

EBU **TECHNICAL**



EBU TECHNICAL's work on digital radio

**Digital Receiver Profile Summit
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Digital systems



DRM+



ISDB-T



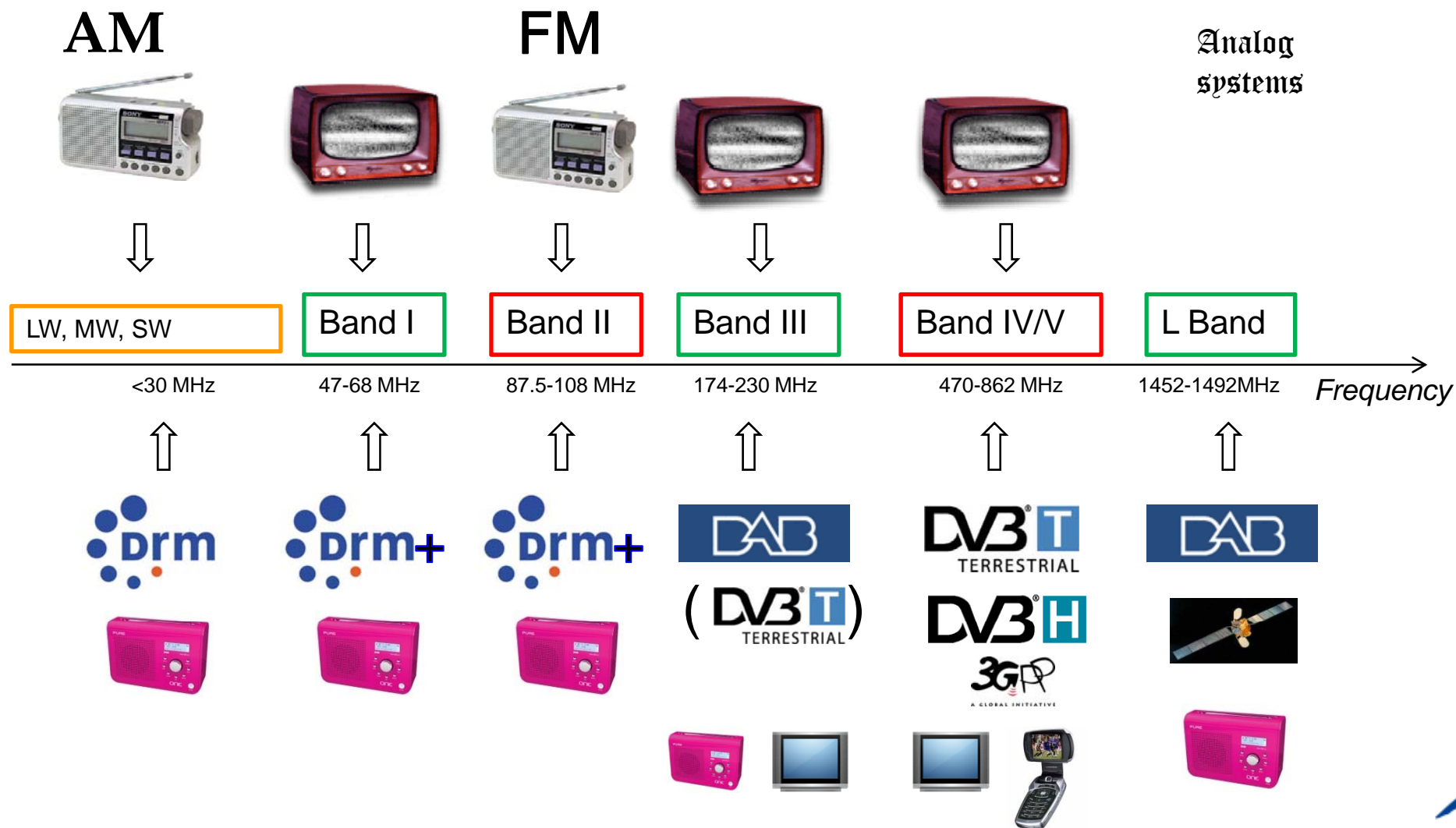
Requirements for primary radio distribution platform



- Spectrum availability
- Efficiency (cost per programme)
 - Coverage objectives: % country/population, audience size, indoor reception
 - Number of programmes / quality
- User friendliness
 - **Free to air** reception, **simplicity** of use/installation, portability, receiving costs, battery life
 - Zapping time, service following
- Multimedia and associated data
 - Pictures, text, interactivity, video
 - Traffic information (TPEG), announcements

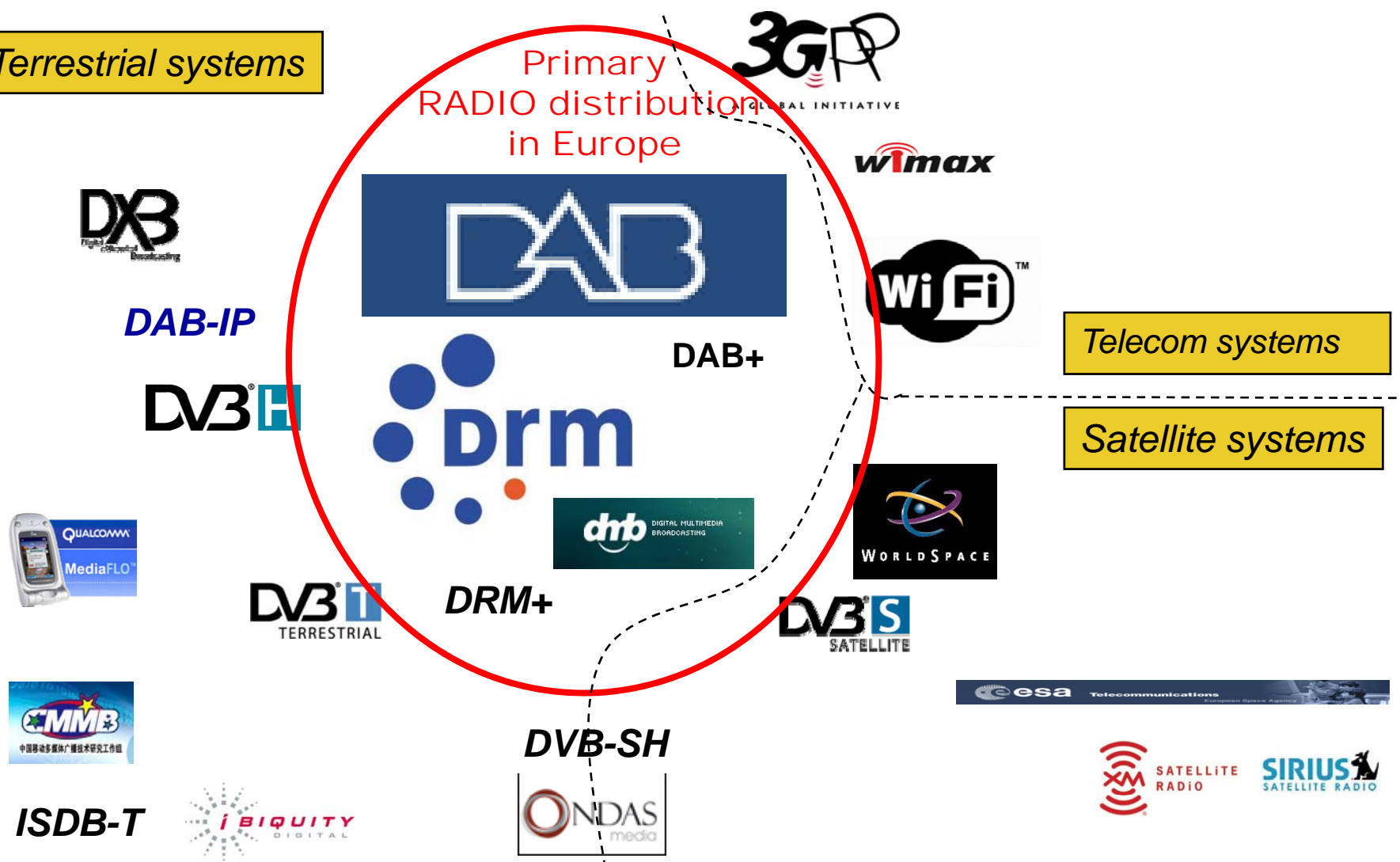


Radio Spectrum for broadcasting



Digital systems

Terrestrial systems

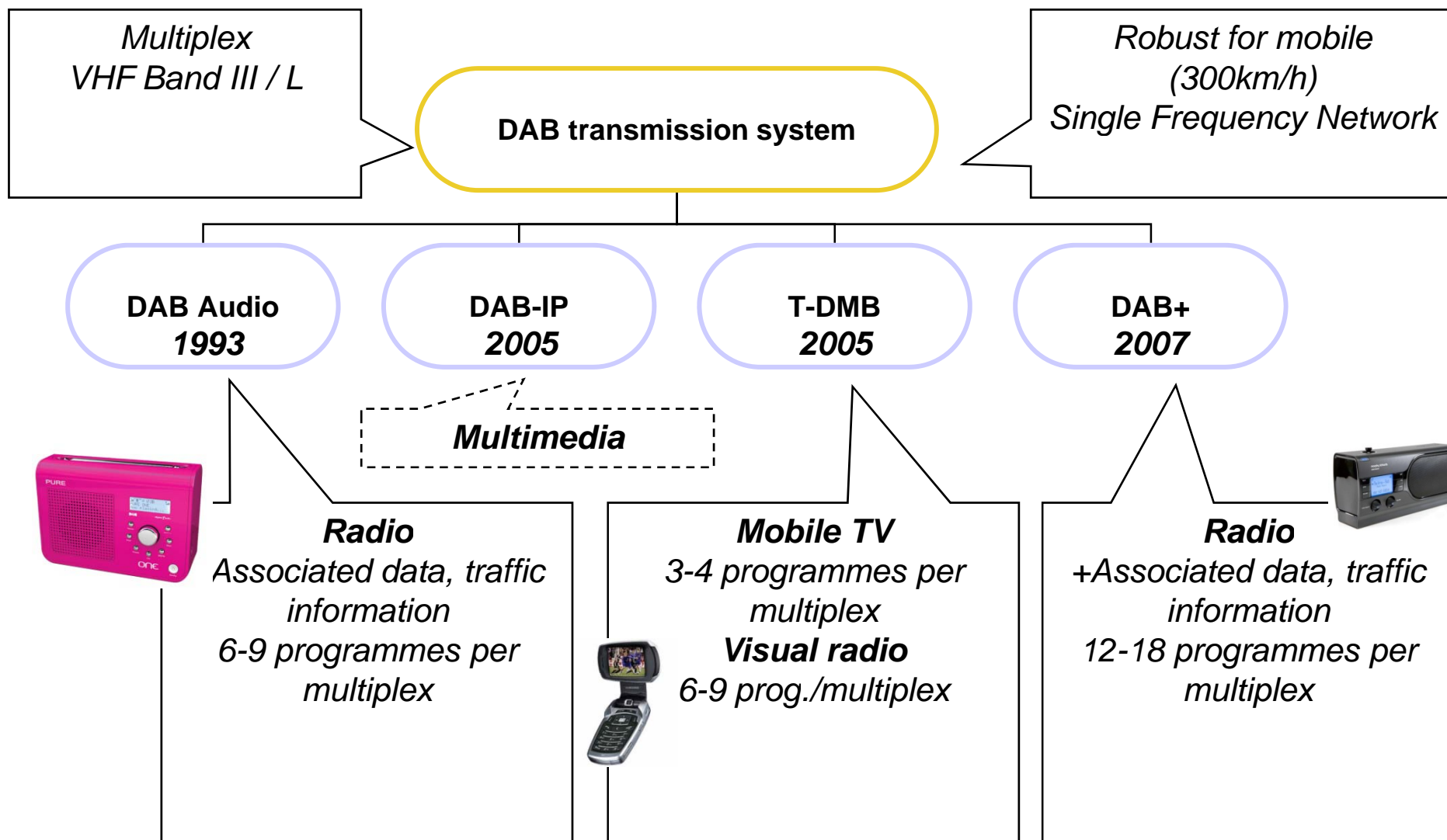


Digital radio systems suitability

- Eureka 147 Family (DAB, DAB+, T-DMB)
 - “Bouquet” (multiplex) of programs, flexible
 - Public and private groups, aggregation of broadcasters
 - Rich content, audio quality
 - National, regional
- *DRM/DRM+*
 - Single program delivery (no multiplex)
 - International broadcasters, local/community broadcasters
 - DRM+: local broadcasting (testing)
- DRM and DAB families share many system functionalities (modulation, audio coding, multimedia)



The DAB family

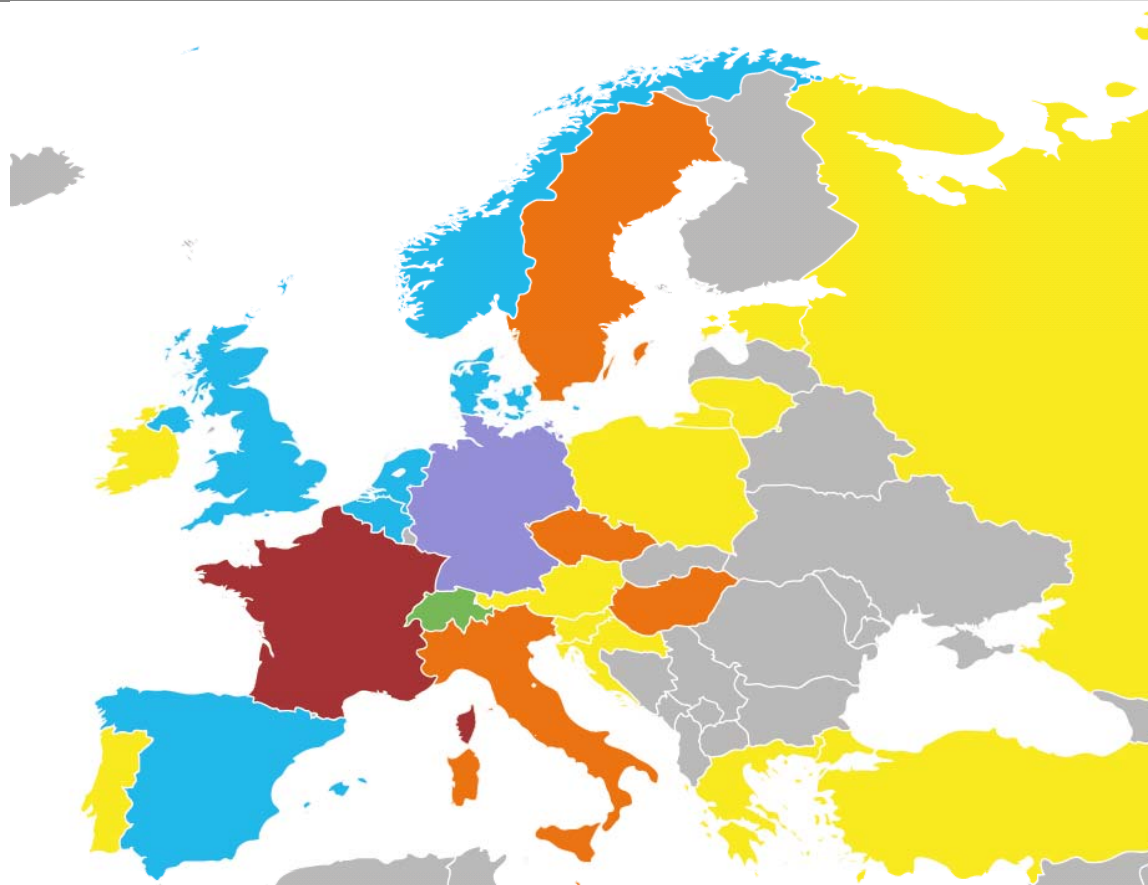


Digital radio multimedia features

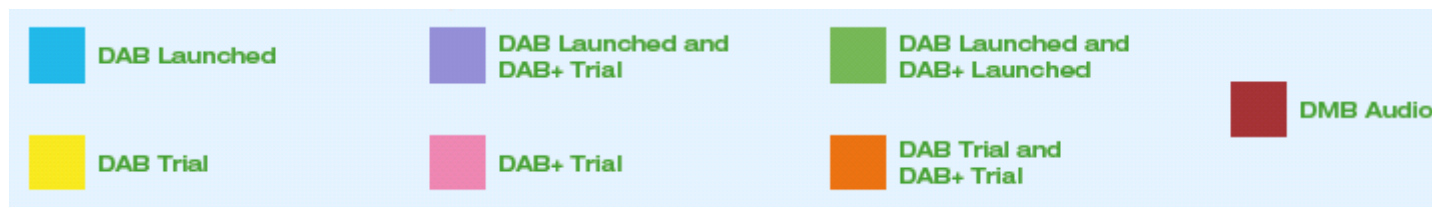
- Text services
 - DLS: Dynamic text
 - Journaline, Intellitext: “Teletext” like service
- Rich content
 - Visual radio, slideshow
 - “Flash” like applications
- Electronic Program Guide
 - Automatic record: podcast like service
- TPEG: Enhanced traffic information
- Filecasting (in development)
 - Podcast application
- Surround sound



DAB/DAB+/T-DMB in Europe



Source: worldddab.org

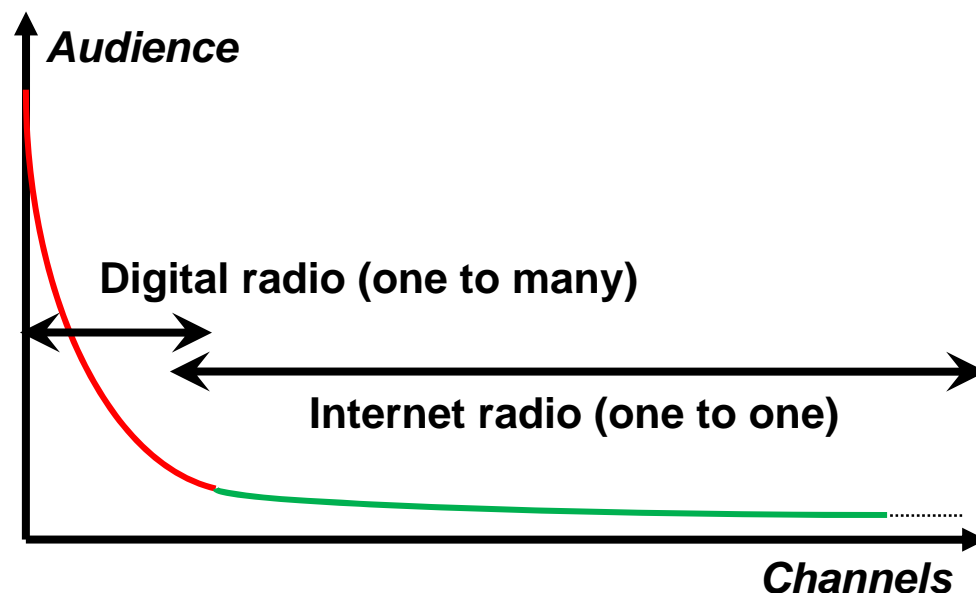


Receiver profiles for Eureka 147

- Digital radio profiles for DAB family in Europe defined by EBU, WorldDMB, EICTA
- Profile 1: Standard radio receiver
 - DAB/DAB+/T-DMB Audio
 - Simple text screen
 - Price from 25€
- Profile 2: Rich media receiver
 - Colour screen
 - Advanced text, Pictures, EPG, BIFS, TPEG
- Profile 3: Advanced multimedia receiver
 - T-DMB video



An hybrid radio future...



- Digital radio for popular programs
 - Efficient delivery through a broadcast (one-to-many) system
- Internet for “niche” programmes and interactivity
- Bring multimedia features from Internet to Digital Radio

Conclusion



- DAB/DAB+/T-DMB (and later DRM/DRM+) as primary distribution platforms
- Harmonization for DAB/DAB+/T-DMB in Europe
 - Offers flexibility for broadcasters
 - Current need: integration in multimedia devices, cars
- DRM/DRM+ interest by some broadcasters
- Future: Alignment with secondary platforms, Internet radio devices
- EBU supports broadcasters
 - Dissemination of information, reports, exchanges
 - Technical project groups
 - Active presence in WorldDMB, DRM consortium, IMDA



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Thank you

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