



Radiocommunication Bureau

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**Administrative Circular
CACE/497**

25 January 2010

**To Administrations of Member States of the ITU,
Radiocommunication Sector Members, ITU-R Associates
participating in the work of Radiocommunication Study Group 4
and the Special Committee on Regulatory/Procedural Matters**

**Subject: Radiocommunication Study Group 4
– Approval of 1 revised ITU-R Question**

By Administrative Circular CAR/283 of 7 October 2009, 1 draft revised ITU-R Question was submitted for approval by correspondence in accordance with Resolution ITU-R 1-5 (§ 3.4).

The conditions governing this procedure were met on 7 January 2010.

The text of the approved Question is attached for your reference (Annex) and will be published in [Revision 1 to Document 4/1](#) which contains the ITU-R Questions approved by the 2007 Radiocommunication Assembly and assigned to Radiocommunication Study Group 4.

Valery Timofeev
Director, Radiocommunication Bureau

Annex: 1

Distribution:

- Administrations of Member States and Radiocommunication Sector Members
- ITU-R Associates in the work of Radiocommunication Study Group 4
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups and Special Committee on Regulatory/Procedural Matters
- 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

QUESTION ITU-R 83-6/4*

Efficient use of the radio spectrum and frequency sharing within the mobile-satellite service

(1988-1990-1992-1993-2002-2006-2010)

The ITU Radiocommunication Assembly,

considering

- a) that there is a need for studies to be carried out in the ITU-R to establish guidelines for sharing within the mobile-satellite service (MSS);
- b) that WARC-92 and subsequent WRCs adopted new MSS allocations;
- c) that work is being carried out to develop techniques which can improve spectrum utilization;
- d) that there are shared frequency bands allocated to different MSS and other services;
- e) that the operating and technical characteristics of a system supporting the MSS may differ from those applicable specifically to the aeronautical mobile-satellite service, land mobile-satellite service or maritime mobile-satellite service;
- f) that the operating characteristics of mobile earth stations may require different coordination measures from those used for the fixed-satellite service;
- g) that non-geostationary satellite networks/systems implementing these MSS allocations may have different constellations, with different altitudes and different inclination angles;
- h) that there are Earth-to-space and space-to-Earth MSS allocations in the range 1 613.8-1 626.5 MHz;
- j) that use of dual polarization at the same frequency by MSS systems can improve orbit/spectrum utilization efficiency,

decides that the following Questions should be studied

- 1** What are the preferred frequency bands, from a technical and operational point of view, for satellite-to-mobile earth station links and mobile earth station-to-satellite links within those frequency bands already allocated to the MSS?
- 2** What are the advantages and disadvantages of techniques which facilitate improvement of spectrum utilization e.g. low rate voice coding, different modulation techniques, etc.?
- 3** What is the feasibility of intersystem and intrasystem frequency sharing in the case of mobile-satellite systems, and what sharing criteria are needed for frequency coordination?

* This Question should be brought to the attention of Radiocommunication Study Groups 5 and 7.

- 4** What are the more suitable spot beam system techniques which provide for both flexible frequency and flexible power distribution to satellite beams while providing for efficient use of the spectrum allocated to the MSS?
- 5** What are the practical strategies for achieving efficient use of the geostationary orbit and frequencies allocated to the MSS, recognizing that some networks/systems will be optimized for regional coverage and some will be optimized for global coverage?
- 6** What are the practical strategies for efficient spectrum use and reuse by non-geostationary satellite systems?
- 7** What is the feasibility of frequency sharing between mobile-satellite systems which use non-geostationary orbits with systems which use the geostationary orbit?
- 8** What mechanisms can be employed to ensure efficient use of the geostationary orbit when non-geostationary systems are implemented in the same frequency bands?
- 9** What mechanisms can be employed to ensure efficient use of spectrum by non-geostationary systems when geostationary systems are implemented in the same frequency bands?
- 10** What are the coordination methods and the necessary orbital data relating to non-geostationary-satellite systems?
- 11** What are the interference mechanisms, calculation methods and possibilities and technical solutions that are available to permit bi-directional use of the 1 613.8-1 626.5 MHz band?
- 12** What polarization schemes can be used by MSS systems to improve orbit/spectrum utilization efficiency?

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 2011.

Category: S1