



Radiocommunication Bureau (BR)

Circular Letter
CR/414

6 December 2016

To the Administrations of ITU Member States

Subject: **Examinations under Resolution 85 (WRC-03)**

Resolution **85 (WRC-03)** requires the Radiocommunication Bureau to review, once the equivalent power flux-density (EPFD) validation software is available, its findings made in accordance with Nos. **9.35** and **11.31** for frequency assignments to non-GSO FSS satellite systems against the single-entry EPFD limits in Tables 22-1A, 22-1B, 22-1C, 22-1D, 22-1E, 22-2 and 22-3 in Article **22** of the Radio Regulations, and to determine the coordination requirements under Nos. **9.7A** and **9.7B**.

In Circular Letter CR/405 (3 June 2016), the Bureau informed administrations of the availability of a beta version of the EPFD validation software for testing and evaluation purposes.

Since the release of the beta version of the software, the Bureau has collected comments and suggestions for possible improvements to the software. Those comments have been taken into account in preparing the final version of the software.

The Bureau is pleased to inform your Administration that the final version of the software for implementing Recommendation ITU-R S.1503-2 is available on the ITU website www.itu.int/ITU-R/go/space-epfd/en and will be made available on the DVD version of BR IFIC (Space services) 2384/06.12.2016 and subsequent issues.

The EPFD validation package includes a Graphical Interface for Batch Calculations (GIBC) module used as an interface to launch the EPFD validation, two EPFD validation tools, two test cases and a user guide.

The purpose of this circular letter is to provide administrations and other users with information and guidance on the EPFD validation software and implementation of the *instructs the Director of the Radiocommunication Bureau* section of Resolution **85** (WRC-03).

In accordance with *instructs the Director of the Radiocommunication Bureau* 2 and 3 of Resolution **85**, the Bureau will be initiating a review of its findings made in accordance with Nos. **9.35** and **11.31**, as appropriate, and of the coordination requirements under Nos. **9.7A** and **9.7B**.

The Bureau will determine whether the frequency assignments to:

- a) non-GSO FSS satellite systems comply with the EPFD limits contained in Tables **22-1A**, **22-1B**, **22-1C**, **22-1D**, **22-1E**, **22-2** and **22-3** of Article **22**;
- b) specific large earth stations (under certain conditions) require coordination under No. **9.7A** with respect to any existing non-GSO FSS satellite systems using the coordination triggers in Appendix **5**; or
- c) non-GSO FSS satellite systems require coordination under No. **9.7B** with respect to any large earth station (under certain conditions) using the coordination triggers in Appendix **5**.

For the above purposes, the Bureau will contact individually each administration having submitted non-geostationary satellite systems in the fixed-satellite service, including frequency assignments with qualified favourable findings in accordance with Resolution **85** (WRC-03), and request the administration to submit the following within three months from the date of dispatch of the communication:

- PFD and EIRP mask data (data elements under §A.14 of Appendix **4**) in accordance with the detailed description of the masks in Recommendation ITU-R S.1503-2, Part B. The mask data should be submitted in XML format, the description of which can be found at www.itu.int/ITU-R/go/space-mask-XMLfile/en; and
- any other Appendix **4** data elements required for stations in a frequency band subject to Nos. 22.5C, 22.5D or 22.5F (i.e. subject to EPFD examination) which may have been missing in the original submissions or may require amendment in order to run the EPFD validation software correctly along with the PFD/EIRP mask data.

The above information would not change the formal date of receipt of the frequency assignments concerned if the information or clarification is provided within the three-month period indicated. In the case of a satellite system with different subsets of orbital characteristics that are mutually exclusive, the requested data shall be provided for each subset of orbital parameters subject to the limits in Article **22** and to No. **9.7B**.

If the required information is not provided within the aforementioned three-month period, the submission shall be deemed incomplete and a new formal date of receipt established when the complete information is received.

The submitted PFD and EIRP masks together with the results of the EPFD examination will be published in the BR IFIC (Space services) and posted at www.itu.int/ITU-R/go/space-epfd/en.

The 2015 World Radiocommunication Conference (WRC-15) reviewed the progress reported by the Director of BR regarding the development of the EPFD validation software, and at its eighth plenary meeting approved the second report of Committee 5 to the Plenary Meeting (see Documents CMR15/416 and CMR15/505) indicating that:

- *In cases where the software cannot adequately model certain non-geostationary satellite FSS systems, Resolution **85** (WRC-03) will continue to be applied until an update to Recommendation ITU-R S.1503 improving the modelling of those non-GSO systems has been agreed within ITU-R and has been implemented in the epfd validation software. This would not preclude the Bureau to undertake verification of the non-GSO FSS systems that can be modelled with the existing version of the software.*

In accordance with the above decision, the Bureau would, upon receipt of an indication that *the software cannot adequately model* a particular *non-geostationary satellite FSS system*, refer the case to ITU-R Study Group 4/Working Party 4A for consideration as to whether further improvements to the Recommendation ITU-R S.1503-2 methodology are required in order to model the system adequately. To support this review by the Bureau and Study Group 4/Working Party 4A, further detailed technical description shall be provided, including *inter alia*:

- 1) the results of calculations using existing EPFD validation software;
- 2) the results of EPFD calculations using simulation software with adequate modelling of the non-geostationary system;
- 3) identification of particular areas of Recommendation ITU-R S.1503-2 that need to be reviewed and improved.

The above information will be published on the ITU website and as part of the submission made to Study Group 4/Working Party 4A for consideration. If Study Group 4/Working Party 4A concurs with the administration and concludes that a review of Recommendation ITU-R S.1503-2 is necessary in order to model the system adequately, the Bureau would maintain the “qualified favourable” findings until a new revision of Recommendation ITU-R S.1503 is agreed to and implemented in a new version of the EPFD validation software.

For any specific questions relating to the functioning of the EPFD validation software, or in order to put forward suggestions and ideas for possible improvements, administrations are invited to contact the Bureau via BRMail@itu.int or epfd-support@itu.int.

The Bureau remains at the disposal of your Administration, via the brmail@itu.int e-mail address or the specific EPFD validation tool forum, for any clarifications you may require with respect to the subjects covered in this circular letter.



François Rancy
Director

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