QUESTION ITU-R 292/4

UHDTV satellite broadcasting systems

(2015)

The ITU Radiocommunication Assembly,

considering

*a)* that preferences of television viewers have diversified, including high-resolution video images;

*b)* that means for improving the flexibility and efficiency of the frequency spectrum are under constant investigation;

*c)* that an increase in the transmission capacity is required in order to realize ultra-high definition television (UHDTV) satellite broadcasting in a single satellite transponder;

*d)* that there have been significant developments in efficient modulation and channel coding techniques, including but not limited to formats such as amplitude phase shift keying (APSK) and low density parity check (LDPC) codes;

*e)* that advances in video and audio compression techniques that can meet the UHDTV format have shown the practicality of transmitting more than one UHDTV service per satellite transponder;

*f)* that UHDTV satellite broadcasting can accommodate both MPEG transport stream packets and IP packets;

*g)* that flexible transmission and multiplexing configurations enable integration of UHDTV satellite broadcasting into the IP network;

*h)* that the availability requirements of these different services, including UHDTV, can vary in accordance with their application,

noting

that Recommendation ITU-R BT.2020 - Parameter values for ultra-high definition television systems for production and international programme exchange, specifies UHDTV image system parameters,

decides that the following Questions should be studied

1 What are suitable and/or optimal modulation and channel coding techniques for UHDTV satellite broadcasting systems, what are practical channel transmission rates (capacity), and what performance is achievable (e.g. BER as a function of *C*/*N*, *C*/*I*, *SNR* and *Eb/N0*)?

2 What are appropriate availability performance requirements and bit error rate requirements for the transmission of these UHDTV satellite broadcasting systems?

3 What are appropriate error‑control techniques and/or error‑concealment processes that optimize quality, bandwidth and cost considerations?

4 What protection ratios are required between two digital signals and between a digital signal and other types of signals that are likely to be transmitted in the band allocated to the broadcasting‑satellite service?

5 What are the practical schemes that need to be taken into account in satellite broadcasting systems when encountering rain attenuation, which differs by climatic zones?

6 What are the practical schemes when satellite transponder nonlinearity causing signal distortion is encountered?

further decides

1that the results of the above studies should be included in appropriate Recommendations and/or Reports;

2 that the above studies should be completed by 2025.

Category: S1