



Radiocommunication Bureau (BR)

Administrative Circular
CACE/853

23 January 2018

To Administrations of Member States of the ITU, Radiocommunication Sector Members, ITU-R Associates participating in the work of the Radiocommunication Study Group 4 and ITU Academia

Subject: Radiocommunication Study Group 4 (Satellite Services)

- Approval of 1 revised ITU-R Question**
- Suppression of 1 ITU-R Question**

By Administrative Circular CACE/841 of 15 November 2017, 1 draft revised ITU-R Question was submitted for approval by correspondence in accordance with Resolution ITU-R 1-7 (§ A2.5.2.3). In addition, the Study Group proposed the suppression of 1 ITU-R Question.

The conditions governing this procedure were met on 15 January 2018.

The text of the approved Question is attached for your reference in Annex 1 and will be published by the ITU. The suppressed ITU-R Question is indicated in Annex 2.

A handwritten signature in black ink, appearing to read 'FRANCIS RANCY'.

François Rancy
Director

Annexes: 2

Distribution:

- Administrations of Member States of the ITU and Radiocommunication Sector Members participating in the work of Radiocommunication Study Group 4
- ITU-R Associates participating in the work of Radiocommunication Study Group 4
- ITU Academia
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups
- Chairman and Vice-Chairmen of the Conference Preparatory Meeting
- Members of the Radio Regulations Board
- Secretary-General of the ITU, Director of the Telecommunication Standardization Bureau, Director of the Telecommunication Development Bureau

Annex 1

QUESTION ITU-R 277-1/4

Performance objectives for digital fixed-satellite and mobile-satellite services with variable bit-rate paths

(2009-2018)

The ITU Radiocommunication Assembly,

considering

- a)* that service requirements are constantly evolving and new services are rapidly emerging which may have an impact on satellite link performance requirements;
- b)* that most of the recent fixed-satellite service (FSS) and mobile-satellite service (MSS) systems are adopting adaptive transmission techniques in order to compensate for time-varying propagation conditions, including the effects of rain attenuation and multipath fading, thereby satisfying error performance objectives consistently;
- c)* that the performance objectives of FSS systems defined in Recommendation ITU-R S.1062 may be different from those required by the satellite systems with variable bit-rate paths, due to adaptive transmission schemes;
- d)* that fade margins in the bands typically used for service links (forward/return) to mobile terminals can be substantially different from those in bands typically used for feeder links and this may result in different performance objectives for these two types of links;
- e)* that the use of error correction coding techniques that approach the theoretical Shannon capacity limit, with soft iterative decoding methods, in modern satellite systems can result in satisfactory operation at reduced levels of carrier-to-noise plus interference ratio ($C/(N+I)$), but can also result in different burst decoding error characteristics compared to the conventional error correction coding techniques;
- f)* that the treatment of performance objectives for safety related services in bands allocated to the MSS could be different than for non-safety related services in those bands;
- g)* that with respect to message transfer time (end-to-end), performance objectives for store-and-forward services may be less stringent than those for real-time services;
- h)* that performance objectives for mobile-satellite services may be influenced by those of the terrestrial mobile service where the satellite service is used to complement such services;
- i)* that Recommendations ITU-R SM.1751 and ITU-R M.1188 introduce a link margin metric which can be applied as an “additional methodology for the evaluation of the effect of interference between radiocommunication networks”, which may be used in the evaluation of performance and the determination of performance objective of non-GSO, TDMA-based, MSS systems serving handheld equipment of users in motion,

decides that the following Questions should be studied

For each of the various digital FSS and MSS systems:

- 1 What are the bit error performance objectives and preferable bit error performance distributions in the appropriate hypothetical reference digital path?
- 2 What is the preferred method for correlation of bit error performance with propagation characteristics?
- 3 What are the methods available to the satellite system designer to accommodate service requirements with regard to satellite system attributes such as propagation impairments, burst-error characteristics and delay?
- 4 What performance parameters, if any, should be defined in order to take account of existing fixed-satellite service performance objectives, bearing in mind that interference levels in MSS systems are significantly different than those for FSS systems?
- 5 How should the performance objective of § 1 be allocated amongst feeder links and service links?
- 6 What additional methodologies should be developed to evaluate performance and what are the performance objectives for non-GSO MSS systems, which serve handheld equipment of users in motion?

further decides

- 1 that the results of the above studies should be included in appropriate Recommendations and/or Reports;
- 2 that the above studies should be completed by 2020.

Category: S2

Annex 2

Suppressed ITU-R Question

Question ITU-R	Title
75-4/4	Performance objectives of international digital transmission links in the fixed-satellite and mobile-satellite services
