



Recommendation ITU-R SA.1159-4
(07/2017)

**Performance criteria for data transmission
systems in the Earth exploration-satellite
service and meteorological-satellite service**

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.

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RA	Radio astronomy
RS	Remote sensing systems
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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.1159-4

**Performance criteria for data transmission systems
in the Earth exploration-satellite service and meteorological-satellite service**

(Question ITU-R 141/7)

(1995-1997-1999-2006-2017)

Scope

This Recommendation specifies the performance objectives for data transmission systems of the Earth exploration-satellite service (EESS) and meteorological-satellite service (MetSat) operating either in low-Earth orbit (LEO) or in geostationary orbit.

Keywords

EESS, METSAT, non-GSO satellites, GSO satellites, data transmission, interference criteria

Related Recommendations and Reports

Recommendations ITU-R SA.1020, ITU-R SA.1627 and ITU-R SA.1021

The ITU Radiocommunication Assembly,

considering

- a) that the hypothetical reference system specified in Recommendation ITU-R SA.1020 defines space-to-Earth links for data transmission, encompassing direct readout of data acquisition of recorded data, as well as links for data dissemination, and direct data readout, data collection and data collection platform (DCP) interrogation by satellite;
- b) that performance objectives for these transmissions must be consistent with the attendant functional requirements and with the performance limitations associated with the systems and frequency bands in which the requirements will be fulfilled;
- c) that performance objectives for representative systems operating in the Earth exploration-satellite service (EESS) and meteorological-satellite service (MetSat) are intended to provide guidelines for the development of actual systems;
- d) that performance objectives may be determined using the methodology described in Recommendation ITU-R SA.1021;
- e) that the performance objectives are a prerequisite for the determination of interference criteria;
- f) that Recommendation ITU-R SA.1627 contains the telecommunication requirements and characteristics of EESS and MetSat systems for data collection and their platform locations,

recommends

- 1 that links associated with data transmission systems in the EESS and MetSat using satellites in low-Earth orbit (LEO) should have the performance objectives specified for the frequency bands in Table 1;