Digital Audio Broadcasting
Principles and Applications of DAB, DAB+ and DMB, Third Edition (May, 2009)

Content overview

Chapter 1 Introduction
- The benefits of the DAB system family, as DAB, DAB+ and DMB
- International standardisation activities, projects and platforms for introduction of DAB (WorldDAB)
- Relations to other digital broadcasting systems, such as ADR, DVB, DRM or Web-casting

Chapter 2 System Concept
- Principles and details of transmission procedures, such as OFDM,
- The DAB multiplex using Fast Information Blocks and Common Interleaved Frames
- Details of the Service Information (SI) features, principles of Conditional Access (CA).

Chapter 3 Audio Services and Applications
- Audio coding (bit-rate reduction using MPEG-2 and –4 audio standards, such as Layer II or AAC),
- Half-sampling-rate coding and multichannel audio coding, Quality of service
- Coding schemes for DAB, DAB+ and DMB, Audio bit streams, Programme-associated data (PAD),

Chapter 4 Data Services and Applications
- Data applications and their access
- The Multimedia Object Transfer Protocol (MOT), selected MOT user applications,
- Textual services based on Dynamic Label, Traffic information services, such as TMC or TPEG

Chapter 5 Provision of Services
- Structures of the management process of DAB services and DAB Ensemble structures
- Use of existing, and needs for new infrastructure in the studio, such as editorial systems, data inserter,
- Principles and applications of the DAB Electronic Programme Guide (EPG)
- Audio service aspects (loudness, signal level alignment, level profile)

Chapter 6 Collection and Distribution Networks
- Requirements to the network architecture and the DAB Ensemble multiplexer
- The collection network including the Service Transport Interface (STI)
- The distribution network including its Ensemble Transport Interface (ETI)

Chapter 7 The Broadcast Side
- Introduction to DAB networks and explaining the concept of a single frequency network (SFN).
- Equipment used on the transmitter site to set up SFNs, transmission channel limitations,
- Propagation model used with the DAB system, Planning of networks, coverage evaluation for DAB SFNs.
- Frequency management and frequency allocation for DAB networks

Chapter 8 The Receiving Side
- Normative DAB receiver requirements defined by CENELEC and EACEM,
- Receiver architecture overview, RF front end concepts, integrated circuits,
- Digital baseband processing units such as OFDM and DQPSK, Viterbi decoding, audio decoder.

Chapter 9 Mobile Television and Multimedia
- Standardisation and implementation of video transmission using DAB through WorldDMB and ETSI,
- The MPEG-2 Transport Stream and the protocol stack of DAB-DMB and DAB-IPDC,
- DMB-Radio, performance considerations and application for mobile TV, comparison with DVB-H.

Multiple **Appendices** list special information on basic DAB system requirements and parameters, such as
- DAB parameters for Modes I, II, III and IV
- Frequencies for terrestrial and satellite DAB and DMB transmission world-wide
- System protocol stack for DAB, DAB+ and DMB,

and last but not least
- Hundreds of **References** (standards and related documents) and other literature as well
- An extended **Index**