

## RESOLUTION 85 (REV.WRC-23)

**Application of Article 22 of the Radio Regulations for the protection of  
geostationary fixed-satellite service and broadcasting-satellite service networks  
from non-geostationary fixed-satellite service systems**

The World Radiocommunication Conference (Dubai, 2023),

*considering*

- a)* that WRC-2000 adopted, in Article **22**, single-entry limits applicable to non-geostationary (non-GSO) fixed-satellite service (FSS) systems in certain parts of the frequency range 10.7-30 GHz to protect geostationary-satellite (GSO) networks operating in the same frequency bands;
- b)* that, taking into account Nos. **22.5H** and **22.5I**, wherever the limits referred to in *considering a)* are exceeded by a non-GSO FSS system to which the limits apply without the agreement of the concerned administrations, this constitutes a violation of the obligations under No. **22.2**;
- c)* that Recommendation ITU-R S.1503 provides a functional description to be used in developing software tools for determining the conformity of non-GSO FSS networks with limits contained in Article **22**;
- d)* that there was no software tool available to the Radiocommunication Bureau for equivalent power flux-density (epfd) examinations until the publication of the Circular Letter CR/414 on 6 December 2016 informing administrations of the availability of software for implementing Recommendation ITU-R S.1503-2;
- e)* that the software may not adequately model certain non-GSO FSS systems and further improvements to Recommendation ITU-R S.1503 may be necessary;
- f)* that, before the availability of the epfd validation software, the Bureau had requested commitments from the notifying administrations that they will meet the epfd limits in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3**, and that under these commitments the Bureau gave qualified favourable findings to their systems;
- g)* that the epfd validation software based on Recommendation ITU-R S.1503-2 does not allow the Bureau to perform examinations in relation to Nos. **9.7A** and **9.7B** when earth stations communicate with GSO space stations in inclined orbits and, thus, Recommendation ITU-R S.1714 was revised to assist the Bureau with this task;

*h)* that, during the examination under Nos. **9.35** and **11.31**, the Bureau examines non-GSO FSS systems to ensure their compliance with the single-entry epfd limits given in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3**,

*recognizing*

that some non-GSO FSS systems are pending review of the qualified favourable findings despite the availability of epfd validation software,

*resolves*

1 that when the Bureau is unable to examine non-GSO FSS systems subject to Nos. **22.5C**, **22.5D** and **22.5F** under Nos. **9.35** and/or **11.31**, the notifying administration shall send to the Bureau a commitment that the non-GSO FSS system complies with the limits given in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3** in addition to the information submitted under Nos. **9.30** and **11.15**; a detailed technical description including the results of epfd calculations using existing epfd validation software, the results of epfd calculations using simulation software with adequate modelling of the non-GSO satellite FSS system, and identification of particular areas of the most recent version of Recommendation ITU-R S.1503 that fail to adequately model the non-GSO system shall also be provided;

*1 bis* that the Bureau shall promptly make available on the ITU website the information referred to in *resolves* 1 that it has received from the administration of the non-GSO satellite system, and publish it in the Radiocommunication Bureau International Frequency Information Circular (BR IFIC);

2 that the Bureau shall issue either a qualified favourable finding under No. **9.35** or a favourable finding with a date of review under No. **11.31** with respect to the limits contained in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3**, if *resolves* 1 is satisfied, otherwise the non-GSO FSS system will receive a definitive unfavourable finding;

3 that, if an administration believes that a non-GSO FSS system, for which the commitment referred to in *resolves* 1 was sent, has the potential to exceed the limits given in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3**, it may request from the notifying administration additional information with regard to the compliance with the limits mentioned above; both administrations shall cooperate to resolve any difficulties, with the assistance of the Bureau, if so requested by either of the parties, and may exchange any additional relevant information that may be available;

4 that the Bureau shall determine coordination requirements between GSO FSS earth stations and non-GSO FSS systems under Nos. **9.7A** and **9.7B** based on bandwidth overlap, GSO FSS earth station antenna maximum isotropic gain, *G/T* and emission bandwidth;

5 that *resolves* 1 to 4 shall no longer be applied since, as per *considering d)*, the Bureau has communicated to all administrations via a circular letter that the epfd validation software is available and the Bureau is able to verify compliance with the limits in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3** and, as per *considering g)*, Recommendation ITU-R S.1714 has been revised and allows the Bureau to determine the coordination requirements between GSO FSS earth stations and non-GSO FSS systems under Nos. **9.7A** and **9.7B** based on all the conditions and criteria specified in Table 5-1 of Appendix 5;

6 that notwithstanding *resolves* 5:

6.1 the course of actions described in *resolves* 2 and 3 (without the need to satisfy *resolves* 1) and *resolves* 4 shall continue to apply for non-GSO systems that can be adequately modelled using the existing version of the epfd validation software tool, notified after the publication of the circular letter referred to in *considering d)*, until the review of all the non-GSO FSS systems with qualified favourable findings is completed; and

6.2 *resolves* 1 to 3 and *resolves* 4, as appropriate, shall continue to apply to non-GSO systems that cannot be adequately modelled by the version of the software available until a new version of the software which adequately models the non-GSO system is made available,

*invites the ITU Radiocommunication Sector*

1 to amend, as a matter of urgency and taking into account the information referred to in *resolves* 1, as appropriate, the algorithm of Recommendation ITU-R S.1503 to ensure that the epfd validation software available to the Bureau for epfd examinations can adequately model non-GSO satellite FSS systems while maintaining the level of protection for GSO satellite networks in Article **22**;

2 to conduct studies, as a matter of urgency, to ensure that an indefinite application of a qualified favourable finding for a given non-GSO FSS system is avoided,

*instructs the Director of the Radiocommunication Bureau*

1 to encourage administrations to develop the epfd validation software;

2 to continue to review, using the available epfd validation software, the qualified favourable findings made in accordance with Nos. **9.35** and **11.31**;

3 to review, once a version of the epfd validation software that adequately models the non-GSO systems to which *resolves* 1 applies is available, the qualified favourable findings made in accordance with Nos. **9.35** and **11.31**;

4 to take the necessary actions to implement this Resolution.