

**Before the
FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of)
)
Digital Audio Broadcasting Systems)
And Their Impact On the Terrestrial Radio)
Broadcast Service)
)
)
)

MM Docket No. 99-325

RM-9395

**Reply Comments of
the National Association of Broadcasters**

I. INTRODUCTION

The National Association of Broadcasters¹ ("NAB") submits these Reply Comments in the above-captioned proceeding. NAB believes the Commission should issue a Report and Order establishing In-Band, On-Channel ("IBOC") Digital Audio Broadcasting ("DAB") as the appropriate model to introduce digital radio for existing terrestrial radio broadcasters, if such an IBOC DAB system is proven viable. Within that Order, the Commission should recognize that a single transmission standard must be adopted and that the National Radio Systems Committee ("NRSC") is the appropriate entity to provide technical input to the standard setting process. Additionally, the Commission should establish a formal reporting structure and schedule for the NRSC to file progress reports with the Commission. All existing AM and FM terrestrial radio stations must be given the opportunity to make the transition to digital, and NAB believes IBOC DAB technology will facilitate achieving that goal.

¹ NAB is a nonprofit, incorporated association of television and radio stations and networks, which serves and represents the American broadcasting industry.

In these Reply Comments, we emphasize three major points that are supported by the comments in this proceeding. These are (1) the existing AM and FM broadcast bands are the most appropriate spectrum in which to establish a terrestrial DAB service; (2) the Commission must mandate a single terrestrial DAB standard in the AM and FM bands; and (3) the NRSC possesses the knowledge and experience necessary to aid the Commission in the technical aspects of selecting a single standard.

II. THE BEST MODEL TO IMPLEMENT DIGITAL AUDIO BROADCASTING IS IBOC DAB TECHNOLOGY

A. IBOC DAB has Advantages Over Any Other DAB Model.

1. *An IBOC DAB transition will be easier on consumers, broadcast stations and the Commission.*

One of the main concerns the Commission must take into account is the effect of the digital radio transition on radio listeners. Using an IBOC DAB system will greatly reduce the impact on listeners, making the transition much smoother and quicker. This was aptly noted by Cox Radio (“Cox”) when it stated that by using radio broadcasting’s existing spectrum, “[i]t also will be easier for broadcasters to educate listeners about the new DAB service and how to receive it; educating consumers about a completely distinct area of the spectrum would be costly and inefficient.”²

The difficulties experienced in Europe – and other parts of the world – with their digital radio transition using the new band model, Eureka-147, proves that alternative spectrum models pose larger problems for consumers. Susquehanna Radio Corp., in its comments, refers to the failure of the European transition. It observes,

“[m]uch of Europe has embraced the Eureka 147 system and after nearly ten years of development, they have near zero market penetration. Transmission facilities have been operating for some time in many major European communities; yet, there are still no receivers. This government developed and government sponsored system of broadcasting is

² Comments of Cox Radio in MM Docket No. 99-25 (filed January 24, 2000) at 3.

certainly technically superior to present analog services but there is no market demand for this new service.”³

The Office of Advocacy, U.S. Small Business Administration has expressed concern that the FCC failed to consider the impact of IBOC DAB on small broadcasters. It asks that the Commission study this impact and issue another Notice of Proposed Rule Making “to share with the public what it learns as a result.”⁴ This is an unnecessary course of action and the Commission should disregard the request as it would hinder the further development of this proceeding, and ultimately delay implementation. Small broadcasters will face minimal economic impact compared to the great advantages that will be realized if a viable IBOC DAB system is established.

An IBOC DAB transition is better for broadcasters because they will utilize much of the same equipment for both analog and digital transmission. Along these lines, Gannett notes that, “because the IBOC approach does not require migration to new spectrum or channels, the industry saves the resources that would otherwise be expended in building a new broadcasting infrastructure that would accompany any spectrum move.”⁵ Thus, because IBOC DAB technology does not require stations to build entirely new digital transmission facilities from the ground up, the costs to broadcasters are significantly lowered.

Lucent Digital Radio, Inc. (“LDR”), one of the IBOC DAB proponents, outlined the estimated costs for broadcasters in its comments. LDR’s system design targets a cost of \$75,000 to

³ Susquehanna Radio Corp. Comments in MM Docket No. 99-325 (filed January 24, 2000) at 4.

⁴ Comments of Office of Advocacy, U.S. Small Business Administration in MM Docket No. 99-325 (filed January 24, 2000).

⁵ Comments of Gannett in MM Docket No. 99-325 (filed January 24, 2000) at 7.

\$150,000 for FM station upgrades.⁶ LDR states that this is a one-time station upgrade, which includes FM all-digital transmission capabilities.⁷ For AM stations, LDR believes the comparable upgrade costs will vary between \$20,000 and \$30,000 total for stations with a stereo transmitter of compatible linearity.⁸ These one time only upgrade costs seem reasonable in light of the promised upgrade in audio quality and other digital data capabilities.

Further, USA Digital Radio, Inc. (“USADR”), another IBOC DAB proponent, has established its Early Adopter Station Enhancement (“EASE”) program for radio stations. The EASE program is provided at no cost and targets small and mid-sized stations.⁹ The program provides information to stations and provides station assessments. USADR states that more than 500 stations participate in the program with more than 35% of the stations coming from non-Arbitron-rated markets.¹⁰

Clearly, the IBOC DAB proponents have taken the needs of the broadcast stations into account in developing their systems in order to ensure that broadcasters will be able to make the transition a reality without undue costs. Additionally, the IBOC DAB systems provide for hybrid operation, where both an analog and digital signal is transmitted. Thus, stations have the ability to convert to all-digital operations at their own pace. The request by the SBA’s Office of Advocacy is unnecessary and should be disregarded.

The Commission itself must also be considered in this process. Converting to digital radio using an IBOC DAB system will provide the most straightforward and expeditious regulatory path

⁶ Lucent Digital Radio, Inc. Comments in MM Docket No. 99-325 (filed January 24, 2000) at 6.

⁷ *Id.*

⁸ LDR Comments at 10.

⁹ USA Digital Radio, Inc. Comments in MM Docket No. 99-325 (filed January 24, 2000) at 3.

¹⁰ *Id.*

for the Commission. In this regard, Gannett notes that, “unlike the FCC’s digital television experience, the [IBOC DAB] approach will not require the development and implementation of a new Table of Allocations and the expenditure of resources needed to accomplish all of the tasks associated with the development of such a table.”¹¹ In designating IBOC DAB as the model, the Commission will not have to use its resources to conduct the detailed studies inherent in a new band approach – like DTV – to configure a way to make digital radio a reality.

Related to this issue is the Commission’s duty to efficiently allocate the spectrum. Infinity Broadcasting Corporation (“Infinity”) observes that,

“[a]s the demand for spectrum has increased appreciably in recent years due to the advent of and improvements to such innovative services as PCS, cellular, land mobile communications, paging, digital television and data transmissions, the Commission has been faced with the unenviable and difficult task of allocating new blocks of spectrum for particular new uses. In the current spectrum-starved environment, it is nearly impossible to accommodate new requests for additional spectrum. In this regard, IBOC DAB systems should be viewed highly favorably because they do not require an allocation of any additional spectrum in order to implement a viable, technically superior digital service.”¹²

Thus, under an IBOC DAB approach to digital radio, Commission resources are conserved, spectrum is used more efficiently and DAB becomes a reality sooner.

2. *All existing broadcast stations will be able to participate in a digital transition using an IBOC DAB model.*

The Commission must adopt a DAB model that does not leave any existing terrestrial broadcaster out of the digital revolution. IBOC DAB is the only practical way that all existing AM and FM radio broadcasters can make a transition to digital transmission. As the Association for Maximum Service Television (“MSTV”) notes,

“IBOC, which gives each existing radio broadcaster a sliver of adjacent spectrum in which to initiate its DAB service, would permit the ongoing implementation of DAB service while

¹¹ Gannett comments at 7.

¹² Comments of Infinity Broadcasting Corporation in MM Docket No. 99-325 (filed January 24, 2000) at 12.

at the same time allowing radio broadcasters to remain on the same channel. This ensures that no station would be shut out of the digital era, because IBOC could easily accommodate DAB within existing radio broadcast spectrum, thereby obviating the need for the Commission to allocate new spectrum for it.”¹³

IBOC DAB will, as MSTV describes, permit all radio broadcasters to convert to digital technology without the need for allocating alternative spectrum.

B. The Radio Industry Supports IBOC DAB As Opposed To Alternative Spectrum Models.

The Consumer Electronics Association (“CEA”) expresses its disappointment that, over the past decade, DAB spectrum options “in the L-band, S-band, and the 746-794 MHz bands that possibly could have been used to deploy terrestrial DAB, instead have been (or [are] about to be) allocated and/or auctioned for other uses.”¹⁴ CEA provides a description of its proposed new-band system, the Mobile Multimedia Broadcast Service (“MMBS”)¹⁵ and says that “the combined support of industry and government (including the Executive and Legislative Branches, as well as the FCC) are needed to designate, allocate, and license adequate and appropriately-placed spectrum if an MMBS-type of service is to become a reality.”¹⁶

Clearly, the groundswell of support that CEA acknowledges would be necessary to launch an MMBS-type new band DAB service does not exist. As the comments in this proceeding illustrate, broadcasters overwhelmingly support an in-band approach to DAB over a new-band approach. Even CEA’s own constituents are not convinced that a new-band approach is advisable.

¹³ Comments of MSTV in MM Docket No. 99-325 (filed January 24, 2000) at 7.

¹⁴ Comments of CEA in MM Docket No. 99-25 (filed January 24, 2000) at 12.

¹⁵ *Id.* at Appendix B.

¹⁶ *Id.* at 16.

Visteon Automotive Systems (“Visteon”), a manufacturer of radios for vehicles, filed comments which describe the disappointment that has followed other countries’ adoption of the Eureka-147 new-band system. Visteon points out that this system has yet to enjoy widespread market acceptance and says, “EUREKA/147 receivers cost several hundred dollars more than conventional receivers because of the need to accommodate an additional tuner for the L-Band or VHF Band III, the additional digital decoding circuitry, and a different antenna. ... In short, the system has offered little incentive to the consumer to make the additional investment.”¹⁷ A DAB system that uses the existing AM and FM broadcast bands is clearly the best solution for all concerned.¹⁸

The Terrestrial Integrated Services Digital Broadcasting (ISDB-T) system proposed by the Japanese Association of Radio Industries and Businesses Digital Broadcasting Experts Group (“ARIB”) is very similar to the MMBS system proposed by CEA, and the Eureka-147 system.¹⁹ It would require multiple broadcast stations to share the same channel,²⁰ and ARIB admits that it would not be compatible with existing analog service.²¹ This is totally unacceptable to U.S. broadcasters because it would dramatically alter the coverage areas of many stations during the conversion to digital. Furthermore, as noted above with respect to MMBS and Eureka 147, this sort of new-band system would require new spectrum, and more complicated and expensive equipment.

¹⁷ Comments of Visteon Automotive Systems in MM Docket No. 99-325 (filed January 24, 2000) at 9.

¹⁸ However, NAB recognizes that the NRSC is currently evaluating IBOC DAB proponent systems to determine whether any IBOC DAB system offers improved service over existing analog service. An alternative spectrum approach may be necessary for terrestrial DAB if – and only if – IBOC DAB does not provide the expected improved service.

¹⁹ Comments of the Japanese Association of Radio Industries and Businesses Digital Broadcasting Experts Group in MM Docket No. 99-325 (filed January 14, 2000) at 2.

²⁰ *Id.* at 1.

²¹ *Id.* at 2.

Consumers would therefore be less inclined to use it, and DAB could be doomed to failure in the United States.

III. A SINGLE DAB TECHNICAL STANDARD MUST BE MANDATED BY THE COMMISSION

Most commenters recognized the necessity to adopt a single standard in order to facilitate a smooth transition to digital radio.²² However, the industry and other players, acting on their own, may not be able to come to a voluntary consensus on a single solution. In this regard, Gannett notes that, “[t]he Commission only needs to look at the history of the industry’s less than successful implementation of AM Stereo as evidence of the divergent forces operating within the radio broadcast industry.”²³

Notably, all of the IBOC DAB system developers who currently participate on the NRSC DAB Subcommittee agree that a single standard is necessary. Digital Radio Express (“DRE”) says it “supports the adoption of a single transmission (modulation) standard ... the lack of a single standard could compromise certain performance characteristics of the receiver ...”²⁴ LDR says, “Unlike the situation with wireless subscription services, all broadcasters, transmission equipment manufacturers, and consumer device manufacturers *must* cooperate if there is to continue to be a universal broadcast service.”²⁵ And USADR says, “it is unlikely a consensus on a standard will appear without Commission action. There are too many necessary participants to reach an acceptable agreement on a *de facto* standard.”²⁶

²² See e.g., Comments of Greater Media in MM Docket No. 99-325 at 13 –14; Infinity comments at 7; Susquehanna comments at 5; CEA comments at 16.

²³ Gannett comments at 6.

²⁴ Comments of Digital Radio Express in MM Docket No. 99-325 at 3. DRE has recently formed an alliance with USADR.

²⁵ LDR comments at 38.

²⁶ USADR comments at 25.

It is clear from the comments in this proceeding that broadcasters, equipment manufacturers, and all IBOC DAB system developers agree – the Commission must mandate a single DAB technical standard. Failure to do so could doom DAB from the start.

IV. THE NRSC IS BEST EQUIPPED TO RECOMMEND A SINGLE DAB STANDARD

In its comments, USADR proposed a timeline for action by the FCC in this proceeding that includes submission of test systems and test results to the Commission in September 2000, with the FCC adopting an IBOC DAB transmission standard by December 31, 2000.²⁷ While the NAB supports moving forward as quickly as possible, broadcasters, equipment manufacturers and other facets of the radio industry must be an integral part of this proceeding. This is the constituency of the NRSC. The NRSC has the expertise and structure to facilitate further testing and evaluation of proponent systems as well as the ability to conduct standard setting proceedings.

To foster the development of the most beneficial DAB system possible, and with as little delay as possible, the Commission should look to the NRSC as the appropriate forum for the technical evaluation of proponent IBOC DAB systems leading to development of a United States DAB standard. The Commission should establish a formal reporting structure through which the NRSC may keep the Commission informed of its progress.

²⁷ *Id.* at 26.

V. CONCLUSION

Existing radio broadcasters are ready to begin the transition to digital – the Commission must move forward as quickly as possible to make that a reality. The Commission should adopt a Report and Order designating IBOC DAB as the model for existing terrestrial radio broadcasters to make the transition to digital. It should also conclude that a single IBOC DAB standard must be established. The Commission should also recognize the NRSC as the appropriate entity to provide technical evaluations of proponent systems and to make recommendations to the Commission.

Respectfully Submitted,

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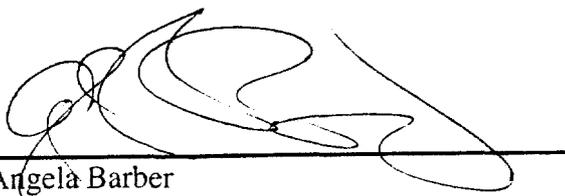
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