Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Digital Audio Broadcasting Systems	)	MM Docket No. 99-325
And Their Impact On the Terrestrial Radio	)	
Broadcast Service	)	

To: The Commission

REPLY COMMENTS OF NATIONAL PUBLIC RADIO, INC.

National Public Radio, Inc. ("NPR") hereby replies to the comments submitted in response to the Commission's Public Notice regarding the National Radio Systems Committee's "In-Band/On-Channel Digital Radio Broadcasting Standard NRSC-5."[1]

In its initial Comments regarding the Public Notice, NPR expressed its support for the adoption of the proposed NRSC-5 voluntary technical standard as a means of advancing DAB technology and encouraging and hastening its widespread deployment. NPR also applauded the inclusion of Supplemental Program Services (also known as multicasting, Tomorrow Radio, and Supplemental Audio Channels) in the standard.

The comments filed in response to the Public Notice weigh strongly in favor of the prompt adoption of the NRSC-5 technical standard. NPR agrees with the Comments of The Walt Disney Company and ABC, Inc. ("Disney/ABC") that "digital radio is

[1] Public Notice, Comment Sought on National Radio Systems Committee's DAB Subcommittee's In-Band/On-Channel Digital Radio Broadcasting Standard NRSC-5," MM Docket No. 99-325, rel. June 16, 2005 [hereinafter Public Notice].

critical to the continued vitality of terrestrial radio broadcasting in the United States."[2] For this reason, although we are keenly aware of the uncertainties raised by many commenters about potential interference issues, especially for AM stations in an IBOC environment, we are convinced that the substantial public service and technical benefits of HD Radio technology outweigh the potential risks. Although there is no free lunch, the addition of 1/100th power IBOC energy to the FM band has been well studied by engineering experts within the NRSC. The fact that hundreds of stations are broadcasting digitally today with few reports of unexpected interference gives us confidence in the efficacy of the IBOC transition before us.

We also concur with the Comments of iBiquity Digital Corporation ("iBiquity") and the Joint Comments of Entercom Communications Corp., Greater Media, Inc. and Infinity Broadcasting Corporation, which encourage the Commission to act expeditiously to authorize AM nighttime transmissions, multicasting and datatcasting in order to bring the full range of benefits of digital radio broadcasting to the public.[3] We similarly agree with the Consumers Electronics Association's ("CEA's") description of the benefits of multicasting. In its Comments, CEA states, "The ability to transmit multiple audio streams over a single channel will enable broadcasters to greatly enhance their service to the public. Further, these services will help to fuel the demand for IBOC digital radio receivers, allowing receiver manufacturers to produce higher volumes of product at lower

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[2] Comments of Disney/ABC, filed July 18, 2005, at 2.

[3] Comments of iBiquity, filed July 18, 2005, at 5-7; Joint Comments of Entercom Communications Corp., Greater Media, Inc. and Infinity Broadcasting Corp., filed July 18, 2005, at 3.

unit costs more quickly. All in all, multistreaming capability is good for the public, broadcasters, and receiver manufacturers."[4]

However, we disagree with the Comments of Jonathan E. Hardis ("Hardis") urging the FCC to "rescind all interim and temporary authorizations for IBOC broadcasting during the pendency of this proceeding."[5] Such an outcome would deal a serious blow to the considerable effort and investment by broadcasters, manufacturers and the listening public in HD Radio to date.

Missing among Hardis' several theories of why the HDC codec has not been incorporated into the NRSC-5 standard is an obvious one: iBiquity's lack of ownership of the underlying code for HDC. As Hardis notes, the HDC codec was developed in close collaboration with Coding Technologies, and incorporates SBR technology, a Coding Technologies invention.[6] iBiquity has said that it has licensed core codec components from Coding Technologies, but it has fully affirmed its intention to offer the incorporated code by license to broadcasters utilizing IBOC equipment, as well as other services, under reasonable and non-discriminatory terms.

Hardis himself admits, "Indeed, almost all codecs in common commercial use are proprietary—that is covered by patents that must be licensed."[7] Moreover, Hardis, in an accompanying footnote, acknowledges that one prominent non-proprietary codec does

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[4] Comments of CEA, filed July 18, 2005, at 5.

[5] Comments of Hardis, filed July 14, 2005, at 39.

[6] Id. at 16

[7] Id. at 14.

not work at datarates low enough to be suitable for AM transmission at 36 kbps.[8] Such operation is a key requirement for DAB in the United States.

The FCC, having sought industry consensus toward standards development, should fully support NRSC-5, which incorporates, but does not disclose, a best-in-class digital audio codec that is clearly superior to the earlier iBiquity proprietary PAC codec. iBiquity abandoned its proprietary PAC codec for the widely-praised HDC codec at the insistence of NRSC members. In 2003, NPR joined other major broadcasters lobbying for the codec change due to our interest in bringing the best possible audio service to listeners of NPR member stations. Indeed, NPR hosted the listening sessions with members of the NRSC in April and August of 2003 that led to replacement with an improved codec. It defies logic to rescind all authorizations for IBOC broadcasting, thereby setting back the efforts of iBiquity, the NRSC, several hundred broadcasters, and thousands of American people now enjoying the benefits of HD Radio, due to the lack of disclosure of intellectual property not owned by iBiquity.

iBiquity has indicated its willingness to incorporate signaling support for other codecs in the Advanced Applications Services bandwidth. Such support may be required for good performance of an audio codec at efficient bitrates for uses such as Radio Reading Services for the Blind, traffic and weather channels and other specialty supplemental program services. iBiquity has already set aside signaling flagbits for competing surround transmission systems.

NPR believes that the public interest in continued operation of the existing installed base of tens of thousands of HD radio receivers requires the main program

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[8] Id. at 14 n.23.

simulcast channel to be standardized on the HDC codec. In fact, the philosophical quest for open source everything is commendable but impractical in furthering a universal digital radio service. Certainty in manufacturing and operation of HD radios requires a common audio codec for main channel simulcasts.

In reality, for the FCC to require multiple codec options for main channel operations would drive up receiver costs and permit various codec competitors to frustrate IBOC deployment by flooding and confusing the market with a variety of alternative codecs, each undoubtedly touted by the owner as superior in some particular way. This could effectively replicate the marketplace debacle of AM stereo by fragmenting manufacturing, broadcasting and public interests and eliminating all momentum for the transition to IBOC.

Ample opportunity for innovation in datacasting and audio program services exists by exploiting the HD Radio systems' open architecture payload for Advanced Applications Services. Moreover, by leaving the bitrate for this simulcast channel within licensee discretion, substantial innovation with a variety of specialized codecs may be achieved by any entrepreneur that seeks to further audio program and datacast service offerings within the Advanced Applications Services transport. Additional capacity through the Extended Hybrid mode can afford a plethora of important public services. NPR applauds the vision of organizations like the International Association of Audio Information Services ("IAAIS"), which proposes to use such innovative capacity to fulfill the growing and underserved needs of disabled Americans.[9] Indeed, such operation is

[9] Comments of IAAIS, filed July 18, 2005, at 2.

contemplated by the NRSC-5 mask for FM IBOC transmissions and will be the vehicle for new public services in the years ahead.

Conclusion

For all of these reasons, NPR urges the Commission promptly to issue a Report and Order (1) adopting the In-Band/On-Channel Digital Radio Broadcasting Standard NRSC-5 as the operative technical standard IBOC operations for AM and FM stations, (2) authorizing multicasting as a regular feature of IBOC transmissions, (3) authorizing use of datacast and other advanced application services in the extended hybrid spectrum compliant with the NRSC-5 FM IBOC mask, and (4) authorizing nighttime AM service to expeditiously bring the full benefits of digital radio to the American people.

Respectfully submitted,

NATIONAL PUBLIC RADIO, INC.

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