



Radiocommunication Bureau (BR)

Administrative Circular
CACE/1030

23 June 2022

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

Subject: **Radiocommunication Study Group 3 (Radiowave Propagation)**
 – **Proposed approval of 1 draft revised ITU-R Question**

At the meeting of Radiocommunication Study Group 3 held on 13 June 2022, 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 the Annex to this letter. Any Member State which objects 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.

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 23 August 2022, whether they approve or do not approve the proposal 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-rsg3/en>).

Mario Maniewicz
Director

Annex: 1

– 1 draft revised ITU-R Question

Annex

(Document [3/71](#))

DRAFT REVISION OF QUESTION ITU-R 202-4/3

Methods for predicting propagation over the surface of the Earth

(1990-2000-2007-2015-[2022](#))

The ITU Radiocommunication Assembly,

considering

- a)* that the presence of obstacles on the propagation path may modify, to a large extent, the mean value of the transmission loss, as well as the fading amplitude and characteristics;
- b)* that, with increase in frequency, the influence of the detailed roughness of the surface of the Earth as well as that of vegetation and natural or man-made structures on or above the surface of the Earth becomes more significant;
- c)* that propagation over high mountain ridges is sometimes of great practical importance;
- d)* that diffraction and site shielding are of practical significance in interference studies;
- e)* that the increase in performance and storage capacity of computers, permits the development of detailed digital terrain and clutter data bases;
- f)* that the field strength of the ground wave for frequencies between 10 kHz and 30 MHz is given in Recommendation ITU-R P.368, and a computer implementation, [GRWAVE](#)”[LFMF-SmoothEarth](#)”, is available from the Radiocommunication Study Group 3 Web page;
- g)* that information on the phase of the ground-wave mode is required;
- h)* that information on ground conductivity is often available in digital form;
- i)* that seasonal variation of ground-wave propagation has been observed;
- j)* that the availability of high resolution terrain and building databases makes it practical to develop diffraction models which take 3-dimensional information into account;
- k)* that frequency-selective and other [specialised](#)[specialized](#) materials are expected to be increasingly incorporated into the built environment (e.g. buildings, bridges, dams, etc.),

decides that the following Questions should be studied

- 1 What is the influence of terrain irregularities, vegetation and buildings, the existence of conducting structures and seasonal variability, both for locations within the service area around a transmitter and for the evaluation of interference at much greater distances, on the transmission loss, polarization, group delay and angle of arrival?
- 2 What is the additional transmission loss in urban areas?
- 3 What is the screening provided by obstacles near a terminal, taking into account the propagation mechanisms over the path?
- 4 What are the conditions under which obstacle gain occurs and the short-term and long-term variations of transmission loss under these conditions?
- 5 What are suitable methods and formats for describing the detailed roughness of the surface of the Earth including topographic features and man-made structures?
- 6 How can terrain data bases, together with other detailed information on terrain features, vegetation and buildings be applied in the prediction of attenuation, time delay, scatter and diffraction?
- 7 Can more accurate evaluation of losses be made by taking the three-dimensional shape of terrain and building obstacles into account?
- 8 How can quantitative relationships and statistically-based prediction methods be developed which treat reflection, diffraction and scatter from terrain features and buildings, as well as the influence of vegetation?
- 9 What is the phase of the ground-wave mode?
- 10 How can information on ground conductivity be made available digitally as matrix or vector information?

further decides

- 1 that the results of the above studies should be included in Recommendations and/or Reports;
- 2 that the above studies should be completed by 2025~~3~~.

Category: S2
