

NPR PAD (PSD) Initiative

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CPB Initiative

- To support public radio's implementation of Program Associated Data (PAD) capabilities
- To investigate first generation HD Radio capabilities including enhanced PAD services and secondary audio services
- To assess the technical, operational and listener implications of PAD beyond the audio quality improvements provided by HD Radio technology

NPR PAD Project

- Develop a vision (“consensus”) for PAD
- Define/refine implementation practices and standards, especially for stations and major network producers
 - Define/refine capabilities and limitations
 - Delineate compatibility of data structures
 - Assess impact of emerging technologies
 - Evaluate emergency warning capabilities

Process

Iterative

- Workshops
- Surveys
- Conference Calls
- Demonstrations
- User testing

Collaborators (1/2)

- Technology developers
 - iBiquity, Unique Interactive
- Producers/distributors
 - NPR Distribution, NPR Programming Division, independent producers, PRI PAD Consortium
- Toolmakers
 - system developers, workstation manufacturers
- Program deliverers
 - Stations, NPR Online, online facilitators

Collaborators (2/2)

- Transmission system manufacturers
 - Harris, BE, Nautel
- Consumer manufacturers
 - Kenwood, Visteon, Delphi
- Strategic interest and advocacy groups
 - IAAIS, public radio regional and professional organizations, others

Consensus Principles (revised) (1/11)

“All public radio programming should be PAD-enabled.”

- Consistent user experience
- Consistent amount of effort on stations' part

Consensus Principles (revised) (2/11)

“PAD should be produced just once, as early as possible in the production process, and capable of automated formatting for public radio output media.”

- Generated by original program producer
- Station-friendly
- Multi-format friendly

Consensus Principles (revised) (3/11)

“PAD content should be informative,
but not distracting.”

- Safety concerns
- Succinct

- succinct

Consensus Principles (revised) (4/11)

“PAD content should ‘add value’ to the consumer experience over and above the audio output.”

- Consistent with public radio values and traditions
- Worthy of listeners’ attention

Consensus Principles (revised) (5/11)

“PAD should be network provided, ContentDepot compatible, and should support easy manual insertion.”

- No unnecessary busy-work for stations
- Transparent to distribution systems
- Allows local creation and customization

Consensus Principles (revised) (6/11)

“PAD functionality should be carefully documented to assure consistency of consumer experience.”

- Standards for reliability and ease of implementation
- Flexibility to allow innovation

Consensus Principles (revised) (7/11)

“PAD should run from fully customizable ‘sub-clocks,’ with defined hierarchies and carousel templates.”

- Integrated with structured program formats
- Predictable
- Customizable/localizable

Consensus Principles (revised) (8/11)

“PAD should be tightly synchronized with the audio content being delivered.”

- See it when you hear it (not currently implemented)
- Recording industry may have copyright concerns

Consensus Principles (revised) (9/11)

“Rich PAD support should be interoperable on streamlined automotive displays as well as feature-rich home and office receivers.”

- Displayed in autos in an absorbable, non-distracting manner
- Available to fixed receivers with satisfying depth of content

Consensus Principles (revised) (10/11)

“PAD text wrapping (exceeding screen capacity) should immediately initiate scrolling.”

- ‘Broken’ text is annoying and uninformative
- Concerns about message length and delivery in the automotive environment

Consensus Principles (revised) (11/11)

“PAD content should not be overwritten by non-essential functions (numeric representation of volume change).”

- Thoughtful choice of display defaults and hierarchies

Capabilities, limitations and compatibilities

- Catalog structures of numerous data systems
- Identify conflicts, propose solutions
- Compatibility with existing RDS
- Harmonization with RadioText+
- Receiver implementation

Emerging technologies

- Accessibility
 - Radio for the visually impaired
 - Conditional access
- Program guide
 - First step to time shifting

Universal Display

- A means of delivering program-related text content and data for HD Radio broadcasts (and via RadioText+)
- A conduit for providing access to radio programming to large and growing populations
- Maximize the radio listening experience

Emergency capabilities

- Auto-wakeup (radio)
- Alternate station monitoring
- Enhanced message delivery
- Messaging triggers for the hearing impaired

Demonstrations

- PREC/NAB, Apr 2007
 - Integrated creation, delivery and customization
- NAB Radio/APRE, Sept 2007
 - Conditional Access on air
 - Program guide beta
- Consumer Electronic Show, Jan 2008
 - Radio for the hearing-impaired
 - Emergency message delivery



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