

**Recommendation ITU-R P.452-16**  
(07/2015)

**Prediction procedure for the evaluation  
of interference between stations  
on the surface of the Earth at  
frequencies above about 0.1 GHz**

**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.

### Series of ITU-R Recommendations

(Also available online at <http://www.itu.int/publ/R-REC/en>)

Series	Title
<b>BO</b>	Satellite delivery
<b>BR</b>	Recording for production, archival and play-out; film for television
<b>BS</b>	Broadcasting service (sound)
<b>BT</b>	Broadcasting service (television)
<b>F</b>	Fixed service
<b>M</b>	Mobile, radiodetermination, amateur and related satellite services
<b>P</b>	<b>Radiowave propagation</b>
<b>RA</b>	Radio astronomy
<b>RS</b>	Remote sensing systems
<b>S</b>	Fixed-satellite service
<b>SA</b>	Space applications and meteorology
<b>SF</b>	Frequency sharing and coordination between fixed-satellite and fixed service systems
<b>SM</b>	Spectrum management
<b>SNG</b>	Satellite news gathering
<b>TF</b>	Time signals and frequency standards emissions
<b>V</b>	Vocabulary and related subjects

*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.452-16

**Prediction procedure for the evaluation of interference  
between stations on the surface of the Earth  
at frequencies above about 0.1 GHz**

(Question ITU-R 208/3)

(1970-1974-1978-1982-1986-1992-1994-1995-1997-1999-2001-2003-2005-2007-2009-2013-2015)

**Scope**

This Recommendation contains a prediction method for the evaluation of interference between stations on the surface of the Earth at frequencies from about 0.1 GHz to 50 GHz, accounting for both clear-air and hydrometeor scattering interference mechanisms.

**Keywords**

Interference, Ducting, Tropospheric scatter, Diffraction, Hydrometeor Scattering, Digital Data Products

The ITU Radiocommunication Assembly,

*considering*

- a) that due to congestion of the radio spectrum, frequency bands must be shared between different terrestrial services, between systems in the same service and between systems in the terrestrial and Earth-space services;
- b) that for the satisfactory coexistence of systems sharing the same frequency bands, interference prediction procedures are needed that are accurate and reliable in operation and acceptable to all parties concerned;
- c) that propagation predictions are applied in interference prediction procedures which are often required to meet “worst-month” performance and availability objectives;
- d) that prediction methods are required for application to all types of path in all areas of the world,

*recommends*

**1** that the interference prediction procedure given in Annex 1 be used for the evaluation of the available propagation loss over unwanted signal paths between stations on the surface of the Earth for frequencies above about 0.1 GHz.

**Annex 1****1 Introduction**

Congestion of the radio-frequency spectrum has made necessary the sharing of many frequency bands between different radio services, and between the different operators of similar radio services. In order to ensure the satisfactory coexistence of the terrestrial and Earth-space systems