

DAB+ standards update

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Topics

- Receiver testing
- Text handling
- Hybrid radio
- World DAB Technical Committee current activities

Receiver testing

- For DAB receivers, the ETSI standard TS 103 461 remains the basis of most receiver testing
- It is used as the basis for the Digital Radio UK Tick Mark certification scheme
- It provides functional and performance requirements for DAB receivers
- It provides test methods and success criteria for both core technology (i.e. chips and modules) and for products

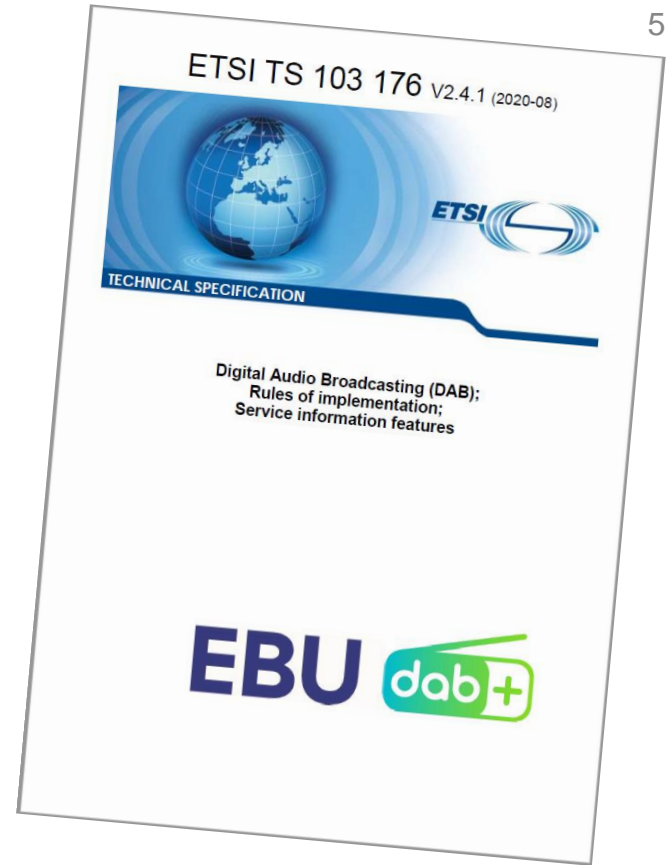


Receiver testing

- Since the original publication, extra requirements have been incorporated to make the specification suited to a much wider geographical area:
 - The regional text profiles concept is integrated into the text
 - As DAB in vehicles is now mandated by the EU in member states through the EECC, the **All Europe** regional profile is specifically mentioned
 - All receivers are tested for correct reaction to emergency alarm announcements
 - Extra service following tests with the Extended Country Code (ECC) are added
- The extra core technology tests ensure that the chip sets and modules used in products will be able to deliver non-Latin text to suitable displays

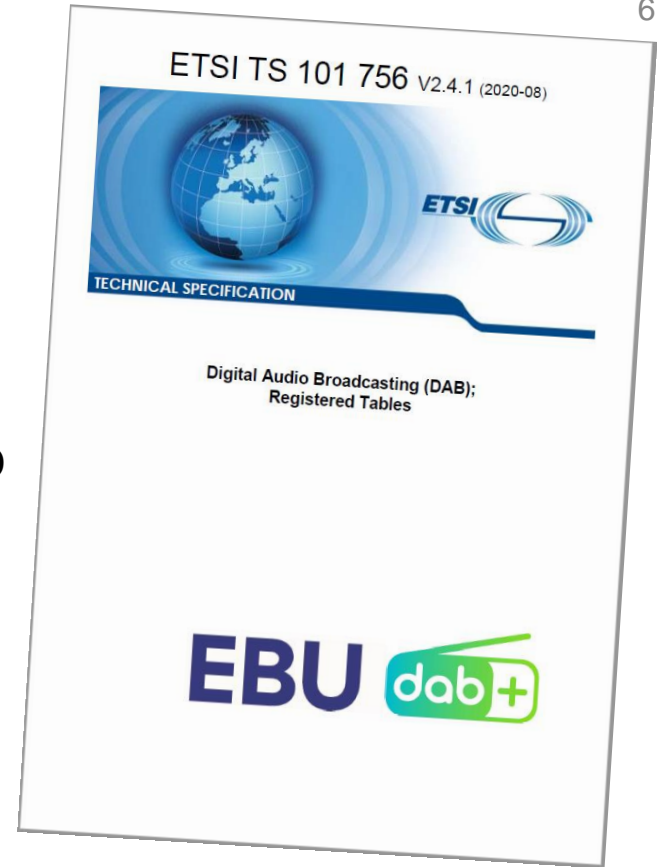
Text handling

- This ETSI specification defines the rules for broadcasters and receiver implementers for complex service information features
 - Service following
 - Announcements
 - Service lists
 - Non-Latin text
- The framework for using non-Latin text provides
 - An signalling field for key complexity indicators so receivers can implement proper presentation
 - The regional profiles concept to define scope and limits for particular markets so that the text broadcasters provide is displayed correctly



Text handling

- The DAB registered tables specification contains all the regional text profiles
 - Four profiles
 - EBU Latin abcdef
 - All Europe abcdef αβγδεζ ЖЩЙЯЮ
 - ASBU جسدضغڱ abcdef
 - Thai ถับปฉรค abcdef
 - Also provided are starburst display glyphs for the Greek and Cyrillic characters in the All Europe regional profile



Hybrid radio

- The Hybrid radio Service and Programme Information (SPI) specification ETSI TS 102 818 has been updated to expand the geolocation capability for IP bearers and add voice control support
 - Broadcasters can specify if IP streaming is allowed or disallowed within a specified area to provide greater control for rights limited content
 - Phonemes and aliases for service names can be provided to allow voice assistants to correctly interpret colloquialisms for radio stations



- The SPI – Service and Programme Information – specification consists of two parts
 - The description in XML – the same for broadcast and IP delivery
 - The binary encoding – for compact broadcast using DAB
- The XML has been extended in the last 5 years, most recently in work performed by RadioDNS
- The Binary encoding (TS 102 371) has not been revised since 2016
 - The TC observed that some aspects of the specification were difficult to interpret
 - The use of the SPI has been growing in importance
 - Some new XML features may also be relevant to broadcast
- The TF will develop a revised draft addressing these issues

- The Steering Board received a request from Digital Radio Germany to assist with the international standardisation for testing receivers capable of responding to emergency warnings delivered over DAB
- The SB has asked the TC to deliver this project
 - The work has some parallels with previous work on turning the UK Tick Mark into an international ETSI standard
 - The TC will define the technical requirements and test methods
 - The German authorities will define any certification scheme they need using the new standard as its technical basis

Thank you



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