



ITUWRC

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Dubai, United Arab Emirates

Radiocommunication Bureau (BR)

Administrative Circular
CACE/1070

19 July 2023

**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)**

- **Proposed approval of 1 draft revised ITU-R Question**
- **Proposed suppression of 1 ITU-R Question**

At the meeting of Radiocommunication Study Group 4 held on 7 July 2023, 1 draft revised ITU-R Question was adopted according to Resolution ITU-R 1-8 (§ A2.5.2.2) and it was agreed to apply the procedure of Resolution ITU-R 1-8 (see § A2.5.2.3) for approval of Questions in the interval between Radiocommunication Assemblies. The text of the draft ITU-R Question is attached for your reference in Annex 1. Any Member State raising an objection to the approval of a draft Question is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

Furthermore, the Study Group proposed the suppression of 1 ITU-R Question in accordance with Resolution ITU-R 1-8 (§ A2.5.3). The ITU-R Question proposed for suppression is indicated in Annex 2. Any Member State who objects to the suppression of an ITU-R Question is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

Having regard to the provisions of § A2.5.2.3 of Resolution ITU-R 1-8, Member States are requested to inform the Secretariat (brsgd@itu.int) by 19 September 2023, whether they approve or do not approve the proposals above.

After the above-mentioned deadline, the results of this consultation will be announced in an Administrative Circular and the approved Question will be published as soon as practicable (see: <http://www.itu.int/ITU-R/go/que-rsg4/en>).

Mario Maniewicz
Director

Annexes: 2

- 1 draft revised ITU-R Question
- Proposed suppression of 1 ITU-R Question

Annex 1

(Document [4/80](#))

DRAFT REVISION OF QUESTION ITU-R 218-1/4

On-board processing in mobile-satellite service and fixed-satellite service systems

(1993-1995-202X)

The ITU Radiocommunication Assembly,

considering

- a)* that satellite systems in the fixed-satellite service (FSS) utilizing various degrees of digital baseband on-board processing (OBP) have been launched and are under development by a number of administrations, both for GSO and non-GSO (e.g. low-Earth orbit (LEO)) operation;
- b)* that such systems are intended to carry both synchronous and asynchronous digital information streams of various rates;
- c)* that such information streams could consist of various types of traffic, extending from relatively low-bit rate traffic (e.g. for VSATs) up to high density FSS, and Internet Protocol (IP) packet services;
- d)* that GSO satellite networks or non-GSO systems with digital OBP may support various levels of functionalities for satellite radio access networks, satellite core networks and applications and thus they may be a part of candidate system architectures for delivering the satellite component of International Mobile Telecommunication (IMT) services using the MSS, and the detailed technical specification is under development;
- e)* that such protocols and techniques may be highly sensitive to the use of OBP and that satellite/terrestrial integration with respect to various interworking and interconnection scenarios may be affected by certain on-board processing functions;
- f)* that global system(s) consisting a large number of OBP satellites in LEO and using intersatellite links (ISLs) are under development for the fixed-satellite service and mobile-satellite service, and that such system(s) raise new and fundamentally unexplored system and networking issues concerning performance and availability, latency, routing and delay (both fixed and variable) timing, synchronization, mobility management, multi connectivity, satellite edge computing, local data switching, store and forward, and congestion control;

g) that digital performance is characterized in Recommendation ITU-R S.1062 for systems providing constant bit rate applications operating at frequencies below 15 GHz, and a method for the determination of performance objectives for satellite networks/systems using adaptive coding and modulation as specified in Recommendation ITU-R S.2131;

h) that OBP can provide enhanced performance, flexibility, services and spectrum efficiency,

decides that the following Questions should be studied

1 What specific network and traffic parameters are potentially uniquely affected by the use of digital baseband OBP?

2 What specific network and traffic parameters are potentially uniquely affected by digital traffic routing through a potentially large number of LEO satellites using both OBP and ISLs?

3 What general OBP system characteristics might result in incompatibilities at the satellite subnetwork interface (such as signalling, queuing and processing delays, synchronization, routing, reliability and performance)?

4 What are the specific OBP system functional characteristics required to assure conformance with relevant ITU performance requirements, and to achieve an efficient utilization of satellite radio frequency assignments and orbital locations?

5 Are the existing performance objectives specified in Recommendation ITU-R S.1062 and the method specified in Recommendation ITU-R S.2131 valid and applicable for satellite networks/systems using OBP, and if they are not, how must the performance requirements be specified to make them applicable?

6 What existing and developmental ITU Recommendations might limit or otherwise impair the use of OBP systems in the FSS or MSS?

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 2027.

Category: S2

Annex 2

Proposed suppression of ITU-R Question

(Source: Document [4/94](#), § 3.8)

Question ITU-R	Title
244/4	Sharing between feeder links of the mobile-satellite (non-geostationary) service in the band 5 091-5 250 MHz and the aeronautical radionavigation service in the band 5 000-5 250 MHz
