

QUESTION ITU-R 277/4*

Performance objectives for digital mobile-satellite services

(2009)

The ITU Radiocommunication Assembly,

considering

- a) that the total bit error ratio in the hypothetical reference digital path should not be such as would appreciably affect the transmission of information;
- b) that the bit error ratio will vary with time due to the effects of varying propagation conditions, including the effects of multipath fading;
- c) that the extent to which fading can affect various types of mobile terminals cannot be determined fully until more experimental data are available;
- 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 in mobile-satellite service (MSS) transmissions can result in satisfactory operation at reduced levels of carrier-to-noise plus interference ratio ($C/(N+I)$);
- 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;
- j) 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,

* Replaces former Question ITU-R 112/8.

decides that the following Questions should be studied

For each of the various digital mobile-satellite services:

- 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 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?
- 4 How should the performance objective of § 1 be allocated amongst feeder links and service links?
- 5 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 Reports and/or Recommendations;
- 2 that the above studies should be completed before 2012.

Category: S2