National Association of NAB BROADCASTERS
TV TechCheck
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FCC BEGINS RULEMAKING ON DISTRIBUTED TRANSMISSION TECHNOLOGY

On November 3, 2005, the FCC adopted a *Clarification Order* and *Notice of Proposed Rulemaking* (MB Docket No. 05-312) that clarifies the Commission's existing guidelines for stations' interim use of Distributed Transmission Systems (DTS) and initiates a rulemaking to establish rules for the future use of DTS by digital television stations.

DTS allows a DTV station to employ multiple synchronized transmitters spread around a station's service area, enabling broadcasters to fill gaps in service coverage in order to, for example, provide coverage to areas previously blocked by terrain. In the *Second DTV Periodic Review Report and Order* (August 2004), the FCC approved the use of DTS and set guidelines for DTV stations' interim use of the technology. The FCC also said that it would undertake a rulemaking proceeding in the future to adopt rules for DTS operations.

The *Clarification Order* reiterates that DTS transmitters operating on an interim basis must be located within the DTV station's predicted noise-limited contour (PNLC), which is based on the station's existing authorization. They also clarified the requirement that the combined DTS noise-limited service be provided over all of a station's replication service area. To evaluate this, the FCC will examine whether every location in a station's replication service area is within the PNLC of at least one proposed DTS transmitter. In addition, the threshold for unacceptable interference to other stations will be new interference exceeding 0.1 percent based on the strongest of the multiple DTS signals (not based on the combined effect of the multiple DTS transmitters). Finally, the clarification stated that a station's desire to explore DTS operation is not acceptable grounds for an extension of the replication and maximization interference protection deadline. Any station employing an interim arrangement of DTS transmitters on its build-out deadline will be expected to demonstrate that its DTS operation meets the appropriate build-out requirement.

The *Notice of Proposed Rulemaking* (NPRM) proposes rules to govern the use of DTS as an alternative to single transmitter systems for DTV stations and seeks comment generally on how DTS operation will serve the public interest and on how such operation will advance the DTV transition. The FCC also wants to know how DTS will work with all DTV receivers, including small or inexpensive digital televisions and the digital-to-analog converters many viewers will have for their analog-only televisions.

Here are some of the other proposals addressed in the NPRM on which the FCC is seeking comments:

- DTS transmitters would be afforded primary regulatory status (licensed under Part 73 of the Rules) for the multiple transmitters used in DTS within the areas that the DTS transmitters are authorized to serve.

- Licensees that opt to use DTS in lieu of the traditional single transmitter would be allowed to apply for facilities that only serve an area equivalent to the area it could serve using a single-transmitter.

- Require DTS coverage to be confined within a circle from a station's reference coordinates based on the DTV service field strengths specified in Section 73.622(e) of the FCC Rules and the maximum power and antenna height restrictions specified in Section 73.622(f). See the "Table of Distances" below (the distances represent circles within which all DTS station coverage contours must be contained.)

Channel	Zone (see 47 C.F.R. § 73.609)	F(50,90) field strength	ERP at HAAT	Distance
2-6	1	28 dBu	10 kW at 305 m.	108 km. (67 mi.)
2-6	2 and 3	28 dBu	10 kW at 610 m.	128 km. (80 mi.)
7-13	1	36 dBu	30 kW at 305 m.	101 km. (63 mi.)
7-13	2 and 3	36 dBu	30 kW at 610 m.	123 km. (77 mi.)
14-69	1, 2 and 3	41 dBu	1000 kW at 365 m.	103 km. (64 mi.)

- Maintain protections against "cherry-picking" (favor some populations within their service area over others) established in the interim guidelines. Licensees using DTS technology would have to provide, at a minimum, essentially the same level of service they would use with their single-transmitter facilities. The FCC proposes that they would deny any application to construct DTS facilities that would result in loss of service to the population currently served within the licensee's service contour.

- Apply the existing Part 73 DTV rules for effective radiated power, antenna height and emission mask.

- DTS transmitters will not be separately licensed, but will be part of a linked group that will be covered by one construction permit and license. However, at least one of a licensee's DTS transmitters must provide coverage of the station's community of license in accordance with Section 73.625 of the Rules.

- Permit Class A TV licensees to use DTS technologies to operate a single frequency network of a group of commonly owned digital Class A stations.

Comments on the NPRM will be due 60 days after publication in the Federal Register. The item is available on the FCC's web site at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-05-192A1.pdf

SMPTE Request for Information on Control of Delay for Audio-Video Synchronization

The Society of Motion Picture and Television Engineers Committee on Television Systems Technology Ad Hoc Group on Lip Sync Issues was formed earlier this year to review all aspects of the lip sync problem and make recommendations for solutions (see www.smpte.org/engineering_committees/lipsync.pdf). Related to this work SMPTE has now issued a further request for information (RFI) from manufacturers. This RFI #2 is specifically related to control signals and interfaces for equipment that vary the delay of audio and/or video signals, intended to facilitate audio video synchronization. The intention is to produce an SMPTE standard or recommended practice for such signals to ensure equipment interoperability. The RFI and associated questionnaire is available at:www.smpte.org/engineering_committees/lipsync2.pdf

SMPTE is particularly interested in hearing from manufacturers with practical solutions or proposals for measurement and correction of audio-video synchronization errors, and those willing to participate in development of related standards. Responses should be sent to the ad hoc group chair, Graham Jones of NAB at: gjones@nab.org, Telephone 202-429 5345, or by Mail: NAB, 1771 N Street, NW, Washington, DC 20036.

NAB2006 HOUSING NOW OPEN

To accommodate the widest possible range of tastes and budgets, NAB is working with 28 hotels in Las Vegas to provide rooms to attendees for its annual convention, NAB2006, April 22-27. Registration for housing is now open. Reserve by calling 888-622-8830 or 703-205-9114 or online at www.nabshow.com. For additional inquiries, e-mail Expovision, the official housing office for NAB. Forms in multiple languages are available. Reserve early for best availability and rates.

REGISTER FOR 2006 NAB SATELLITE UPLINK OPERATORS SEMINARS

You have two opportunities to attend NAB's Satellite Uplink Operators Training Seminar in 2006. May 15-18, 2006 or October 2-5, 2006. For additional details go to http://www.nab.org/Scitech/satsem2006.asp or call NAB Science & Technology at 202-429-5346.

NEW VSB MEASUREMENT SEMINAR WTTW, CHICAGO, IL

Thursday, November 17, 2005

A one-day seminar that focuses on the types of VSB measurements that are desired in the laboratory, at transmitter sites and at remote field sites will be presented by Gary Sgrignoli of Meintel, Sgrignoli & Wallace from 8:30 am-5:30 pm on Thursday, November 17 in Chicago, IL. For additional information on this seminar, contact Gary Sgrignoli, (847) 259-3352, gary.sgrignoli@ieee.org or check out the Meintel, Sgrignoli and Wallace Web site at www.mswdtv.com.