



Recommendation ITU-R S.2049
(12/2013)

**Access procedures for fixed-satellite
service occasional use, transmissions to
geostationary-satellite orbit space stations,
in the 4/6 GHz and 11-12/13/14 GHz
FSS bands**

S Series
Fixed-satellite service



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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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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 S.2049

Access procedures for fixed-satellite service occasional use¹, transmissions to geostationary-satellite orbit space stations, in the 4/6 GHz and 11-12/13/14 GHz FSS bands

(2013)

Scope

This Recommendation provides access procedures for fixed-satellite service (FSS) occasional use (OU), transmissions to geostationary-satellite orbit space stations, in the 4/6 GHz and 11-12/13/14 GHz FSS bands. An occasional use transmission is a telecommunication application in the fixed-satellite service where the transmission lasts a limited period of time ranging from minutes to months.

The ITU Radiocommunication Assembly,

considering

- a) that the number of FSS earth stations used for OU carrier transmissions in the 4/6 GHz and 11-12/13/14 GHz FSS bands is increasing;
- b) that OU transmissions are often characterized by frequent changes in earth station antenna pointing, frequency, power level, polarization sense, carrier bandwidth and modulation technique;
- c) that the proliferation of the use of OU transmitting earth stations, and their frequent changes in link parameters, has caused an increase in unintentional interference to other satellite users;
- d) that a procedure for OU carrier transmissions from FSS earth stations can reduce the opportunity for unintentional interference to other satellite users;
- e) that some OU operators may have equipment and operational differences that can result in certain portions of the general procedure in Annex 1 being inapplicable;
- f) that satellite resources will be more efficiently used if an appropriate access procedure is used,

recognizing

- a) that RR No. **18.1** states “No transmitting station may be established or operated by a private person or by any enterprise without a license issued in an appropriate form and in conformity with the provisions of the Radio Regulations by or on behalf of the government of the country to which the station in question is subject (however, see Nos. **18.2**, **18.8** and **18.11**)”,

recommends

- 1** that operators of OU FSS earth stations in the bands listed in *considering* a) and licensed or authorized in an appropriate form to operate by or on behalf of the government of the country where the earth stations are located, should use the general access procedure described in Annex 1 as a basis for more specific and detailed practices that are to be followed when accessing a GSO FSS satellite.

¹ The term “occasional use” is defined in Annex 1.

Annex 1

Access procedures for fixed-satellite service occasional use, transmissions to geostationary-satellite orbit space stations, in the 4/6 GHz and 11-12/13/14 GHz FSS bands

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1 Introduction

An occasional use transmission is a telecommunication application in the FSS where the transmission lasts a limited period of time ranging from minutes to months. These transmissions are not part of those within a geostationary satellite network where earth stations are under the automated control of a central station, such as transmissions within a centrally-managed very small aperture terminals (VSAT) network. Occasional use (OU) transmissions are often characterized by frequent changes in earth station antenna pointing, frequency, power level, polarization sense, carrier bandwidth and modulation technique.

A FSS earth station under the OU transmissions designation is an earth station that transmits video, audio, and/or data and also has the following characteristics:

- the earth station is used for more than one type of carrier transmission during a one year period; or
- the earth station antenna may move off a space station and back on to a space station between transmissions, or may be stowed and deployed between transmissions, or may be pointed at different space stations during normal use; or
- earth station transmission equipment is replaced or reconfigured as part of normal operations. Reconfiguration would include, but not be limited to, changing frequency, modulation mode, replacing waveguide; or
- the earth station is radiating a carrier for the first time at a particular frequency and/or on a particular geostationary space station; and
- the earth station is not under positive central control, meaning some or all of the following settings are adjusted by the station operator: antenna azimuth, elevation, and polarization, modem frequency, power, and bandwidth, and frequency conversion and amplifier gain.

Satellite news gathering (SNG) and fixed-location teleport earth stations that do not transmit constantly over a multi-year period are two examples of OU earth stations.

The possible changes in link parameters listed above can give rise to unintentional interference due to illumination of the wrong geostationary space station, illumination of adjacent space stations at power density levels that exceed inter-satellite coordination agreements, or illumination of the correct space station at an incorrect frequency, power level, polarization sense, or bandwidth, or with spurious signals. It is the objective of this Recommendation to provide guidance to occasional use earth station operators, geostationary satellite operators and regulators on the avoidance of this unintentional interference.

This Annex defines a General Access Procedure (GAP) for OU earth station operators accessing geostationary space stations operating in the FSS frequency bands. While equipment configuration or operational conditions may in some instances limit the applicability of the procedure and require augmentation with more detail, careful attention in making use of the applicable portions of the GAP should significantly reduce the possibility of unacceptable interference to other satellite users.

The access procedure described in this Recommendation is not intended to apply to the normal operation of networks that have transmitting earth stations under the control of a centralized access management and control system after initial commissioning.

This Recommendation, and the procedures contained within, assumes that readers and operators have been trained on basic satellite communication systems. This Recommendation is intended to provide some easy-to-follow practices to enable OU operators to transmit to geostationary space stations without interfering with other users on the target satellite or with users on any other nearby satellites.