

Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

RECEIVED  
FEB 22 2000  
FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )

Digital Audio Broadcasting Systems )  
And Their Impact On the Terrestrial Radio )  
Broadcast Service. )

MM Docket No. 99-325

**REPLY COMMENTS**

USA Digital Radio, Inc. ("USADR") by its attorneys, hereby submits these Reply Comments in the above-referenced proceeding. As is described in greater detail below, the comments in this proceeding demonstrate strong support for In-Band On-Channel Digital Audio Broadcasting ("IBOC DAB") and an active Commission role in the establishment of an IBOC DAB standard. Moreover, the comments generally support the evaluation criteria and approach the Commission articulated in its Notice of Proposed Rulemaking.<sup>1</sup> USADR encourages the Commission to expeditiously endorse IBOC as the best means to implement DAB and to establish procedures for collecting additional information and designating an IBOC standard by the end of this year. In addition, USADR replies below to some of the specific issues raised in the comments.

**I. The Commission Should Endorse the IBOC Model for DAB**

The comments strongly advocate an IBOC model for DAB. The Commission should move quickly to endorse IBOC as the best means to implement DAB and to establish a process for selecting an IBOC system for the United States.

<sup>1</sup> *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, MM Docket No. 99-325, *Notice of Proposed Rulemaking* (rel. Nov. 1, 1999) ("Notice").

No. of Copies rec'd 014  
List A B C D E

A wide range of parties submitted comments endorsing IBOC. For example, some of the nation's largest radio groups<sup>2</sup> as well as owners of individual broadcast stations<sup>3</sup> encouraged the FCC to move forward with prompt introduction of IBOC DAB. The comments confirm that IBOC provides the flexibility and service enhancements needed to strengthen the over-the-air radio industry without harming existing AM and FM broadcasts. USADR welcomes this strong interest in IBOC and this recognition that IBOC is the best means to ensure radio's future success.

Although some parties endorsed efforts to identify additional spectrum for DAB, no viable options for a new spectrum DAB model were advanced in the comments. In fact, the comments contain strong opposition to the Commission's proposal to consider use of TV Channel 6 for DAB.<sup>4</sup> The comments from the current users of Channel 6 spectrum make it clear that Channel 6 will not be available for reallocation to DAB even after the transition to digital television. The Commission should assume there will be requests by existing TV Channel 6 licensees to continue to use that spectrum for an extended transition period or for permanent relocation of DTV broadcasts. To the extent TV broadcasts are retained in TV Channel 6, the spectrum would remain unavailable for DAB. Of particular interest are the comments of Grupo Televisa, S.A. ("Televisa"), a Mexican corporation which owns XETV (Channel 6) in Tijuana, Mexico.<sup>5</sup> Televisa notes that the United States is prohibited under existing international agreements from using TV Channel 6 for DAB

---

<sup>2</sup> E.g., Comments of Infinity Broadcasting Corporation, MM Docket No. 99-325, dated Jan. 24, 2000.

<sup>3</sup> E.g., Letter from Rene Bell, General Manager, W & B Broadcasting to Magalie R. Salas, MM Docket No. 99-325, dated Jan. 4, 2000 (WASE-FM, Elizabethtown, Kentucky).

<sup>4</sup> See e.g., Comments of Hearst-Argyle Television, Inc., MM Docket No. 99-325 dated Jan. 24, 2000; Comments of The Association for Maximum Service Television, Inc. and Certain Channel 6 Licenses, MM Docket No. 99-325, dated Jan. 24, 2000.

<sup>5</sup> Comments of Grupo Televisa, S.A., MM Docket No. 99-325, dated Jan. 24, 2000.

within 400 kilometers of the U.S.-Mexican border.<sup>6</sup> Given the mobile nature of radio listening, it would not be feasible to implement DAB if it were unavailable in large regions covering major urban areas such as San Diego, California, Phoenix, Arizona and San Antonio, Texas. Therefore, USADR encourages the Commission to conclude the new spectrum DAB model is not a viable option.

## **II. There is Universal Support for an FCC Standard**

The comments contain universal support for a DAB standard. All parties addressing this issue agree that an FCC standard on DAB is necessary to give direction to the marketplace and to encourage a prompt transition to digital. USADR consistently has supported active Commission involvement in evaluation of IBOC systems and selection of an IBOC standard. USADR urges the Commission to decide in its *Report and Order* that an IBOC standard is necessary and to establish appropriate deadlines to obtain test information and select a standard by the end of this year.

## **III. IBOC Will Offer Significant Listener Benefits**

IBOC will significantly improve the existing listening experience for both AM and FM listeners. Even in the hybrid mode, IBOC will allow broadcasters to greatly improve audio quality and to offer new data services. USADR submits that these improvements provide significant incentive for listeners to upgrade to digital and thereby stimulating a strong demand for digital receivers.

IBOC DAB will offer dramatic audio improvements in two important areas. First, IBOC will provide enhanced audio fidelity. In the case of FM, listeners will receive near-CD quality sound. AM listeners will receive FM-like quality. This level of improvement will meet expectations for improved audio quality and will be attractive to listeners in many listening environments. Subjective

---

<sup>6</sup> Televisa Comments at 2.

evaluation tests conducted by Lucent Digital Radio, Inc. ("LDR") are informative on this point. LDR's subjective evaluation of analog FM and the LDR IBOC DAB system indicates listeners perceived a significantly higher audio quality from IBOC.<sup>7</sup> IBOC consistently received higher Mean Opinion Scores than analog FM using a variety of analog receivers.

In addition to audio fidelity, IBOC will provide improved robustness. This translates into greatly enhanced resistance to multipath fading, adjacent channel interference, noise and other impairments. Analog radio experiences a constant variation in quality due to a variety of channel impairments and interference. With IBOC, there is consistent high quality whenever reception is available. USADR's field tests indicate no degradation of reception until the edge of coverage.<sup>8</sup> Particularly in the case of mobile reception, the elimination of fading, noise and blending to mono in the primary coverage area creates a dramatic improvement in the listening experience.

USADR believes this improvement will be of significant interest to consumers and create a tremendous demand for IBOC receivers. USADR's research and evaluations from individuals who have listened to the USADR system show that improved audio quality is a sufficient added value to promote consumer acceptance of IBOC.<sup>9</sup> USADR's research shows that audio fidelity combined with improved robustness will create a superior audio system listeners will embrace.

IBOC also allows broadcasters to offer new data services not related to the audio programming, such as traffic and weather, and information about the radio programming. This capability will exist in the hybrid mode and will go well beyond the data capability of existing

---

<sup>7</sup> Comments of Lucent Digital Radio, Inc., MM Docket No. 99-325 (dated Jan. 24, 2000) at Appendix F.4, Tables, 5, 6 and 7.

<sup>8</sup> See USA Digital Radio Report on Laboratory and Field Testing Presented to the National Radio Systems Committee, dated Dec. 15, 1999 at Appendix H, Figures H-6 and H-7.

<sup>9</sup> See Comments of Sony Electronics Inc., MM Docket No, 99-325, dated Jan. 24, 2000.

RBDS technology. USADR believes these new services will enhance the attractiveness of IBOC for consumers.

USADR also believes that the experience of Eureka-147 in Europe is not particularly instructive when considering DAB options for the United States. Because Eureka-147 was implemented in new spectrum, it required an allotment for new stations and a significant change in behavior for listeners to move to new stations. IBOC implementation will not bear the same burden. Of equal significance is the fact that the European and American radio markets are quite different. The United States has a much stronger commercial radio industry with significantly more entrepreneurial activity than has traditionally characterized European broadcasting. USADR believes IBOC DAB will be implemented in the United States in a more market-driven manner than was the case for the roll-out of Eureka-147 in Europe. Commercial broadcasters and the strong consumer electronics industry in the United States will have incentives to provide consumer education and promotion of the benefits of IBOC technology. These activities were lacking for much of Eureka-147's implementation and can explain the slow adoption of that technology.

#### **IV. The FCC Needs to Establish Procedures for Selecting an IBOC Standard**

Based on the strong support for IBOC in the comments, the universal agreement on the need for an FCC standard and the progress of IBOC technology, the Commission quickly should establish procedures for selecting an IBOC standard. USADR actively participates in and supports the activities of the National Radio Systems Committee ("NRSC"). The NRSC has provided valuable guidance on laboratory and field tests of IBOC systems. In addition, the NRSC is evaluating USADR's recent report on its test program to compare IBOC against existing analog performance.

Notwithstanding this valuable activity by the NRSC, USADR continues to believe the Commission must be actively involved in the evaluation of IBOC technology and selection of an

IBOC standard. Unlike the NRSC, which focuses solely in technical attributes of the technology, the FCC has the ability to synthesize the technical, legal, regulatory and commercial considerations which must be addressed in any DAB standard.

To expedite efforts toward implementation of IBOC, USADR encourages the Commission to establish procedures for collection of information on IBOC systems and results of comprehensive system tests. In its comments, USADR proposed that the Commission adopt a *Report and Order* in this proceeding by June 1, 2000 establishing September 1, 2000 as a date for submission of IBOC system descriptions and test data. This schedule would allow the Commission to designate an IBOC standard by the end of this year. USADR encourages the Commission to adopt this schedule to promote the transition to DAB.

**V. IBOC Will Not Have a Severe Impact on Small Businesses**

IBOC is designed to serve the needs of all broadcasters and will not place undue burdens on small, family-owned broadcast stations. There are three important factors which the Commission should consider when analyzing the impact of IBOC on small businesses. First, because IBOC retains much of the existing analog infrastructure, upgrade costs for broadcasters are minimized. Second, IBOC offers broadcasters tremendous flexibility regarding the timing of any upgrade to digital, thereby allowing stations to best manage any transition costs. Third, IBOC preserves the ability of existing radios to work thereby ensuring that the transition to digital will not impact a station's existing listener base.

Because IBOC will continue to use the existing analog AM and FM bands, the current analog broadcast infrastructure will be retained. AM and FM stations will be able to retain their studios, studio equipment and tower. The most significant upgrade costs will come from new DAB-compatible equipment in the transmission path, such as exciters. There will be several ways for

stations to upgrade depending on the desire to move to more state-of-the-art technology or to retro-fit existing systems. Therefore, USADR estimates total upgrade costs will range from \$35,000 to \$200,000 per station, depending on the need for a new transmitter.

IBOC offers stations infinite flexibility to manage the costs of any upgrade. Because IBOC can be implemented without harmful interference to existing analog service, stations will be able to retain the analog mode indefinitely. USADR envisions that many stations will upgrade in the course of normal equipment replacement cycles in order to minimize costs. Because broadcasters will be able to establish the timing of any upgrade, they will be able to avoid unnecessary costs and wait to replace equipment in the course of regular maintenance.<sup>10</sup>

The importance of IBOC to small businesses is shown by the interest of hundreds of stations in USADR's EASE program and by the comments of a number of small broadcasters filed in this proceeding.<sup>11</sup> USADR disagrees with the Office of Advocacy of the United States Small Business Administration that the Commission is not addressing the needs of small businesses.<sup>12</sup> USADR believes there is significant information in the record concerning the impact of IBOC on small businesses and expects the Commission to continue to examine that issue in the course of this proceeding.<sup>13</sup>

---

<sup>10</sup> These attributes of IBOC also should minimize the financial impact of the transition to digital for public radio stations. *See* Comments of Station Resource Group, MM Docket No. 99-325, dated Jan. 24, 2000.

<sup>11</sup> *See, e.g.* Letter from Barry Grant Marsh, President/CEO, Resort Radio Systems, Inc. to Magalie R. Salas, MM Docket No. 99-325 (Jan. 5, 2000) (WSTU-AM, Stuart, Florida); Letter from Lee O. Axdahl, President, LA Radio Incorporated to Magalie R. Salas, MM Docket No. 99-325 (Jan. 5, 2000) (KSOB-FM, Dell Rapids, South Dakota).

<sup>12</sup> Comments of the Office of Advocacy, U.S. Small Business Administration dated Jan. 24, 2000.

<sup>13</sup> Smaller broadcasters may be more vulnerable to new competition from satellite services and nonbroadcast sources of digital entertainment. IBOC will allow small broadcasters to continue to compete with these other sources of digital entertainment.

USADR is addressing the concerns of small broadcasters through its on-going work with equipment manufacturers to explore a number of cost effective implementation strategies. USADR believes the comments of a few small broadcasters expressing concern about the cost of IBOC reflect a misunderstanding of the nature of the flexible IBOC implementation process rather than a fundamental disagreement about a transition to DAB. USADR anticipates that significant public information targeted at consumers and at broadcasters will be necessary for IBOC to win acceptance in the marketplace. The EASE program is one element in that effort. USADR looks forward to working with the Commission and industry groups such as the National Association of Broadcasters to address these concerns and to educate the public about the benefits of IBOC DAB.

**VI. It is Premature to Consider Using DAB for Official Timekeeping**

It is premature for the Commission to consider imposing on a DAB system the obligation to broadcast official time. USADR encourages the Commission to take no action on the proposal of the National Institute of Standards and Technology ("NIST") until NIST demonstrates a greater need for Commission action on this issue.

In its comments, NIST proposes that the Commission set aside a portion of the digital bitstream in any DAB system for broadcast of official time.<sup>14</sup> NIST does not set out, however, a compelling case for including this issue in the instant proceeding. It is unclear from NIST's comments why existing means of dissemination of official time are inadequate and why other technologies, such as digital television, could not be used more effectively for those purposes.

NIST claims the bandwidth requirements for this use would be insignificant. Because IBOC must confront severe bandwidth limitations stemming from the need to accommodate both analog

---

<sup>14</sup> Comments on Notice of Proposed Rulemaking submitted by National Institute of Standards and Technology, MM Docket No. 99-325 (dated Jan. 24, 2000).

and digital transmissions in the existing bands, NIST bears a particularly high burden to demonstrate the public interest in imposing this burden on IBOC systems.

The need for broadcasts of official time would need to be established in a separate proceeding before the Commission can impose that obligation on radio broadcasters. USADR encourages the Commission to take no further action on this proposal until NIST establishes a greater need through a Petition for Rulemaking, or other appropriate means, on broadcasting official time.

#### **VII. Conclusion**

Based on the support for IBOC in the comments, USADR encourages the Commission to expedite its consideration of IBOC DAB. In particular, USADR asks the FCC to designate IBOC as the DAB system for the United States as quickly as possible, and then to adopt an IBOC standard by the end of this year.

Respectfully submitted,



Robert A. Mazer  
Albert Shuldiner  
Vinson & Elkins L.L.P.  
1455 Pennsylvania Avenue, N.W.  
Washington, DC 20004-1008  
(202) 639-6500

Counsel for USA Digital Radio, Inc.

Dated: February 22, 2000

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 22nd day of February 2000, a true and correct copy of the foregoing Comments of U.S.A. Digital Radio, Inc. was served by first class mail, postage prepaid, upon the following:

Candace A. Wendling  
President & General Manager  
WAJI-FM & WLDE-FM  
347 West Berry Street, Suite 600  
Fort Wayne, IN 46802

Rene Bell  
KOOL 103.5 WASE  
P.O. Box 2087  
Elizabethtown, KY 42702

Bradley A. Howard  
President/General Manager  
KOFO 1220 AM  
P.O. Box 16  
Ottawa, KS 66067

Barry Grant Marsh  
President/CEO  
Resort Radio Systems  
WSTU-AM 1450  
2435 SE Dixie Highway  
Stuart, FL 34996

Howard G. Bill  
President  
KOLM/KWWK/KLCX Radio  
Rochester Radio Group  
1220 4th Avenue, S.W.  
Rochester, MN 55902

Max Murphy  
KMSO  
725 Strand  
Missoula, MT 59801

Lee O. Axdahl  
President & General Manager  
KSOB FM/KSQB FM  
2301 West 50th Street  
Sioux Falls, South Dakota 57105-6568

Mark Heller  
President  
WTRW Incorporated  
1414 16th Street  
Two Rivers, WI 54241-3031

Gene Frantz  
TI Senior Fellow  
New Business Development Manager  
Texas Instruments  
12203 Southwest Freeway, Bldg. II  
Stafford, TX 77477

Roy R. Russo  
Cohn and Marks  
1920 N Street, N.W.  
Suite 300  
Washington, D.C. 20036-1622

Joseph M. Field  
John C. Donlevie  
Reed J. Slogoff  
Entercom Communications Corp.  
401 City Avenue, Suite 409  
Bala Cynwyd, PA 19004

Christopher J. Sova  
Leventhal, Senter & Lerman P.L.L.C.  
2000 K Street, N.W., Suite 600  
Washington, D.C. 20006-1809

Kevin F. Reed  
Elizabeth A. McGeary  
Scott S. Patrick  
Dow, Lohnes & Albertson, P.L.L.C.  
1200 New Hampshire Avenue, N.W.

E. Ashton Johnston  
Tashir J. Lee  
Piper Marbury Rudnick & Wolfe LLP  
1200 Nineteenth Street, N.W.  
Suite 700  
Washington, D.C. 20036

Henry L. Baumann  
Jack N. Goodman  
Lori J. Holy  
National Association of Broadcasters  
1771 N Street, N.W.  
Washington, D.C. 20036

Charles T. Morgan  
Senior Vice President  
Susquehanna Radio Corp.  
140 E. Market Street  
York, PA 17401

Malcolm G. Stevenson  
Schwartz, Woods & Miller  
1350 Connecticut Avenue, N.W.  
Suite 300, Dupont Circle Building  
Washington, D.C. 20036

David S. Forsman  
3115 Seventh Street  
Lewiston, Idaho 83501-4607

N.J. Miller  
President  
Digital Radio Express, Inc.  
15970 Miradero Avenue  
San Jose, CA 95127

Ben Benjamin  
Lucent Digital Radio, Inc.  
20 Independence Blvd.  
Warren, NJ 07059

Shunichi Yamamoto  
Association of Radio Industries  
& Businesses (ARIB)  
Nittochi Bldg. 14F, 1-4-1  
Kasumigaseki  
Chiyoda-ku, Tokyo 100-0013  
JAPAN

David R. Siddall, Esq.  
Verner, Liipfert, Bernhard,  
McPherson & Hand, Ch.  
901 15th Street, N.W.  
Washington, D.C. 20005

James Chladek  
President  
Picture Radio Communications  
204 East 23rd Street  
New York, NY 10010

Jason Farrow  
Senior Vice President  
Public Affairs  
Sony Electronics  
1 Sony Drive  
Park Ridge, NJ 07656

Richard D. Zerod  
Senior Technical Specialist  
Visteon Automotive Systems  
16630 Southfield Road, Suite 4300  
Allen Park, MI 48101

Andrew J. Pincus  
General Counsel  
United States Department of Commerce  
National Institute of Standards and  
Technology  
Washington, D.C. 20230

David A. Nall  
Benigno E. Bartolome  
Squire, Sanders & Dempsey LLP  
1201 Pennsylvania Avenue, N.W.  
P.O. Box 407  
Washington, D.C. 20044

Jere W. Glover  
Chief Counsel for Advocacy  
Eric E. Menge  
Assistant Chief Counsel for  
Telecommunications  
Office of Advocacy  
United States Small Business  
Administration  
409 3rd Street, S.W.  
Washington, D.C. 20416

Neal A. Jackson  
Donald Lockett  
Michael Starling  
Gregory A. Lewis  
National Public Radio, Inc.  
635 Massachusetts Avenue, N.W.  
Washington, D.C. 20001

David J. Grace  
President & CEO  
Nautel Limited  
10089 Peggy's Cove Road (HWY #333)  
Hackett's Cove  
R..R.#1, Tantallon  
Nova Scotia  
CANADA B0J3J0

Gene A. Benedictson  
Clarkston Broadcasters Inc.  
P.O. Box 669  
Clarkston, Washington 99403

Don Schellhardt  
The Amherst Alliance  
45 Bracewood Road  
Waterbury, CT 06706

Valerie Schulte  
National Association of Broadcasters  
1771 N Street, N.W.  
Washington, D.C. 20036

John P. Bankson, Jr.  
Robert A. Skitol  
Drinker Biddle & Reath LLP  
1500 K Street, N.W., Suite 1100  
Washington, D.C. 20005

Michael Petricone  
Gary S. Klein  
Ralph Justus  
Consumer Electronics Association  
2500 Wilson Boulevard  
Arlington, VA 22201

Christopher Maxwell  
Secretary/Treasurer  
Virginia Center for the Public Press  
1621 W Broad Street  
Richmond, VA 23220

Charles H. Haubrich  
President  
QEI Corporation  
One Airport Drive  
P.O. Box 805  
Williamstown, NJ 08094

Richard-Michelle Eyre  
REC Networks  
P.O. Box 2408  
Tempe, AZ 82580-2408

Pete TriDish  
Prometheus Radio Project  
P.O. Box 30942  
Philadelphia, PA 19104

Victor Tawil  
Senior Vice President  
Association for Maximum  
Service Television, Inc.  
1776 Massachusetts Avenue, N.W.  
Suite 310  
Washington, DC 20036

Jonathan D. Blake  
Amy L. Levine  
Covington & Burling  
1201 Pennsylvania Ave., N.W.  
Washington, DC 20004-2401

John C. Quale  
Skadden Arps Slate Meagher & Flom L.L.P.  
1440 New York Avenue, N.W.  
Washington, DC 20005

David P. Fleming  
Gannett Broadcasting Co.  
1100 Wilson Boulevard  
29<sup>th</sup> Floor  
Arlington, VA 22234

Marnie K. Sarver  
Wiley Rein & Fielding  
1776 K Street, N.W.  
Washington, DC 20006

Michael J. McCarthy  
A.H. Belo Corp.  
400 South Record  
Dallas, TX 75202

Carl R. Ramey  
Wiley Rein & Fielding  
1776 K Street, N.W.  
Washington, DC 20006

Eric L. Bernthal  
Arthur S. Landerholm  
Latham & Watkins  
1001 Pennsylvania Ave., N.W.  
Suite 1300  
Washington, DC 20004

John Griffith Johnson, Jr.  
Paul Hastings Janofsky & Walker, L.L.P.  
1299 Pennsylvania Ave., N.W.  
10<sup>th</sup> Floor  
Washington, DC 20004-2400

Mark J. Prak  
Brooks Pierce McLendon  
Humphrey & Leonard, L.L.P.  
First Union Capital Center, Suite 1600  
P.O.Box 1800  
Raleigh, North Carolina 27602

Dennis P. Corbett  
Leventhal Senter & Lerman P.L.L.C.  
2000 K St., N.W.  
Suite 600  
Washington, DC 20006-1809

Molly Pauker  
Fox Television Stations, Inc.  
5151 Wisconsin Ave., N.W.  
Washington, DC 20016

Preston R. Padden  
The Walt Disney Company  
1150 17<sup>th</sup> St., N.W.  
Suite 400  
Washington, DC 20036

Kenneth E. Satten  
Wilkinson Barker Knauer, L.L.P.  
2300 N Street, N.W.  
Suite 700  
Washington, DC 20037

Dennis P. Corbett  
Leventhal Senter & Lerman P.L.L.C.  
2000 K Street, N.W.  
Suite 600  
Washington, DC 20006-1809

Kenneth W. Bowles  
14 Georgetown Court  
Union, MO 63084

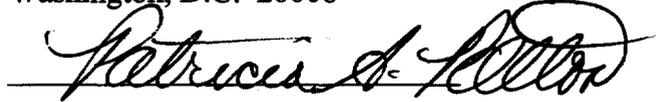
Kevin F. Reed  
Elizabeth A. McGeary  
Scott S. Patrick  
Dow, Lohnes & Albertson  
1200 New Hampshire Avenue, N.W.  
Suite 800  
Washington, D.C. 20036

Charles A. Cooper  
du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, FL 34237

Todd D. Gray  
Margaret L. Miller  
Low Lohnes & Albertson PLLC  
1200 New Hampshire Avenue, N.W.  
Suite 800  
Washington, D.C. 20036-6802

John P. Janka  
Alexander D. Hoehn-Saric  
Latham & Watkins  
1001 Pennsylvania Avenue, N.W.  
Suite 1300  
Washington, D.C. 20004

Barbara K. Gardner  
Norman P. Leventhal  
Sarah R. Iles  
Leventhal, Senter & Lerman PLLC  
2000 K Street, N.W.  
Suite 600  
Washington, D.C. 20006

  
Patricia A. Albertson