

CONSOLIDATED REQUESTS FOR INFORMATION

Captioned Radio Manufacturing Integration Readiness

Personalized Audio Information Systems Readiness

Blackboard Radio Integration Expertise

Braille Radio Manufacturing Expertise



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Consolidated Requests for Information

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REQUEST FOR INFORMATION

INTRODUCTION

Requesting Organizations

NPR Labs

International Center for Accessible Radio Technology (I-CART)¹

Background

NPR Labs is a recognized research lab with specialized expertise in digital radio technologies and accessible media service models². Because of the related nature of four current projects and initiatives NPR is issuing this consolidated request for information. I-CART is a strategic alliance between NPR and Towson University aimed at furthering the development and harmonization of accessible technologies for the global digital radio transition.

Information related to two active projects (Captioned Radio and the Personalized Audio Information System) and two emerging initiatives (Braille Radio and Blackboard Radio) are covered by this RFI.

Three applications are targeted for introduction with HD Radio in the United States technology (Captioned Radio, PAIS, and Braille Radio), and one is aimed at utilizing RDS technology for distance learning applications in developing nations.

Information Sought

HD Radio technology has enabled new methods of delivering content to the growing number of Americans with sensory disabilities. NPR Labs, on behalf of National Public Radio and NPR's nation-wide network of Member Stations, seeks information from interested manufacturing and sourcing organizations on integration capabilities for bringing purpose-specific sensory radio devices to market.

NPR is especially interested in:

¹ I-CART was established by NPR and Towson University in 2008 to encourage and facilitate the harmonization of accessible technologies in the global transition to digital radio broadcasting for maximum utility and successful manufacturing.

² NPR Labs was established October 1, 2005 as the only not-for-profit, public service broadcast radio research and development center in the United States. NPR Labs has been recognized for furthering the development of new digital public services, including testing the ability to add new dedicated digital channels for radio reading services for blind, visually impaired and print disabled people, as well as developing Captioned Radio to add text to new digital radio displays for the Deaf and Hard of Hearing. NPR Labs' work on the coverage and quality of the new digital radio services has helped define the state of the art. NPR and its staff have been recognized with several industry awards for these initiatives.

- understanding critical path manufacturing requirements,
- successful models for collaborative prototyping for successful launch orders,
- including subsidy considerations

Best Practice Recommendations

NPR has recently published a [Guide to Recommended Accessible Radio Manufacturing Practices] available for download at [www.nprlabs.org/]. Separately, NPR Labs has endorsed the recently produced International Association of Audio Information Services' STAR Project Manufacturing Recommendations which is available at [www.iaais.org/]. These documents comprise the most detailed guidance for manufacturers interested in producing accessible radio devices.

Requirements and Contact Information on Specific Projects & Initiatives

Personalized Audio Information Systems (PAIS) Project

Rich Rarey, Manager Strategic Technology Applications

rrarey@npr.org

+ 202-513-2577

The PAIS project seeks to combine store and forward technology with spoken menu and segment based indexing keyed to metadata tags in the audio overhead. NPR is developing the schema and prototyping for the broadcast production process using metadata tags in the audio overhead. We seek to integrate these techniques to tag, store and compile for playback of individual segments of radio reading services' digital transmissions.

Manufacturers with expertise in voice menu systems and storing and retrieving of audio files in accessible media are requested to identify critical path issues, prototyping strategies and comments on possible subsidy considerations.

Captioned Radio Project

Ellyn Sheffield, Managing Director, I-CART, Cognitive & Usability Scientist, NPR Labs

esheffield@towson.edu

+ 202-281-8190

The Captioned Radio project is a subset of NPR's Accessible Digital Radio Broadcast Services Project, funded by the National Institute on Disability and Rehabilitation Research.³ NPR successfully executed an end-to-end system demonstration of captioned radio coverage of the Presidential Election returns on November 4, 2008 with Deaf and Hard of Hearing consumers in five cities (Baltimore, Boston, Denver, Phoenix and Washington, D.C.). This demonstration exercise validated technical distribution capacity through the Public Radio Satellite System, assuring viability of nationwide distribution for a future Captioned Radio service from NPR through its several hundred local NPR Member Stations. The system also

³ NIDRR Grant [HG1000183], awarded October 2006.

demonstrated the viability of Captioned Radio as an authorized service through the Advanced Applications Service gateway in the HD Radio System.⁴

Manufacturers with expertise in display screen technology of no less than 3.2 inches supporting no less than 32 characters and four lines who can integrate their displays with HD Radio receiving technology are asked to identify critical path issues, prototyping strategies and comments on possible subsidy considerations.

Based on testing conducted with deaf and hard-of-hearing consumers during 2007, some look-and-feel issues that should be addressed are:

- Text and Display colors: Participants were most enthusiastic about “user control”, or the ability to change display screen and text colors to suit lighting conditions. Unlike television captioning produced as white text on black background, consumers were slightly more enthusiastic about black text on an orange background, if only fixed color combinations were produced.
- Text Fonts: Participants were equally happy with serif and sans serif type face, but overwhelmingly preferred having the ability to enlarge and decrease font size as needed for different conditions and applications.
- Text Presentation: In general participants preferred “block” text (several words at a time) over “times square scrolling” text in very small displays that required horizontal right to left presentation. With larger displays, participants liked both 3-line block text and left-justified continuous scrolling.
- Emergency alerting in mobile situations – getting drivers’ attention: Participants preferred prompting to include flashing color displays,

⁴ HD Radio is a service mark of iBiquity Digital, Inc. of Columbia, Maryland and is the only FCC-authorized digital radio broadcast service in the United States.

either on the radio or on the dashboard. International symbols preferred, or icons (i.e., flames for a fire; snowflake for snow storm) Limited words may be used to alert driver to pull over, followed by longer message when automobile parked.

- Emergency alerting in home situations – radio able to turn on with bed shaker and/or strobe capability.
- Emergency displays: Participants preferred emergency messaging to be prominently shown in the middle of the display, interrupting text from regular programming.
- Announcer/speaker identification styles. Participants preferred two or more announcers to be coded both in color AND by name (in parenthesis). Call-in speakers can be identified by the title “Caller”. NPR is working with iBiquity digital to incorporate transmission of these identification styles into the Captioned Radio text channel.

Braille Radio Initiative

User Experience: Ellyn Sheffield, Managing Director, I-CART, esheffield@towson.edu
+ 202-281-8190

Technical Integration: Rich Rarey, Manager, Strategic Technology Applications,
rrarey@npr.org; +202-513-2577

NPR’s Braille Radio Initiative seeks to integrate output from the Captioned Radio service (see above) with braille output, supported by a store and replay method, and supporting a DAISY/NISO compliant menu structure.

NPR is specifically interested in hearing from manufacturers of electronic Braille devices to identify critical path issues, successful prototyping strategies and information and comments on possible subsidy considerations.

Blackboard Radio Initiative

Mike Starling, CTO & Executive Director, NPR Labs

mstarling@npr.org

+ 202-513-2484

NPR's Blackboard Radio initiative seeks to develop a means for distance education using an FM radio audio subcarrier (for transmission of instructor audio) and FM-RDS technology (for simultaneous transmission of an image of the electronic blackboard).

NPR seeks information from display screen manufacturers (of display sizes no less than 7.5 inches), FM-RDS device manufacturers, and hand-crank/windup personal power systems manufacturers for consumer radio use. Organizations with systems integration expertise in related or similar initiatives are especially encouraged to respond.

NPR is seeking information to identify critical path issues, successful pre-launch prototyping strategies and information on possible subsidy considerations.

Consolidated RFI Project Owner

Mike Starling, CTO & Executive Director

NPR Labs

635 Massachusetts Avenue, N.W.

Washington, DC 20001-3753

+202-513-2484

mstarling@npr.org

Questions and comments on this RFI are encouraged by emailing mstarling@npr.org

Method and Timeframe of Response

Responses to this RFI are requested by COB Saturday, January 31, 2008.

Electronic copies are preferred and should be sent to the Project Owner:

Mike Starling, CTO & Executive Director, NPR Labs

635 Massachusetts Ave. NW

Washington, DC 20001

mstarling@npr.org

RFI Limitations

The issuance of this RFI by the Requesting Organizations neither implies nor constitutes any commitment to issue a further RFP or any other contractual or other obligation to any respondents. The Requesting Organization may withdraw, cease, modify, amend or further pursue the information gathering identified in this RFI at any time without further notice.

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