QUESTION ITU-R 132-5/6

Digital terrestrial television broadcasting planning

(2010-2011-2011-2015-2017-2019)

The ITU Radiocommunication Assembly,

considering

*a)* that many administrations have already introduced, and others are introducing, Digital Terrestrial Television Broadcasting (DTTB) services in VHF (Band III) and/or UHF (Bands IV/V) bands;

*b)* that experience gained through the implementation of DTTB services will be useful in refining the assumptions and techniques to be applied in the planning and implementation of DTTB services;

*c)* that planning procedures are being developed to facilitate the introduction of these new systems in the existing radio frequency environment;

*d)* that these planning procedures are based on the use of propagation prediction methods and empirically derived protection ratios;

*e)* the characteristics of television receiving installations, receivers and antennas are the important elements in frequency planning;

*f)* that administrations and/or broadcasters need to verify and validate the results from the process of planning of digital terrestrial television, sound and multimedia broadcasting networks,

decides that the following Questions should be studied

1 What are the frequency planning parameters for such services, including but not limited to:

– minimum field strengths;

– implications of modulation and emission methods;

– receiving and transmitting antenna characteristics;

– implications of using diversity transmission and reception methods;

– location correction values;

– time variability values;

– single frequency networks;

– speed ranges;

– environmental noise and its impact on digital terrestrial TV reception;

– effect of wet foliage on digital terrestrial TV reception;

– effect of wind turbine farms and airplane flutter on digital terrestrial TV reception;

– building penetration loss;

– indoor location variations?

2 What is the likely impact on matters related to the planning of broadcasting networks for terrestrial television broadcasting in the migration from existing[[1]](#footnote-1) digital television modulation parameters to new and more spectrally efficient[[2]](#footnote-2) modulation parameters?

3 What protection ratios are required when two or more digital transmitters of the same system, digital television and multimedia transmitters of different systems, or analogue and digital television transmitters are operating:

– in the same channel;

– in adjacent channels;

– with overlapping channels;

– in other potential interference relationships (e.g. image channel)?

4 What receiver and antenna system characteristics should be used for frequency planning with respect to more efficient use of the frequency spectrum (e.g. selectivity, noise figure, etc.)?

5 What are the protection ratios needed to protect television broadcasting services from other services sharing the bands or operating in adjacent bands?

6 What techniques can be used to mitigate interference?

7What are acceptable durations of outages due to local short-term interference to DTTB services?

8 What are the technical bases required for planning which lead to efficient utilization of the VHF and UHF bands for terrestrial television services?

9 What are the characteristic multipath conditions that need to be taken into account in the planning of such services?

10What time availability percentages can be practically achieved in DTTB service implementation and what margins in planning parameters are required to achieve these time availability percentages?

11 What planning criteria can be optimized to facilitate the implementation of terrestrial digital broadcasting, taking into account existing services?

12 What are the characteristics of the mobile multipath channel that need to be taken into account in the use of mobile reception, at different speeds?

13 What are the characteristics of the multipath channel that need to be taken into account in the use of hand-held reception, at different speeds?

14 What radio-frequency verification methods are appropriate for the verification and validation of the digital television and sound broadcasting planning processes?

further decides

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

2 that the above studies should be completed by 2023.

Category: S3

1. For example DVB-T (ITU-R DTTB System B). [↑](#footnote-ref-1)
2. For example DVB-T2. [↑](#footnote-ref-2)