

ITU-R

Radiocommunication Sector of ITU

Recommendation ITU-R SA.1027-5
(07/2017)

**Sharing criteria for space-to-Earth data
transmission systems in the Earth
exploration-satellite and meteorological-
satellite services using satellites
in low-Earth orbit**

SA Series
Space applications and meteorology



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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
BO	Satellite delivery
BR	Recording for production, archival and play-out; film for television
BS	Broadcasting service (sound)
BT	Broadcasting service (television)
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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

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 SA.1027-5

Sharing criteria for space-to-Earth data transmission systems in the Earth exploration-satellite and meteorological-satellite services using satellites in low-Earth orbit

(1994-1995-1997-1999-2009-2017)

Scope

This Recommendation provides sharing criteria for space-to-Earth transmissions from satellites in low-Earth orbit applying to both the Earth exploration-satellite and meteorological-satellite services.

Keywords

EESS, METSAT, non-GSO satellites, single entry sharing criteria

Related Recommendations and Reports

Recommendations ITU-R SA.514, ITU-R SA.1020, ITU-R SA.1021, ITU-R SA.1022, ITU-R SA.1023, ITU-R SA.1026, ITU-R SA.1159.

The ITU Radiocommunication Assembly,

considering

- a) that frequency bands allocated to the Earth exploration-satellite and meteorological-satellite services may be shared by several systems, including systems operating in other services;
- b) that for the Earth exploration-satellite and meteorological-satellite services, Recommendation ITU-R SA.1026 specifies aggregate interference criteria for some frequency bands in the form of permissible levels of total interference to earth stations operating with satellites in low-Earth orbit;
- c) that Recommendation ITU-R SA.1023 provides a methodology for deriving sharing criteria based on interference criteria, the anticipated spatial deployment of interfering stations and the associated temporal characteristics of interfering signals;
- d) that the typical deployment of interfering stations may change over a period of several years as a result of growth in the number of systems and revisions to frequency band allocations that are adopted by world radio conferences;
- e) that the interference environment encountered by shipborne earth stations in the meteorological-satellite service is unlikely to be worse than that encountered by earth stations operating on land;
- f) that the potential interference received by the Earth exploration-satellite service (EESS) and meteorological-satellite earth stations is the aggregate effect of several sources, including systems from other services allocated in these frequency bands, and systems not being allocated within the same band,

recommends

- 1 that the single entry interference levels presented in Table 1 should be used as sharing criteria for the protection of earth stations operating in the Earth exploration-satellite and meteorological-satellite services;