday, September 23, 2010
8:30 a.m. to 5:30 p.m.

An updated one-day seminar will be presented on the ATSC's digital television vestigial sideband (VSB) transmission system. The seminar will cover the fundamentals of the new mobile DTV transmission standard and its relationship to the legacy 8-VSB system. It will also cover practical broadcaster recommendations for improved DTV service and viewer educations as learned from last year's post June 12 field tests. The seminar is conducted by Gary Sgrignoli, DTV transmission engineer with Meintel, Sgrignoli & Wallace. This seminar is for broadcasters, broadcast consultants, equipment manufacturers, translator/LPTV operators and cable operators. For more information at SCETV contact Hap Griffin at 803 737 3486 or Tara Thomas at 803 737 3500. You may also contact the instructor Gary Sgrignoli at 847 259-3352.

The Advanced Television Systems Committee (ATSC) Announces Upcoming Events

ATSC Fall 2010 Mobile DTV Seminar
Thursday October 7, 2010 - 9:00 a.m. to 4:30 p.m.
Washington, D.C.

More information, including registration and a newly updated preliminary agenda, are available online.

ATSC Symposium on Next Generation Broadcast Television
Tuesday October 19, 2010 - 9:00 a.m. to 5:00 p.m.
The Westin Alexandria Hotel – Alexandria, Va.
More information, including registration and a newly updated preliminary agenda, are available online.

Please note that hotel rooms are available for Monday Oct. 18th at a discount price on a first-come, first-served basis. Please contact the Westin Hotel at **703-253-8600** as soon as possible for reservations – only a few rooms remain at the group rate! The last day for reservations is **September 18, 2010.**

Plan to Attend
The IEEE Broadcast Technology Society
60th Annual IEEE Broadcast Symposium

October 20–22, 2010
The Westin Alexandria ● Alexandria, Va.

Keynote speakers for this year's symposium include James Martin, Director, ISR Programs for the U.S. Department of Defense and James O'Neal, Technology Editor, TV Technology, USA. Additional details on the technical program and how to register are available on the IEEE Broadcast Technology Symposium website. The advance registration deadline is October 1!

Submit Your Proposal for Now
2011 NAB Broadcast Engineering Conference

Las Vegas Convention Center, Las Vegas, Nevada
Conferences April 9–14, 2011/Exhibits April 11–14, 2011
Deadline for submissions is October 22, 2010.

The 2011 NAB Show will host the 65th NAB Broadcast Engineering Conference. This world-class conference addresses the most recent developments in broadcast technology and focuses on the opportunities and challenges that face broadcast engineering professionals. Each year hundreds of broadcast professionals from around the world attend the conference. They include practicing broadcast engineers and technicians, engineering consultants, contract engineers, broadcast equipment manufacturers, distributors, R&D engineers plus anyone specifically interested in the latest broadcast technologies.

In order to be considered, proposals must explain what attendees can expect to learn from the paper, must not be a sales pitch and should be no more than 200 words in length.

Papers accepted for presentation at the 2011 NAB Broadcast Engineering Conference will be eligible for the NAB Best Paper Award. Established in 2010, the Best Paper Award honors the author(s) of a paper of exceptional merit published in the *NAB Broadcast Engineering Conference Proceedings*. The yearly proceedings, published as both a book and a CD-ROM is a compendium of these technical papers, and an important archive of the leading edge of broadcast engineering issues.

Technical paper proposals submitted for the 65th annual Broadcast Engineering Conference will be accepted until the October 22 deadline. If you have any questions, contact John Marino, VP NAB Science and Technology at (202) 429-5346.