

QUESTION ITU-R 287/4\*,\*\*

**Technical and operational characteristics for packet network transmission in mobile-satellite services**

(2002)

The ITU Radiocommunication Assembly,

*considering*

- a) that recent progress of IP-based networks is so remarkable in almost every area of telecommunications that some new applications in mobile-satellite services (MSS) are also intended for packet data transmission, in particular Internet Protocol (IP) based networks in the MSS;
- b) that the studies for packet data transmission will contribute to the smooth introduction of such new applications in MSS and will encourage development of new systems;
- c) that bearer circuit availability requirements may not be the same for different types and directions of transmission;
- d) that packet data transmission techniques often attain high quality and reliability by taking advantage of unique characteristics compared to others;
- e) that with respect to packet data transmission, performance objectives may be less stringent if it ensures the high quality and reliability with its error control and retransmission by high level protocols;
- f) that transmission characteristics, including not only the physical layer of digital satellite links but also higher layers containing error control and retransmission protocols, should be considered;
- g) that packet data transmission includes delay, delay variation and error sensitive traffic;
- h) that transmission models and performance objectives for packet data transmission are needed in addition to those for the existing fixed networks in G-series, I-series, X-series and Y-series Recommendations of ITU-T;
- j) that availability of packet-switched systems may be discussed in a different way from those of circuit-switched systems;
- k) that transmission characteristics and performance objectives may be described in different ways for different types of transmission schemes for bearer circuits. For example, a dedicated one for a single user and a shared one for multiple users are classified by the manner in which the time slots are utilized;
- l) that efficient packet transmission is beneficial because spectrum allocated to MSS is limited,

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\* This Question should be brought to the attention of ITU-T SGs 2, 12, 13, 17 (former SG 7) and ITU-R WP 4B.

\*\* Former Question ITU-R 233/8.

*decides* that the following Question should be studied

- 1 What is an appropriate transmission model (or hypothetical reference connection) to define technical and operational characteristics of packet data transmission in the MSS?
- 2 What are the technical parameters which are suitable to characterize packet data transmission, in particular in IP networks in MSS systems?
- 3 What are the operational requirements specific to packet data transmission, in particular in IP networks in MSS systems?
- 4 What are suitable characteristics for packet data applications, in particular in IP networks in MSS systems?
- 5 How can performance objectives, including availability requirements and QoS (Quality of Service), be defined for MSS systems?
- 6 What are appropriate methodologies to derive them?

*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 before 2005.