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Accessible Digital Radio Broadcast Services Project

Developing and Demonstrating Specialized Digital Radio Services for:

> Deaf and Hard of Hearing & Blind and Print Handicapped



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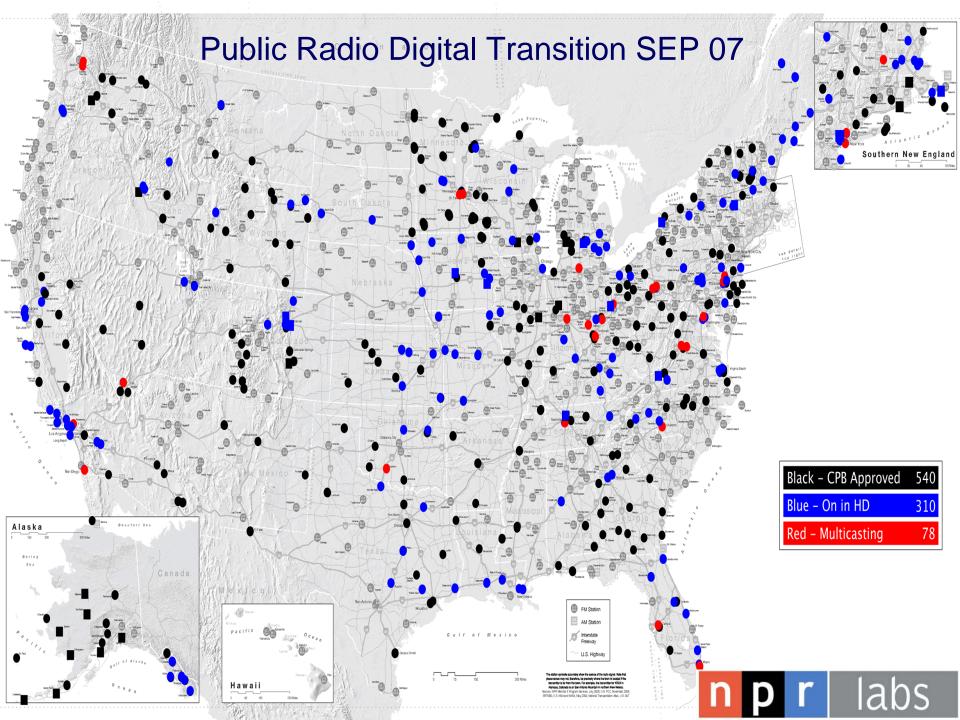
America's Only Not-for-Profit Radio Broadcast Technology R&D Center Established October, 2005

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# Why Accessible Radio?

Radio is immediate, companion medium
 Radio = hundreds of programs not on TV or web
 Radio works during emergencies with no power grid
 Since 1971 NPR has worked on extending signal reach to the public, now we're working on reaching the public better – accessibly, thanks to digital radio!

The Accessible Digital Radio Service Project:

Digital radio reading services for the visually impaired and print handicapped

First ever Captioned Radio for the Deaf and Hard of Hearing



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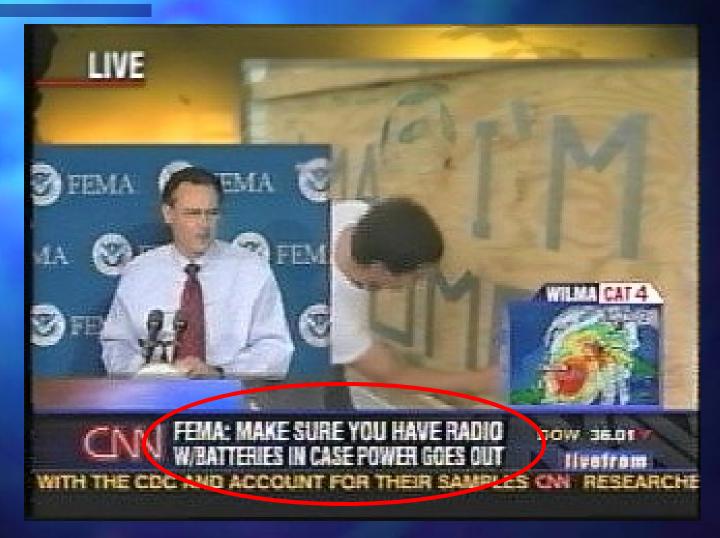
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Radio is Primary During Emergencies Accessible Emergency Information Important for 32 Million Visually and Hearing Impaired in US





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# **Accessible Radio Partners**





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## **Conditional Access Demonstration Configuration**

### Functionality:

Full HD Radio functionality – can receive "Free' over the air broadcasts

Plus the ability to receive and play-out locally generated scrambled audio service (test station KIBI).

Receiver A: Radio ID01 CA Entitled Receiver - HD4



x 88.3 HD1 − Free to air
 x 88.3 HD2 − Free to air
 x 88.3 HD2 − Free to air

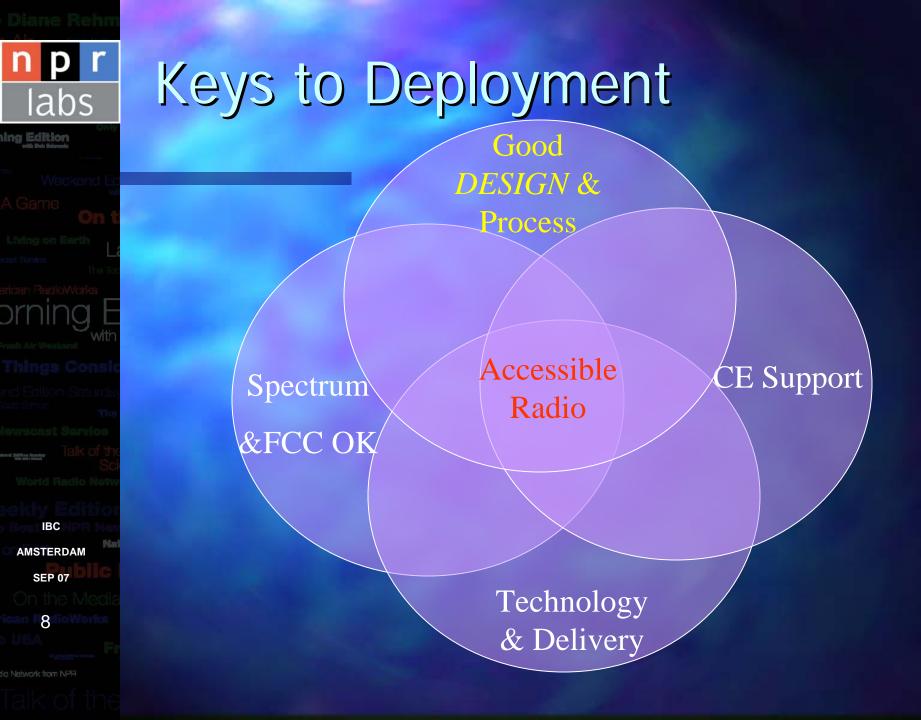
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88.3 HD3 – CA audio service Not Authorized Pearl Jam

88.3 HD4 – CA audio service Authorized Radio Reading Receiver B: Radio ID02 CA Entitled Receiver – HD3



 88.3 HD1 - Free to air
 88.3 HD2 - Free to air
 88.3 HD3 - CA audio service Authorized Pearl Jam
 88.3 HD4 - CA audio service Not Authorized Radio Reading





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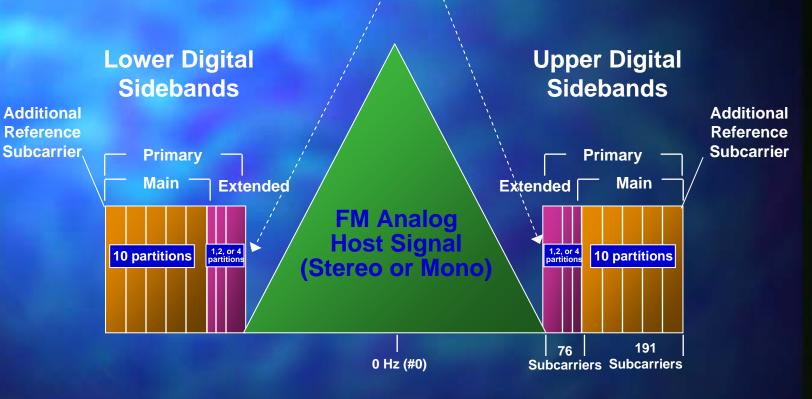
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Accessible Radio Resides as Advanced Applications Service in Recently Authorized Extended Hybrid Spectrum





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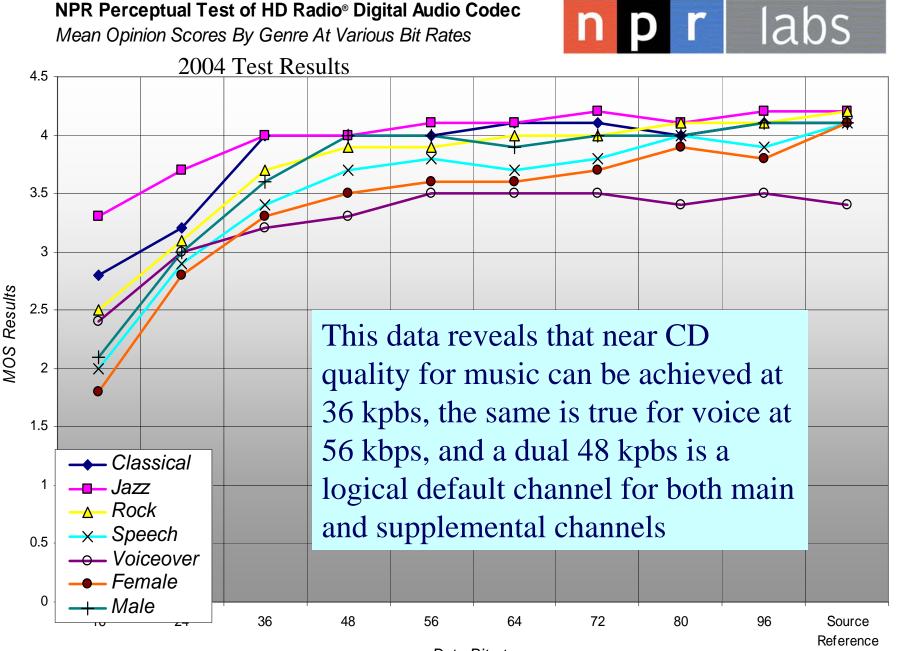
IBC 07 - First International Demonstration Protected & Accessible HD Radio Channels

Four Channel Extended-Hybrid HD Radio mode:

Jazz & Oldies-38 kbpsClassical-34 kbpsPay Per Listen Pearl Jam-24 kbpsBlind Reading Service-16 kbps122 kbps totalPlus: Captioned Radio for Deaf--

HD Radio Demonstration Powered by



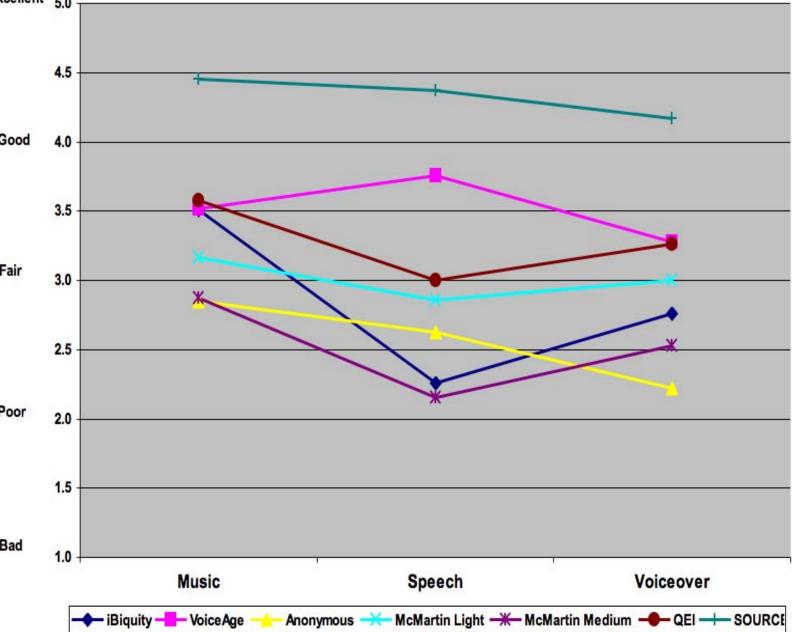


Data Bitrate

**Diane Rehm** 



### Quality Ratings at Very Low Bit Rates for Music, Speech and Voiceover





## **Captioned Radio Concept Demo**



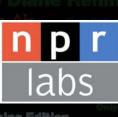
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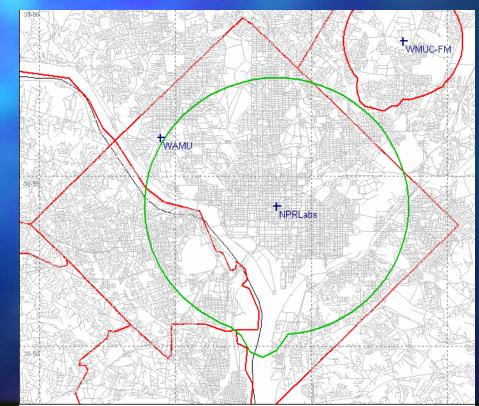
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WX3NPR – NPR Labs On-Air Test Station for Captioned Radio and Digital Radio Reading Services for Visually Impaired

50w Experimental FM+HD station on 87.9 FM Washington, D.C.



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1st Over-the-Air Captioned Radio Transmission Using Advanced Applications Services on HD Radio on WX3NPR - 10 AUG 07

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Front seat "Captioning" Concept
 driver can see traffic map, while listening to radio –

at the same time a D/HH passenger has same content on Captioned Radio view



