QUESTION ITU-R 56-3/6

Characteristics of terrestrial digital sound broadcasting systems for
reception by vehicular, portable and fixed receivers

(1993-2006-2016-2017)

The ITU Radiocommunication Assembly,

considering

*a)* that there is an increasing requirement by some countries for suitable means of broadcasting high quality stereo/multi-channel sound to vehicular, portable and fixed receivers;

*b)* that significant progress has been made in technical studies on digital sound broadcasting systems and that some systems have been widely implemented with good success;

*c)* that it has been demonstrated that advanced digital sound broadcasting systems can lead to improved spectrum and power efficiency and immunity to multipath compared with conventional analogue sound broadcasting systems;

*d)* that digital sound broadcasting systems can be designed to allow common signal processing in receivers for various broadcasting bands;

*e)* that digital sound broadcasting systems can be used for national, regional and local terrestrial services;

*f)* that it would be advantageous for a digital sound broadcasting system if a common receiver, capable of receiving terrestrial and satellite services, could be designed;

*g)* that digital sound broadcasting systems may be configured to broadcast programmes with lower or higher bit rates in order to trade sound quality against the number of sound channels;

*h)* that digital sound broadcasting systems are able to provide additional facilities to deliver programme-related and non-programme-related data;

*i)* that some radiofrequency bands are still used for emissions of analogue sound broadcasting services;

*j)* that ITU-R has already studied various aspects of digital sound broadcasting, e.g.: in Recommendations ITU-R BS.774 and ITU-R BS.1114;

*k)* that some Administrations are considering switching off their analogue sound broadcasting services,

noting

that studies on the use of various radiofrequency bands for emission of digital sound broadcasting services are reported in the Final Acts of the CEPT Wiesbaden 1995 planning meeting,

recognizing

*a)* that the World Administrative Radio Conference (Malaga-Torremolinos, 1992) (WARC‑92) asked the former CCIR to undertake as a matter of urgency the technical studies associated with terrestrial digital audio broadcasting;

*b)* that the Regional Radiocommunication Conference (GE-06) has planned some parts of band III in Region 1 and Islamic Republic of Iran for digital sound broadcasting,

decidesthat the following questions should be studied

1 What are the technical characteristics of digital sound broadcasting systems for reception by vehicular, portable and fixed receivers?

2 What are the most suitable VHF/UHF bands, technically, economically and from a sharing and programme capacity point of view, for the implementation of a terrestrial digital sound broadcasting service?

3 What are the system and service requirements for a digital sound broadcasting service?

4 What are the most appropriate channel coding, multiplexing and modulation methods for a digital sound broadcasting service, taking into account the properties of the source coding applied?

5Which approaches can meet the needs of local, regional and national broadcasting in terms of service area and multiplexing?

6 What are the benefits which can be achieved by using hierarchically modulated signals?

7 What are the effects of normal, abnormal and very abnormal propagation, including multipath on digital sound broadcasting systems?

8 What protection ratios are required to prevent mutual interference between different digital sound broadcasting services and other services using the same or adjacent frequency bands?

9 What steps need to be taken to mitigate any issues in the transition from analogue to digital sound broadcasting?

10 What are the necessary planning criteria for national, regional and local area coverage for vehicular, portable and fixed reception?

11 What advantages can be obtained by the combined use of satellite and terrestrial services operating in the same frequency band?

12 What would be the advantages in the use of diversity reception?

13 What, in the light of *considering g)*, would be the tradeoff in terms of the quality and capacity between the digital sound broadcasting systems and the analogue systems being replaced?

further decides

1 that the results of the above studies should be included in (a) Report(s) and/or (a) Recommendation(s);

2 that the above studies should be completed by 2023.

Category: S2