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**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554-0005**

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

To: The Commission

**REPLY TO OPPOSITION OF THE NATIONAL ASSOCIATION OF BROADCASTERS
TO THE PETITION FOR RECONSIDERATION OF JONATHAN E. HARDIS**

I. INTRODUCTION

1. My name is Jonathan E. Hardis, and I have filed a petition for reconsideration¹ (“*Petition*”) of the Second Report and Order² (“*SR&O*”) in the above captioned proceeding. The Commission has received oppositions to this petition, including one from one from the National Association of Broadcasters (“*NAB Opposition*”).³ Pursuant to [§ 1.429](#) of the Commission’s rules, I hereby take this opportunity to reply to it.

¹ [Petition for Reconsideration of Jonathan E. Hardis](#), July 9, 2007, MM Docket No. 99-325

² [In the Matter of Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcasting Service, Second Report and Order, First Order on Reconsideration, and Second Further Notice of Proposed Rulemaking](#), MM Docket 99-325, 22 FCC Rcd. 10344 (2007)

³ [Opposition of the National Association of Broadcasters to the Petition for Reconsideration of Jonathan E. Hardis](#), February 11, 2008, MM Docket No. 99-325

II. REPLY TO THE NAB OPPOSITION

A. NAB’s Comments on NRSC-5 and the Process by Which it was Adopted are Mostly Irrelevant to the Subject Petition

2. *NAB Opposition* contains extensive discussion about NRSC-5, its content and the process under which it was adopted. Indeed, so much space and effort is devoted to this discussion that it’s easy to forget that the *Petition* is not about NRSC-5’s content or the manner in which it was adopted. “I have no problem with the Commission deferring consideration of the NRSC-5 document.” (Petition, *Id.*, at 12.) The instant petition concerns an item of Federal regulation, 47 C.F.R. 73.404(a), and the problem that *it* was improvidently adopted.

B. My Filings at the Commission Have All Been Timely and Made at the First Available Opportunity

3. NAB challenges the *Petition* on grounds that I did not file timely comments in response to the *FNPRM*.⁴ Indeed I did. Two comment windows were opened for the *FNPRM*. The first, as NAB notes, was in the summer of 2004. The second was in the summer of 2005.⁵ My comment filing in 2005 (*See* Footnote 6) was timely and responsive to the substance of the notice (solicitation), and it contained facts that had been predecisional and nonpublic in 2004.

4. NAB would have me presume the outcome of votes taken by the NRSC in early 2005 months before they happened. And furthermore, I knew through ethics training that the Trade Secrets Act (18 U.S.C. 1905, on disclosure of confidential information generally) could be broadly interpreted. Since NRSC rules bar the press, “this can be interpreted as creating a duty of secrecy for those in attendance (e.g., ‘what’s said in the room stays in the room’).” (*See* Footnote

⁴ [Digital Audio Broadcasting Systems And Their Impact On The Terrestrial Radio Broadcast Service, Further Notice of Proposed Rulemaking and Notice of Inquiry](#), 19 FCC Rcd 7505 (2004), [hereinafter, “*FNPRM*”]

⁵ [Comment Sought on National Radio Systems Committee’s “In-Band/On-Channel Digital Radio Broadcasting Standard NRSC-5,”](#) Public Notice DA 05-1661, June 16, 2005

⁶ [Comments of Jonathan E. Hardis](#), July 14, 2005, [hereinafter, “Comments”]

7, at p. 5. This admonition was actually made by the Chair at some meetings.) Now, NAB asks why I did not put myself at risk for possibly committing a crime and going to jail.

5. “NAB notes [in Footnote 7 of their Opposition] that the NRSC process itself was a public and open process.” Unfortunately, this was not the case, as I have previously explained. (Reply comments, *Id.*, at p. 5, and *supra.*) Nevertheless, if openness is NAB’s goal, as a citizen I commend them for it. NAB can, at any time, use their influence to move the correspondence, working papers, and minutes from the private to the public side of the NRSC website, thus allowing everyone equal access to the whole record.

6. NAB answered my *Comments* with their own reply comments in the summer of 2005 and on that occasion raised no issue of untimeliness or nonresponsiveness to the notice.⁸ Their objection today is late and without merit.

C. Contemporaneous Statement Proves iBiquity has No Impediments to Technical Disclosure of the HD Codec

7. I am very, very grateful to NAB for making public in their opposition a key piece of information that I have been heretofore unable to discuss. In my *Petition*, at 6, I lay out the big picture of how my complaint may be resolved. There are two options—two “paths”—the “easy way” (iBiquity fully documenting the system as it is now fielded) or the “hard way” (ordering a variant of system that could undeniably be fully documented, through software upgrades in the field and product recalls). “Some commenters and press reports have suggested that the easy route is blocked and is not an option. I disagree...,” but I could not fully disclose the basis for my disagreement. *NAB Opposition* allows a big step forward.

⁷ [Reply Comments of Jonathan E. Hardis](#), August 17, 2005, [hereinafter, “Reply Comments”]

⁸ [Reply Comments of The National Association of Broadcasters, August 17, 2005.](#)

8. As NAB reports (NAB Opposition, *Id.*, at Footnote 7), at the first meeting of an NRSC working group following the unveiling of the HD Codec (HDC), there was discussion about incorporating its technical specification into the then-draft of NRSC-5. Mr. Shuldiner, a Vice President at iBiquity, reported that a decision had been made within the company at a higher level than his own to not provide the specification, and that he was obligated to abide by that decision. While some continued for many months to try to convince iBiquity that this decision was unwise, it is nonetheless the case that a contemporaneous record was made of why iBiquity was silent on HDC. They were not bound by contractual obligation, as has been reported to the Commission in comment⁹ and to the public in the press.¹⁰ It was simply their choice.

9. I don't mean to belabor the point about candor, but if this decision was so set in stone in September 2003, as NAB contends, then why has it taken 4 ½ years and a petition for reconsideration for the true facts to be made known to the Commission and put on public record?

D. Despite Unclear Description, the Final Rule is a Regulatory Demarcation Point that Opens it to Review

10. NAB writes, “Third, the Second R&O did not grant ‘permanent’ and final authorization of the use of iBiquity’s IBOC technology and systems, as Petitioner contends. ...[The FCC] retained the ‘interim’ authorization granted in the *First R&O*, and provided for same in its rules.” (NAB Opposition, *Id.*, at p. 6).

⁹ See, e.g., “iBiquity informed the NRSC that, due to nondisclosure agreements with partners that participated in the development of the HDC codec, it would not be possible to provide the NRSC with the specific details necessary for inclusion in the Standard.” in [Reply Comments of Charles T. Morgan, Milford K. Smith, and Andy Laird](#), August 17, 2005, at p. 2. I believe that this misstatement was an honest mistake, with the commenters merely making an unwarranted presumption. See also Petition, *Id.*, at 54.

¹⁰ See, e.g., “Ibiquity has said that due to contractual agreements, it could not release specifics.” in *Digital Radio Kicks Up Strong Words*, Radio World Online, August 17, 2005; available electronically at http://www.rwonline.com/reference-room/iboc/03_rw_nrsc_5c.shtml, as discussed in Reply comments, *Id.*, at VII (p. 17).

11. If I am confused as to whether or not the Commission granted “permanent” authorization, I am in excellent company. NAB itself publishes *The IBOC Handbook*,¹¹ a highly regarded¹² reference for the industry. Mr. David Layer, a signatory to *NAB Opposition*, was the book’s technical editor. “He volunteered to go through the manuscript with a fine-toothed comb, weeding out awkward wording, factual errors, [etc.]”¹³ And on this subject, *The IBOC Handbook* says, “On March 22, 2007, the FCC permanently authorized hybrid IBOC operations with its *Second Report and Order, First Order on Reconsideration*, and *Second Further Notice of Proposed Rulemaking* (FCC 07-33).”¹⁴ Elsewhere, competent counsel for National Public Radio, Inc., also describes the Final Rule as “permanent.”¹⁵

12. It is unclear what significance NAB attaches to the descriptors “permanent” and “interim,” as they seem to imply that my *Petition* is mooted by their varying usage. In its upcoming order on reconsideration, the Commission would do good service by explaining its use of these terms and the significance it attaches to them.¹⁶ However, this much is clear regardless of one’s preference of adjectives: a final rule was reached within the meaning of the Administrative Procedure Act (5 U.S.C. Subchapter II). The Final Rule has no provision for expiration or sunset (i.e., it is permanent), and its adoption opens a window for challenge and review. And contrary to

¹¹ D. P. Maxson, *The IBOC Handbook: Understanding HD Radio Technology*, NAB/Focal Press, 2007.

¹² See, e.g., ‘*The IBOC Handbook*’ *Cracked Open*, Radio World Online, November 21, 2007; available electronically at <http://www.radioworld.com/pages/s.0049/t.9815.html>.

¹³ *The IBOC Handbook, Id.*, at p. x. Available electronically at http://books.elsevier.com/bookscat/samples/9780240808444/Sample_Chapters/01~front_matter.pdf

¹⁴ *Id.*, at p. 10. Available electronically at http://books.elsevier.com/bookscat/samples/9780240808444/Sample_Chapters/02~chapter_1.pdf

¹⁵ [Opposition of National Public Radio, Inc. to Petitions for Reconsideration](#), February 11, 2008, MM Docket No. 99-325

¹⁶ Does “interim” perhaps now refer to the period of time before conversion to digital-only?

NAB’s contention that this Commission’s action “retained” prior authorization, it was highly celebrated as providing “the certainty of formal adoption” of IBOC radio.¹⁷

13. I am frankly at a loss to understand what NAB is fussing about, given that the *Petition* argues, “Neither permanent nor continued interim authorization is warranted until the secrecy issue is resolved.” (*Petition, Id.*, at 56.) If NAB believes that IBOC authorization is still in some type of a malleable state, then they have even less basis for their objections.

E. NAB is Engaged in the Art of Frog Boiling

14. NAB writes that IBOC operation is “purely voluntary,” “a voluntary enhancement of the existing radio service.” (*NAB Opposition, Id.*, at p. 6.) This may well be true from NAB’s vantage point as an association of broadcasters. My *Petition* is from a different vantage point, that of an individual consumer, a near-daily user at the receiving side of the broadcast radio service. To me, “voluntary” is not an apt description. “Even before the day arrives when analog receivers are rendered obsolete, the development of supplemental digital channels means that a substantial amount of broadcast programming cannot be received unless a receiver is utilized that comports to the established standard.” (*Petition, Id.*, at 42.)

15. NAB goes on to argue that since today’s IBOC operations are “only interim in nature” (*NAB Opposition, Id.*, at p. 6), and since all-digital broadcasting might be a long way off, the Commission shouldn’t concern itself with that end-point today. I agree that the nose of the IBOC camel is now only slightly in our tent. But when would it be a better time to ensure that the camel is healthy?¹⁸

¹⁷ See, e.g., *iBiquity Statement on FCC’s Decision Finalizing HD Radio™ Rules*, Press Release of March 22, 2007, Available electronically at:

http://www.ibiquity.com/press_room/news_releases/2007/1002

¹⁸ For the metaphor impaired, please see http://en.wikipedia.org/wiki/Boiling_frog and http://en.wikipedia.org/wiki/Camel's_nose.

F. NAB Proves that the Final Rule Lacks Regulatory Clarity

16. NAB writes in opposition (at p. 7):

“Finally, the Petition errs in asserting, as a prime basis of its request for reconsideration, that ‘HD Radio is nonconforming’ to the rule adopted in the *Second R&O*, § 73.404, which requires interim IBOC operation to conform to the technical specifications specified for hybrid DAB operation in the *First Report and Order. Petition* at 7 *et seq.* The facts are contrary to Petitioner’s claims that these specifications define an earlier audio codec (AAC) and thus operation with the HDC codec now in iBiquity’s systems is nonconforming. In point of fact, the technical specifications that the newly-adopted rule and Petitioner refer to, contained in Appendix B and C of the *First Report and Order*, describe only the transmission and modulation schemes of iBiquity’s IBOC systems, without any specification of an audio codec. For this reason alone, Petitioner’s arguments fail.”

17. NAB is simply wrong, and I say this knowing that signatories to *NAB Opposition* are among the best technical experts on the iBiquity system outside of iBiquity. If they can’t properly figure out the Commission’s regulatory scheme, who can?

18. As intimated in the *Petition*, the Commission has defined two different and irreconcilable “*de facto* standards” as the basis of IBOC authorization in the Final Rule. The *First Report and Order*¹⁹ has its Appendices B²⁰ and C²¹. And contrary to NAB’s assertion that they are “without any specification of an audio codec,” they do indeed specify a codec—that codec being PAC.

19. At the time of the *R&O*, PAC was the presumptive codec of choice, as explained in the *R&O* at 18. Its appendices reflected that. Appendix C, for the AM system, specifies PAC at Layer 4 of the protocol stack (at Page 6) and defines it among the Acronyms (at Page 2). Appendix B, for the FM system, specifies PAC at Layer 6 of a more complex protocol stack (at Page 6). When I wrote in *Petition* that these Appendices were “vague and out of date” (at

¹⁹ [Digital Audio Broadcasting Systems And Their Impact On The Terrestrial Radio Service, First Report and Order](#), 17 FCC Rcd 19990 (2002), [hereinafter, “*R&O*”]

²⁰ Electronically at: <http://www.fcc.gov/fcc-bin/audio/FCC-02-286A2.pdf>

²¹ Electronically at: <http://www.fcc.gov/fcc-bin/audio/FCC-02-286A3.pdf>

Footnote 11) I was on *very* solid ground.²² A literal interpretation of the specifications in the *First R&O* appendices is that IBOC facilities must use PAC to be conforming—a codec that is essentially unavailable and for which there is no demand.

20. In contrast to the *R&O*, the *SR&O* (at 7, 91, and 99) makes a second definition of the “*de facto* standard,” relying on the prototype system “as tested” by the NRSC. As explained in the *Petition*, the NRSC tested prototype systems that used the AAC codec, not PAC. Although not codified in the Final Rule, the *SR&O* (at 99) also allows alternatives to the specifications in Appendices B and C provided that the public is allowed “appropriate notice and comment.” AAC received many supportive comments in the process leading up to the *R&O*, and arguably was permitted by decision in the *R&O* itself. Of course, the duality in Commission’s final rule regarding PAC and AAC has limited relevance because what’s actually being sold today in the marketplace uses neither of them. “HD Radio” today is nonconforming by either standard.

21. I respectfully submit that this can’t be the model of “regulatory clarity” that the Commission had in mind when it issued the *FNPRM* (at 26). The Commission had determined that adoption of a documentary standard *first* would “compress the timeframe for finalizing the rules,” and nothing has transpired since then to invalidate the Commission’s early good judgment. No change of course is warranted by the record. We are today at a final rule with no real standard or clarity, and I again ask the Commission to give this situation careful reconsideration.

G. The Petition Does Not Seek to Halt the Use of IBOC

22. In the end, NAB expresses their high-level concern: “[H]alting the deployment of IBOC, after several years of operation and now with substantial adoption not only by the radio

²² I should note that the current version of iBiquity’s IBOC system is no longer structured in terms of protocol stacks as shown in Appendices B and C. In their place, see “Figure 2: AM band implementation of NRSC-5 IBOC digital radio standard” and “Figure 12: FM band implementation of NRSC-5 IBOC digital radio standard” in NRSC-5.

industry but by receiver and car manufacturers, would clearly not be in the public interest.”

(NAB Opposition, *Id.*, at p. 9.)

23. I hasten to point out that halting the deployment of IBOC is not the goal of the *Petition*. The goal of the *Petition* is to ensure that U.S. DAB, as however ultimately deployed, is fully documented and no longer secret. The difficulty arises only insofar as iBiquity has cast doubt on whether or not this is possible with the IBOC system as it is currently fielded, or at all. Since we have an existence proof of an IBOC system that could have been fully documented—the “as tested” version—prudence requires that we call a “time out” and allow the Commission time to sort through the facts and law, while not making the situation as it stands any worse. What the *Petition* asks is to “suspend the *rollout* of DAB” (emphasis added), not the suspension of DAB itself, and even then only “until a plan of resolution is adopted.” (*Petition, Id.*, at 6.)

24. It occurs to me in retrospect that perhaps I might not have sufficiently well “state[d] with particularity the respects in which petitioner believes the action taken should be changed.” (§ 1.429(c)) So, I ask the Commission’s leave to summarize it here. I look for an order on reconsideration that:

- a) Makes policy findings congruent with those requested in the *Petition* (at 57).
Such findings would be little more than re-articulation of policy that the Commission has long held, and they are fully supported by the *Petition* (*passim*). I am more than willing to have iBiquity choose how to resolve the “thorny problem” (*Petition*, at 50 and 6) once they realize that they have no choice but to do so.
- b) Decides that § 73.404(a) was improvidently adopted, and replaces it with “Reserved,” pending full consideration and resolution of the issues (*Petition, passim*.)

- c) At the Commission's option, establishes *temporary* authority²³ for IBOC broadcasting, "as is," with no further modification, by only those licensees and permittees engaged in it as of the effective date of the order. "Temporary" means with a sunset (I would suggest after one year) in order to put teeth into the enforcement of the Commission's policies and to minimize the burden on the public if the U.S. DAB system must be modified or changed.²⁴ (*Petition* at 6 and 56.)
- d) Announces intent to continue and expand temporary authority (e.g., to all licensees) when and if an acceptable plan of resolution is presented to the Commission (*Petition* at 6 and 21), and to provide a final rule after the plan is carried out (e.g., the acceptance of a complete documentary standard (*Petition* at 8)).

III. CONCLUSION

25. For the foregoing reasons, the Commission should decide this opposition to the *Petition* to be unpersuasive.

Respectfully submitted,



Jonathan E. Hardis
356 Chestertown St.
Gaithersburg, MD 20878-5724

Dated: February 18, 2008

²³ I note that in the *Petition, Id.*, at 2 I used the word "temporary" when I should have used "interim." I apologize for the error in editing.

²⁴ I note that backup options for DAB exist if iBiquity is unwilling or unable to cure their default. See, e.g., "Quite a few respected engineers in this industry have suggested that DRM offers important improvements over AM HD." in *Battle for the Band: AM IBOC Under Siege*, Radio World Online, December 5, 2007; Available electronically at: <http://www.rwonline.com/pages/s.0052/t.10171.html>

CERTIFICATE OF SERVICE

I, Jonathan E. Hardis, hereby certify that a copy of the foregoing *Reply to Opposition of the National Association of Broadcasters to the Petition for Reconsideration of Jonathan E. Hardis* was sent this 18th day of February, 2008, by first class mail, postage prepaid, to:

Valerie Schulte, Esq.
National Association of Broadcasters
1771 N Street NW
Washington, DC 20036-2800

A handwritten signature in cursive script that reads "Jonathan E. Hardis". The signature is written in black ink and is positioned above the printed name.

Jonathan E. Hardis