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| **Recommendation ITU-R P.1511-1**  **(07/2015)** |
| **Topography for Earth-space propagation modelling** |
| **P Series**  **Radiowave propagation** |

Foreword

The role of the Radiocommunication Sector is to ensure the rational, equitable, efficient and economical use of the radio-frequency spectrum by all radiocommunication services, including satellite services, and carry out studies without limit of frequency range on the basis of which Recommendations are adopted.

The regulatory and policy functions of the Radiocommunication Sector are performed by World and Regional Radiocommunication Conferences and Radiocommunication Assemblies supported by Study Groups.

# Policy on Intellectual Property Right (IPR)

ITU-R policy on IPR is described in the Common Patent Policy for ITU-T/ITU-R/ISO/IEC referenced in Annex 1 of Resolution ITU-R 1. Forms to be used for the submission of patent statements and licensing declarations by patent holders are available from <http://www.itu.int/ITU-R/go/patents/en> where the Guidelines for Implementation of the Common Patent Policy for ITU‑T/ITU‑R/ISO/IEC and the ITU-R patent information database can also be found.

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| Series of ITU-R Recommendations  (Also available online at <http://www.itu.int/publ/R-REC/en>) | |
| **Series** | Title |
| **BO** | Satellite delivery |
| **BR** | Recording for production, archival and play-out; film for television |
| **BS** | Broadcasting service (sound) |
| **BT** | Broadcasting service (television) |
| **F** | Fixed service |
| **M** | Mobile, radiodetermination, amateur and related satellite services |
| P | Radiowave propagation |
| **RA** | Radio astronomy |
| **RS** | Remote sensing systems |
| **S** | Fixed-satellite service |
| **SA** | Space applications and meteorology |
| **SF** | Frequency sharing and coordination between fixed-satellite and fixed service systems |
| **SM** | Spectrum management |
| **SNG** | Satellite news gathering |
| **TF** | Time signals and frequency standards emissions |
| **V** | Vocabulary and related subjects |

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| ***Note***: *This ITU-R Recommendation was approved in English under the procedure detailed in Resolution ITU-R 1.* |

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RECOMMENDATION ITU-R P.1511-1[[1]](#footnote-1)\*

Topography for Earth-space propagation modelling

(Question ITU-R 202/3)

(2001-2015)

Scope

This Recommendation provides global topographical data to be used for the prediction of propagation effects for Earth-space paths in ITU-R recommendations.

The ITU Radiocommunication Assembly,

considering

*a)* that information on ground topography is needed for the prediction of attenuation and scattering;

*b)* that the information is needed for all locations of the globe, especially when regional or continental calculations are necessary,

recommends

**1** that the data in Annex 1 be used to obtain the height above mean sea level when no local data are available or when no data with a better spatial resolution is available.

Annex 1

# 1 Topography

The values of topographical height (km) above mean sea level of the surface of the Earth are an integral part of this Recommendation and are available in the form of digital maps provided in the Supplement.

The data is provided on a 0.5° grid in both latitude and longitude. For a location different from the gridpoints, the height above mean sea level at the desired location can be obtained by performing a bi‑cubic interpolation on the values at the sixteen closest grid points, as described in Recommendation ITU-R P.1144.

Information on coastlines and country borders can be obtained from the ITU Digitized World Map, available from the BR.

1. \* Radiocommunication Study Group 3 made editorial amendments to this Recommendation in the year 2016 in accordance with Resolution ITU-R 1. [↑](#footnote-ref-1)