



Radiocommunication Bureau (BR)

Administrative Circular
CACE/834

2 October 2017

**To Administrations of Member States of the ITU, Radiocommunication Sector Members,
ITU-R Associates participating in the work of Radiocommunication Study Group 3
and ITU Academia**

Subject: **Radiocommunication Study Group 3 (Radiowave propagation)**


- **Proposed adoption of 13 draft revised ITU-R Recommendations and their simultaneous approval by correspondence in accordance with § A2.6.2.4 of Resolution ITU-R 1-7 (Procedure for the simultaneous adoption and approval by correspondence)**

At the meeting of Radiocommunication Study Group 3, held on 1 September 2017, the Study Group decided to seek adoption of 13 draft revised ITU-R Recommendations by correspondence (§ A2.6.2 of Resolution ITU-R 1-7) and further decided to apply the procedure for simultaneous adoption and approval by correspondence (PSAA, § A2.6.2.4 of Resolution ITU-R 1-7). The titles and summaries of the draft Recommendations are given in the Annex to this letter. Any Member State who objects 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 4 December 2017. If within this period no objections are received from Member States, the draft Recommendations shall be considered to be adopted by Study Group 3. Furthermore, since the PSAA procedure has been followed, the draft Recommendations shall also be considered as approved.

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>.


for François Rancy
Director

Annex: Titles and summaries of the draft Recommendations

Documents: 3/65, 3/67, 3/69, 3/70, 3/73(Rev.1), 3/76(Rev.1), 3/77(Rev.1), 3/80(Rev.1),
3/81, 3/82, 3/84(Rev.1), 3/85(Rev.1), 3/86(Rev.1)

These documents are available in electronic format at: <https://www.itu.int/md/R15-SG03-C/en>

Distribution:

- Administrations of Member States of the ITU and Radiocommunication Sector Members participating in the work of Radiocommunication Study Group 3
- ITU-R Associates participating in the work of Radiocommunication Study Group 3
- ITU Academia
- Chairmen and Vice-Chairmen of Radiocommunication Study Groups
- 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

Titles and summaries of the draft Recommendations

Draft revision of Recommendation ITU-R P.1057-4

Doc. 3/65

Probability distributions relevant to radiowave propagation modelling

Various P-Series Recommendations refer to the:

- 1) cumulative distribution of a normal (Gaussian) random distribution;
- 2) inverse cumulative distribution of a normal (Gaussian) random distribution;
- 3) complementary cumulative distribution of a normal (Gaussian) random distribution; and
- 4) inverse complementary cumulative distribution of a normal (Gaussian) random distribution.

This revision provides the definitions of these probability distributions, and also proposes various editorial, typographical, grammatical, and equation numbering revisions that do not alter the substantive meaning of the text.

Draft revision of Recommendation ITU-R P.530-16

Doc. 3/67

Proposed modification of Recommendation ITU-R P.530-16 to improve accuracy of multipath diversity improvement calculations

This document proposes improvements to the multipath diversity models to take into account feeder loss differences and prevent anomalous results in the case of space diversity. It also improves the accuracy of frequency diversity in severe fading locations, especially for systems employing four receivers.

Draft revision of Recommendation ITU-R P.834-8

Doc. 3/69

Effects of tropospheric refraction on radiowave propagation

This draft revision of Recommendation ITU-R [P.834-8](#) corrects the beam spreading loss prediction method. This revision is proposed in conjunction with a similar revision to Recommendation ITU-R P.619-2.

The radio refractive index: its formula and refractivity data

The current Recommendation ITU-R P.453-12 includes maps of the annual median value of the wet term of the surface refractivity. These maps have a poor resolution of 1.5° and have been derived from only 2 years of old re-analysis products.

Water vapour: surface density and total columnar content

This proposed revision of Recommendation ITU-R [P.836-5](#) incorporates the digital maps currently in Rec. ITU-R P.1511-1 as an integral part of this Recommendation to ensure the consistency of the digital products of Recommendation ITU-R P.836. The proposed revisions are shown in the annex and attached digital maps.

Attenuation due to clouds and fog

This draft revision of Recommendation ITU-R [P.840-6](#) provides two methods of predicting the attenuation due to clouds and fog on Earth-space paths:

- 1) If local measured data of the total columnar content of cloud liquid water is not available, the existing prediction method in paragraph 3.1 should be used. This prediction method is based on ERA-40 data where the total columnar content of cloud liquid water is reduced to a fixed temperature.
- 2) If local measured data of the total columnar content of cloud liquid water is available from other sources, e.g. from radiometric measurements, Earth observation or Meteorological Numerical Products where the total columnar content of cloud liquid water has not been reduced to a fixed temperature, the calculation method proposed in the new in paragraph 3.2 should be used.

Reference standard atmospheres

This draft revision of Recommendation ITU-R [P.835-5](#):

- 1) harmonizes the ITU-R global reference atmosphere with the U.S. Standard Atmosphere, 1976 that defines two height regimes:
 - i) geopotential heights from 0 km' to 84.852 km'; and
 - ii) geometric heights from 86 km to 100 km;
- 2) provides the conversion from geometric height to geopotential height in the lower geopotential height regime from 0 km' to 84.852 km';
- 3) simplifies the calculation of pressure vs. height;
- 4) defines the constants with a sufficient number of significant digits so the approximation errors are insignificant;
- 5) corrects Annex 3, Table 4 to list the same parameter values as contained in the ESA_STD_PROF dataset along with editorial revisions.

Propagation prediction techniques and data required for the design of trans-horizon radio-relay systems

This draft revision contains modifications to the tropospheric scatter model and a new ducting model as well as a method to determine basic transmission loss.

This draft also adds (in Appendix 2) a procedure to determine effective terminal height and roughness parameter.

Finally, this draft modifies the input data product with data for differential median refractive index less than 1 km (DN0.txt) and surface median refractive index (D050.txt).

Propagation data and prediction methods required for the design of Earth-space telecommunication systems

This draft revision of Recommendation ITU-R [P.618-12](#) removes the existing beam spreading loss prediction method in paragraph 2.3.2 and refers to Recommendation ITU-R P.834.

Draft revision of Recommendation ITU-R P.681-9

Doc. 3/82

Propagation data required for the design of Earth-space land mobile telecommunication systems

The objective of this revision of Recommendation ITU-R [P.681-9](#) is to propose a new section describing a new wideband model able to simulate the wideband satellite-to-indoor propagation scenario for receiver algorithm evaluations.

Draft revision of Recommendation ITU-R P.619-2

Doc. 3/84(Rev.1)

Propagation data required for the evaluation of interference between stations in space and those on the surface of the Earth

This draft revision of Recommendation ITU-R [P.619-2](#) corrects an error in the beam spreading loss prediction method and other editorial corrections. This proposed revision also includes several other modifications and corrections.

Draft revision of Recommendation ITU-R P.1144-8

Doc. 3/85(Rev.1)

Guide to the application of the propagation methods of Radiocommunication Study Group 3

This document contains updates to Tables 1 and 2 resulting from improvements to ITU-R P-Series Recommendations.

Draft revision of Recommendation ITU-R P.311-16

Doc. 3/86(Rev.1)

Acquisition, presentation and analysis of data in studies of radiowave propagation

The objective of this proposed revision of Recommendation ITU-R [P.311-16](#) is to provide additional experimental data for the case of the link between ground and an aeronautical mobile terminal. Modifications are described in Annex 1.
