

QUESTION ITU-R 4-2/6

Planning parameters for digital television broadcasting using terrestrial channels

(1993-1994-1997-2001-2004)

The ITU Radiocommunication Assembly,

considering

- a) the progress being made in bit rate reduction techniques;
- b) that the quality achievable with digital emission systems is improving;
- c) that different countries can use different digital and analogue television systems;
- d) that certain digital television broadcasting systems have proven the capability to be used for mobile reception;
- e) that reception of digital television with small hand held TV receivers is feasible,

decides that the following Question 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;
- location correction values;
- single frequency networks;
- speed ranges;
- building penetration loss;
- indoor location variations?

2 What protection ratios are required when two or more digital transmitters of the same system, digital 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);
- with digital signals multiplexed in the television signal?

- 3 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.)?
- 4 What are the protection ratios needed to protect broadcasting services from other services sharing the bands or operating in adjacent bands?
- 5 What techniques (e.g. frequency offset, synchronous operation) can be used to reduce the necessary protection ratios from interference?
- 6 What are the technical bases required for planning which lead to efficient utilization of bands 8 (VHF), 9 (UHF) and 10/11 (SHF) for terrestrial television services?
- 7 What type of modulation should be recommended for terrestrial television broadcasting in band 10 and band 11?
- 8 What are the radio parameters, including the system characteristics, propagation factors and protection ratios, that are necessary for planning and sharing purposes in bands 10/11 (SHF)?
- 9 What are the characteristic multipath conditions that need to be taken into account in the planning of such services?
- 10 What technical or planning criteria can be optimized to facilitate the implementation of terrestrial digital broadcasting, taking into account existing services?
- 11 What are the characteristics of the mobile multipath channel that are needed to be taken into account in the use of mobile reception, at different speeds?
- 12 What are the characteristics of the multipath channel that are needed to be taken into account in the use of hand-held reception, at different speeds?

further decides

- 1 that the results of the above studies should be included in (a) Recommendation(s);
- 2 that the above studies should be completed by 2006.

Category: S1