

## QUESTION ITU-R 132/6

### Digital terrestrial television broadcasting planning\*

(2010)

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,

*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?

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\* This Question deals with studies related to the implementation of digital terrestrial broadcasting services, which do not impact the GE06 Agreement and Plan.

- 2 What is the likely impact on matters related to the planning of broadcasting networks for terrestrial television broadcasting in the migration from existing<sup>1</sup> digital television modulation parameters to new and more spectrally efficient<sup>2</sup> 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 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?
- 7 What are the technical bases required for planning which lead to efficient utilization of the VHF and UHF bands for terrestrial television services?
- 8 What are the characteristic multipath conditions that need to be taken into account in the planning of such services?
- 9 What technical or planning criteria can be optimized to facilitate the implementation of terrestrial digital broadcasting, taking into account existing services?
- 10 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?
- 11 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?
- 12 What are the appropriate methods to multiplex the required signals (including vision, sound, data, etc.) into the channel?
- 13 What are the appropriate methods for error protection?
- 14 What are the appropriate modulation and emission methods and their relevant parameters, for the broadcasting of digitally encoded TV signals in terrestrial channels?
- 15 What are the appropriate strategies to introduce and implement digital terrestrial TV broadcast services, taking account of existing terrestrial broadcast services?

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<sup>1</sup> For example DVB-T (ITU-R DTTB System B).

<sup>2</sup> For example DVB-T2.