



## **I. Introduction**

NAB has been an early champion of DTS technology, joining with numerous broadcast entities to recommend Commission consideration and authorization of DTS for use in digital television operations.<sup>3</sup> Distributed transmission is a technique that uses multiple low-power transmitters operating on the same channel to deliver a single digital television signal to consumers. As a result of DTS, more uniform and higher level signals can be distributed over a wider area without causing more interference to neighboring operations, gaps in coverage caused by terrain blockage can be filled in, and a variety of natural and man-made phenomena that inhibit reception of DTV signals in numerous situations can be overcome. Distributed transmission also can improve set-top reception of DTV signals and can be an enabling technology for achieving reliable DTV reception in pedestrian and mobile applications. DTS also uses spectrum efficiently due to the on-channel re-use characteristic of DTS and the reduced interference caused outside service areas.

The DTV transition is now moving forward rapidly. Stations have built their initial DTV facilities, many markets and stations have completed their full, currently authorized DTV build-out and the last replication/maximization use-it-or-lose-it deadline is occurring this July. The final DTV channel selection process is moving ahead, with a new Table of Allotments anticipated later this year. Thereafter, many stations will be moving to their final DTV channels, with many needing to construct new or retro-fitted facilities. If DTS is promptly authorized, this innovative technique can be deployed within current service areas during the build-out of DTV facilities on permanent, re-packed channels.

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<sup>3</sup> Letter from National Association of Broadcasters *et al.* to Ms. Marlene H. Dortch, Secretary, FCC, MM Docket No. 00-39, June 6, 2002; Letter from National Association of Broadcasters *et al.* to Ms Marlene H. Dortch, Secretary, FCC, MM Docket No. 03-15, June 4, 2004.

Distributed transmission is one of the first, technical innovations to enhance initially-deployed DTV service. More such innovations will be introduced over time, promising greater and better DTV broadcast service for the public. Some innovations, like distributed transmission, can position broadcasters competitively with the distribution platforms of other providers of digital television, including delivering digital television services to handheld and/or mobile receivers. Such increased competition will undoubtedly benefit the public at large.

## **II. Distributed Transmission Under the Commission’s Proposed Rules Can Provide a Panoply of Public Interest Benefits.**

NAB supports the Commission’s proposals to give broadcasters flexibility to use DTS to provide primary DTV service to authorized service areas, including affording primary regulatory status to multiple DTS transmitters.<sup>4</sup> NAB also supports applying the existing DTV rules for effective radiated power, antenna height and emission mask and requiring at least the same level of service as would be provided with single-transmitter facilities to the community of license to protect against “cherry-picking.”<sup>5</sup> The proposed rules will allow the flexibility to provide primary DTS benefits such as tailoring and expanding service that isn’t available with a single transmitter and delivering uniform, reliable service throughout areas served. DTS enables broadcasters to serve to areas currently blocked by terrain or stymied by natural or man-made phenomena that inhibit reception of DTV service. DTS affords strong, reliable service throughout the areas served and inside homes, thus enabling indoor reception of DTV signals in more locations, allowing stations to cover the center of service areas and outlying rural areas

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<sup>4</sup> NPRM at ¶11. The same Part 73 rules applicable to analog or DTV should also be applicable to DTS, including its proposed licensing approach where DTS transmitters will be part of a linked group that will be covered by one construction permit and license. *See id.* at ¶¶13, 28.

<sup>5</sup> NPRM at ¶¶25, 27, 28.

with strong signals. DTS will help increase the reliability of over-the-air broadcast service, as well as extend reliable service to areas previously blocked, in areas to receive “maximized” service, and, potentially, to certain areas outside of authorized service areas but within stations’ Designated Market Areas (DMAs).

### **III. The Commission Should Permit DTS Service Within the DMA So Long As Other Stations Are Not Subject to Additional Interference.**

Consistent with “no additional interference” rules and avoidance of “market creep” into adjacent DMAs, DTS should also be permitted to extend the benefits of reliable, tailored signals to broader audiences within a station’s television market (DMA) once the DTV transition and DTV channel re-packing is complete. The Commission should permit this service for the benefit of consumers and to promote wider competition by broadcasters with cable and satellite service within a DMA.

Specifically, the Commission should reverse its tentative conclusion to permit DTS transmitters to serve only an area that would be served by a hypothetically maximized service area for a given region, and not other areas within a station’s DMA.<sup>6</sup> Authorization of DTS use throughout the DMA, however, should be limited by *de minimus* interference rules, so that other full service stations will not be impacted by expansion of service outside of currently-authorized service areas. In addition, DTS signals should be prohibited from spilling over into adjacent DMAs. This expansion will better serve consumers, including cable consumers with second, third and fourth sets not connected to cable, with expanded broadcast service and the benefits of more competition to cable. Nothing in such a change would reduce broadcasters’ commitment to localism. Rather, DTS will allow broadcasters to better serve the local audience throughout the

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<sup>6</sup> NPRM at ¶20.

DMA by ensuring greater service to all consumers. In this regard, the Commission can and should maintain its requirement for substantial signal strength to the community of license.

However, NAB believes that, while DTS should be authorized promptly for deployment within existing service areas, use of DTS outside of existing service areas should await finalization of the new Table of Allotments and the end of the DTV transition. Once the channel re-packing has been completed and associated issues are settled, then further use of DTS may proceed.

#### **IV. DTS Can Facilitate a Smooth End of the DTV Transition for Analog-only Television Viewers.**

The Commission seeks comment on how DTS will work with all DTV receivers, including small or inexpensive digital televisions and the digital-to-analog converters many viewers will use with their analog-only televisions.<sup>7</sup> NAB here comments in this regard on the important topic of digital-to-analog converters. Because of the typical circumstances in which digital-to-analog converters will be used, both adequate signal strength and RF tuning performance of converters will be critical.

As the 2009 DTV conversion deadline arrives, there will likely continue to be a significant segment of the population that does not buy a new digital television set or subscribe to cable or satellite. Even in households that can receive digital television signals on a set in a primary viewing location, second and third sets in the home are often used for off-air reception. The Government Accounting Office (GAO) has estimated the number of over-the-air-only analog TV sets in the U.S. at 73 million.<sup>8</sup> Consistent with this number, a survey by the

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<sup>7</sup> NPRM at ¶10.

<sup>8</sup> “Digital Broadcast Television Transition: Estimated Cost of Supporting Set-Top Boxes to Help Advance the DTV Transition,” GAO 05-258T, February 17, 2005.

Consumer Federation of America (CFA)<sup>9</sup> led to their estimate of 80 million over-the-air-only TV sets. GAO and CFA estimate the number of U.S. households that are over-the-air only at 20 million and 16 million respectively. *Id.*

The availability and wide scale implementation of inexpensive digital-to-analog conversion equipment for delivering over-the-air digital broadcast signals to legacy analog TV receivers will be critical in preserving television service to the American public when the DTV transition is completed. Only with the availability of such inexpensive add-on devices can digital television service be guaranteed to maintain the same ubiquity and convenience currently in place with the analog NTSC service.

In addition, DTV set-top receivers will need to have the very best performing tuner reception capability.<sup>10</sup> Many second and third sets in homes are used with indoor antennas and the locations of many such sets are such that a rooftop antenna connection may not be practical. As such, under the current single-transmitter system, the reception environment for second and third sets will often require operation in a very low signal environment and/or an environment with significant multipath. These consumers will still expect to see a picture and hear audio when the digital set-top receiver is the only way to get over-the-air signals for those sets.

Currently, the “performance anchor” for digital TV reception performance is the ATSC Recommended Practice on Receiver Performance (Doc. A/74) which provides guidelines on adapter equalizer performance, interference immunity and so forth. It is expected that A/74 will

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<sup>9</sup> “Estimating Consumer Costs of a Federally Mandated Digital TV Transition: Consumer Survey Results,” Consumer Federation of America, June 29, 2005.

<sup>10</sup> Last June, NAB and MSTV announced a joint program to develop a prototype high quality, low cost digital to analog converter box for terrestrial digital television reception. One of the goals of the program is to develop a prototype that will serve as a blueprint for future products from manufacturers to serve broadcast-only television sets. Testing and evaluation of prototypes developed by Thomson and Zenith in this program will take place in 2006.

be adopted widely as the minimum performance acceptable for commercial DTV receiving products, giving DTS designers the receiver assumptions they will need to craft a workable DTS configuration. This improved RF tuning performance, combined with DTS, will enable reception for many second and third sets with indoor antennas and digital-to-analog converters at some distance from the transmission site. By raising the average field strength level throughout the service area, particularly in fringe areas, more locations will be able to achieve acceptable reception results with indoor antennas. Thus, DTS will be an essential tool to reach this important population of legacy sets with digital-to-analog converters and indoor antennas, facilitating a smoother end of the transition for the public.

## **V. Conclusion**

Distributed transmission technology holds great promise to enable broadcasters to improve their service to the public in an efficient and cost-effective way. Because the Commission can modify its rules to enable broadcasters to pursue these benefits while ensuring that no additional interference will be created, NAB supports swift authorization of DTS service, consistent with caveats herein described.

Respectfully submitted,

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