Before the
Federal Communications Commission
Washington, D.C. 20554

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	)	

COMMENTS OF MICROSOFT CORPORATION

As described in other Commission proceedings, Microsoft Corporation (Microsoft) is committed to developing technologies and devices that enable consumers to enjoy digital information and entertainment in exciting new ways.[1] Consistent with this goal, we believe, like the Commission, that the widespread deployment of digital audio broadcasting (DAB) will be an important, additional step in the nation's transition to a fully digital communications environment. Microsoft therefore supports the Commission's efforts to develop final operational requirements "to foster development of a vibrant terrestrial digital radio service for the public."[2] In adopting these requirements, we specifically encourage the Commission to promote the public interest by allowing multicasting and permitting multiple datacasting transports in digital radio signals.

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[1] *See, e.g.*, *Ex Parte* Letter from Paula H. Boyd, Microsoft Corp., and David Isaacs, Hewlett-Packard Corp., to Marlene H. Dortch, Secretary, FCC, CS Docket No. 97-80, PP Docket No. 00-67, at 2-4 (Aug. 8, 2003); Comments of Microsoft Corp., Hewlett-Packard Corp., Dell, Inc., and Apple Computer, Inc., CS Docket No. 97-80, PP Docket No. 00-67, at 2-5 (Feb. 13, 2004); Certification of Microsoft Corp., MB Docket No. 04-66 (Mar. 1, 2004).

[2] Further Notice of Proposed Rulemaking and Notice of Inquiry, *Digital Audio Broadcasting Systems and Their Impact on the Terrestrial Radio Broadcast Service*, MM Docket No. 99-325, FCC 04-99, ¶ 1 (rel. Apr. 20, 2004) (*DAB FNPRM/NOI*).

THE MULTICASTING OF DIGITAL AUDIO STREAMS AND USE OF MULTIPLE DATA TRANSPORTS WILL PROMOTE DEPLOYMENT AND ADOPTION OF DAB TECHNOLOGY

The *DAB FNPRM/NOI* seeks comment on whether the Commission's final DAB rules should permit broadcasting of multiple digital audio streams and a range of datacasting services.[3] Microsoft believes that such policies will help promote rapid adoption of digital radio services by both broadcasters and consumers.

The last fifty years have shown that consumers surge towards technologies and services that offer quantum leaps in consumers' ability to enjoy existing forms of content and to access entirely new media. Reams have been written about the rapid adoption and near universal penetration of broadcast receivers, VCRs, CD players and (soon) DVD players. The high penetration of multi-channel video services and of Internet access also speaks volumes to consumers' persistent desire to access a diversity of content across multiple media. Not every new content-delivery technology succeeds, and the marketplace at times can seem fickle. But as a policy matter, the public interest is best served when the Commission's regulations do not impede experimentation or risk-taking by the nation's innovators.

Tracking this theme, Microsoft believes that consumers will be encouraged to transition to DAB if the service offers a greater variety of content than is currently available, both via multicasts of audio streams and via a range of datacasting systems. In the *DAB FNPRM/NOI,* the Commission noted the variety of beneficial services that could be delivered via multiple audio and data streams in digital radio signals.[4] Microsoft agrees. Consumers already enjoy a number of data services delivered through the FM subcarriers of existing analog radio signals.

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[3] *DAB FNPRM/NOI* ¶¶ 20, 27.

[4] *Id.* ¶¶ 20, 21, 26.

For example, Microsoft has recently deployed its Smart Personal Objects Technology (SPOT), which uses FM subcarriers to deliver real-time data – including weather forecasts, headlines, stock quotes, and sports scores – to mobile personal devices such as SPOT-enabled watches.[5] The prospects for DAB-based audio and data services are even brighter. One can envision widespread multicast services such as radio reading and other assisted living services, the simulcast of second-language programming, a variety of new audio program services unavailable elsewhere, and the datacast of public safety information and full news stories.

The introduction of digital radio services will offer opportunities to develop and deploy these types of services, provided that the Commission's technical mandates leave room for them. For instance, to enhance multicasting options, the Commission should afford broadcasters' the flexibility to assign data rates between main and supplemental audio services as appropriate. This will give broadcasters the freedom to develop and deploy a range of digital audio services and to adapt those services in response to consumer interest and demand. In addition, the Commission should permit the deployment of alternative audio codecs (in addition to iBiquity's HD-Radio™ "HDC" codec) for the transmission of supplemental audio services.

Microsoft further agrees that the Commission generally should "adopt a flexible policy permitting radio stations to produce and distribute any and all types of datacasting services."[6] The adoption of the iBiquity In-Band On-Channel (IBOC) transmission and coding architecture for digital *audio* service does not necessitate adoption of iBiquity's digital *datacasting* architecture, which is still early in development, as an exclusive datacasting standard.[7]

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[5] *See, e.g.,* http://direct.msn.com/About/default.aspx (last visited June 16, 2004) .

[6] *DAB FNPRM/NOI* ¶ 27.

[7] *See id.* ¶ 26.

Innovation will thrive if the Commission's rules, either expressly or implicitly, do not limit developers' freedom and flexibility to roll out digital data transport services and applications interfacing with the IBOC standard. All in all, we encourage the Commission to consider and adopt flexible DAB operational requirements and policies designed to accomplish these results.[8]

CONCLUSION

For the foregoing reasons, Microsoft supports the Commission's efforts to encourage the transition to digital audio broadcasting services. To further that effort, we encourage the Commission to adopt rules and policies that will allow the deployment of a diversity of multicasting and datacasting services in digital radio signals.

Respectfully submitted,

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[8] Toward that end, we trust that the Commission will follow its well-established policy of ensuring that the "patent structure" of technologies adopted as Commission standards does not "obstruct[] . . . the service to be provided under the technical standards adopted by the Commission." *See* Public Notice 13948 (Dec. 1961), *Revised Patent Procedures of the Federal Communications Commission, reprinted in* Further Notice of Proposed Rulemaking and Notice of Inquiry, *Amendment of Part 73 of the Commission's Rules and Regulations (Radio Broadcast Service) to Provide for Subscription Television Service*, 3 F.C.C.2d 1, 26 (1966).