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Radiocommunication Bureau (BR)

Administrative Circular
CACE/1069

20 July 2023

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

Subject: **Radiocommunication Study Group 4 (Satellite services)**

- **Proposed adoption of 2 draft new and 1 draft revised ITU-R Recommendations and their simultaneous approval by correspondence in accordance with § A2.6.2.4 of Resolution ITU-R 1-8 (Procedure for the simultaneous adoption and approval by correspondence)**
- **Proposed suppression of 1 ITU-R Recommendation**

At the meeting of Radiocommunication Study Group 4, held on 7 July 2023, the Study Group decided to seek adoption of 2 draft new and 1 draft revised ITU-R Recommendations by correspondence (§ A2.6.2 of Resolution ITU-R 1-8) and further decided to apply the procedure for simultaneous adoption and approval by correspondence (PSAA, § A2.6.2.4 of Resolution ITU-R 1-8). The titles and summaries of the draft Recommendations are given in Annex 1. Any Member State raising an objection to the adoption of a draft Recommendation is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

The consideration period shall extend for 2 months ending on 20 September 2023. If within this period no objections are received from Member States, the draft Recommendations shall be considered to be adopted by Study Group 4. Furthermore, since the PSAA procedure has been followed, the draft Recommendations shall also be considered as approved.

In addition, the Study Group proposed the suppression of 1 Recommendation listed in Annex 2 in accordance with Resolution ITU-R 1-8 (§ A2.6.3). Any Member State who objects to the suppression of a Recommendation is requested to inform the Director and the Chairman of the Study Group of the reasons for the objection.

The consideration period shall extend for 2 months ending on 20 September 2023. If within this period no objections to the proposed suppression are received from Member States, the Recommendation shall be considered to be suppressed.

After the above-mentioned deadline, the results of the above procedures will be announced in an Administrative Circular and the approved Recommendations will be published as soon as practicable (see <http://www.itu.int/pub/R-REC>).

Any ITU member organization aware of a patent held by itself or others which may fully or partly cover elements of the draft Recommendations mentioned in this letter is requested to disclose such information to the Secretariat as soon as possible. The Common Patent Policy for ITU-T/ITU-R/ISO/IEC is available at <http://www.itu.int/en/ITU-T/ipr/Pages/policy.aspx>.

Mario Maniewicz
Director

Annex 1: Titles and summaries of the draft Recommendations

Annex 2: Recommendation proposed for suppression

Documents: Documents 4/91, 4/92(Rev.1) and 4/93(Rev.1)

These documents are available in electronic format at: <https://www.itu.int/md/R19-SG04-C/en>

Annex 1

Titles and summaries of the draft ITU-R Recommendations

Draft new Recommendation ITU-R S.[QV-METH-REF-LINKS]

Doc. 4/91

Procedures for the evaluation of interference from any non-GSO system into a global set of the generic GSO reference links in the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space)

This Recommendation provides procedures for assessment of compliance for any non-GSO system with No. **22.5L** of the Radio Regulations in order to ensure the protection of GSO satellite networks in the frequency bands 37.5-39.5 GHz (space-to-Earth), 39.5-42.5 GHz (space-to-Earth), 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space).

Draft new Recommendation ITU-R S.[METHOD]

Doc. 4/93(Rev.1)

Methodology for examining the compliance of an aeronautical earth station in motion (A-ESIM) communicating with geostationary space stations in the fixed-satellite service in the 27.5-29.5 GHz band with a set of pre-established pfd limits on the Earth's surface

This Recommendation provides a methodology for use by the Radiocommunication Bureau of ITU to conduct examination of the characteristics of an aeronautical earth station in motion (A-ESIM) operating with geostationary satellite networks with respect to conformity with power flux-density limits specified in Part II, Annex 3 of Resolution **169 (WRC-19)** of the Radio Regulations.

Draft revision of Recommendation ITU-R S.1503-3

Doc. 4/92(Rev.1)

Functional description to be used in developing software tools for determining conformity of non-geostationary-satellite orbit fixed-satellite service systems or networks with limits contained in Article 22 of the Radio Regulations

Recommendation [ITU-R S.1503-3](#) defines a methodology to be used to determine conformity of a non-geostationary-orbit (non-GSO) satellite system in the fixed-satellite service (FSS) with the equivalent power flux-density (epfd) limits contained in Article **22** of the Radio Regulations (RR). This methodology computes the epfd of a non-GSO satellite system into a GSO satellite network by propagating the position of the non-GSO satellites over time and aggregating the epfd from/to certain non-GSO satellites at each time step. Compliance with the epfd limits in RR Article **22** is then determined by comparing the cumulative density function (CDF) of the computed epfd samples to the CDF corresponding to the relevant epfd limits.

Working Party 4A has been working on a revision to Recommendation ITU-R S.1503-3 and has identified potential changes that would more accurately model the capabilities and operations of non-GSO systems and improve the text to ensure consistent definition and use of various terms.

This proposed revision to Recommendation ITU-R S.1503-3 contains the following changes:

- Minimum separation angle between co-frequency non-GSO communication links at non-GSO ES and satellite.
- Maximum number of co-frequency non-GSO ES that can be tracked by a non-GSO satellite.
- Definition of an equivalent isotropically radiated power (e.i.r.p.) mask to be used for the epfd(up) case.
- Amendments to existing text to ensure consistent definition and use of various concepts throughout the Recommendation.
- Minimum GSO ES elevation angle.
- Removal of X angle pfd mask format.
- Clarification of the (theta, phi) coordinates used by Recommendation ITU-R S.1503.

Working Party 4A agreed to work immediately on a further revision and has prepared a draft Workplan and Working Document towards a PDRR ITU-R S.1503 in Annexes 9 and 10 to Document [4A/978](#). The WD towards a PDRR ITU-R S.1503 has identified the following points in particular for consideration:

- Worst case geometry issue.
- Downlink emission mask duty cycle.
- Time-framed transmission scheme.
- EPFD(down) satellite selection, for example the alpha table concept.
- GSO earth station antenna patterns.
- Run time improvements.
- Relationship between parameters.
- Methodology to assess potential changes to this Recommendation.
- Consideration of non-GSO satellite systems using steerable beams and other satellite selection methods.

Some of these elements could have regulatory and/or procedural implications.

For example, for the first item on the worst geometry issue, should this concept be pursued, the notifying administration of the non-GSO satellite system should be given the opportunity to take corrective measures to remove the exceedance of epfd at those test point for which the epfd is exceeded.

With respect to the alpha table, it should be demonstrated that this solution treats small scale non-GSO satellite systems (less than one thousand satellites) and large scale (over one thousand satellites) equitably.

Any combination or package of the above elements should appropriately reflect the reality of the operation of the non-GSO system.

Working Party 4A believes that this workplan in [Annex 9 to Document 4A/978](#) is very important for administration in the consideration in adoption and approval of the DRR ITU-R S.1503-3. As a result, WP 4A would recommend to SG 4 to also include this workplan when circulating the draft revision of Recommendation ITU-R S.1503-3 to administrations for adoption and approval by correspondence.

Annex 2

ITU-R Recommendation proposed for suppression

(Source: Document 4/89, § 1.2.3)

Recommendation ITU-R	Title
S.354	Video bandwidth and permissible noise level in the hypothetical reference circuit for the fixed-satellite service
