



ECC Recommendation (24)03

Licensing of earth stations for space tracking, space telemetry and space telecommand in the bands 2025-2110 MHz (Earth-to-space) and 2200-2290 MHz (space-to-Earth)

approved 7 June 2024

INTRODUCTION

ITU recently approved and published the Recommendation ITU-R SA.2156 [1] and Recommendation ITU-R SA.2155 [2] in order to preserve an efficient use of the bands 2025-2110 MHz (Earth-to-space) and 2200-2290 MHz (space-to-Earth).

Those recommendations propose provisions on earth stations that enhance the efficient use of the S band for telecommand and telemetry of satellite.

Due to the increasing number of satellite networks and systems using these frequency bands, the use of large emission bandwidth makes it difficult to ensure the coexistence of non-GSO satellite networks and systems with any other satellite network or systems under the procedure of section I of Article 9 of the Radio Regulations [3] and also increases the possibility of interference between networks.

This Recommendation lists the harmonised conditions for the administrations to decide when licences can be granted to earth stations to operate space tracking, space telemetry and space telecommand (TT&C) in the bands 2025-2110 MHz (Earth-to-space) and 2200-2290 MHz (space-to-Earth).

The earth stations considered in this Recommendation do not use spread-spectrum modulation.

ECC RECOMMENDATION (24)03 OF 7 JUNE 2024 ON LICENSING OF EARTH STATIONS FOR SPACE TRACKING, SPACE TELEMETRY AND SPACE TELECOMMAND IN THE BANDS 2025-2110 MHZ (EARTH-TO-SPACE) AND 2200-2290 MHZ (SPACE-TO-EARTH)

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that the frequency bands 2025-2110 MHz and 2200-2290 MHz are traditionally used for tracking, telemetry and command (TT&C) for the operation of spacecraft and also for relatively low data-rate payload data transmission;
- b) that the Recommendation ITU-R SA.2156 [1] and Recommendation ITU-R SA.2155 [2] provide the guidelines on the use of the bands 2025-2110 MHz (Earth-to-space) and 2200-2290 MHz (space-to-Earth) by the Earth exploration-satellite service, space research service and space operation service satellite networks or systems that do not use spread-spectrum modulation;
- c) that the spectrum occupancy in frequency bands 2025-2110 MHz and 2200-2290 MHz is increasing and interference among different satellite networks and systems may exceed the protection levels from relevant ITU-R Recommendations;
- d) that the number of satellite links using the frequency bands 2025-2110 MHz and 2200-2290 MHz is expected to continue to increase in the future and, as a result, may potentially increase the interference levels;
- e) that congestion in the band can be reduced by selection of the minimum bandwidth necessary to accomplish the intended mission;
- f) that ITU-R Circular Letter CR/420 [4] states that these bands are in fact the most common bands for space operation of non-GSO satellite networks or systems and submitting a more realistic frequency band as part of the Advance Publication Information (API) will facilitate the procedure under Section 1A of Article 9 of the Radio Regulations [3] and minimise correspondence exchange between various involved administrations;
- g) that GSO satellite networks are subject to coordination under No. 9.7 in the Radio Regulations in the frequency bands 2025-2110 MHz and 2200-2290 MHz;
- h) that provisions on licensing of earth stations are needed to enhance the efficient use of this S-band for telecommand and telemetry of satellite;

recommends

1. that administrations authorise the emission of earth stations in the frequency band 2025-2110 MHz for an operational bandwidth of no more than 2 MHz;
2. that administrations grant protection to earth stations in the frequency band 2200-2290 MHz for operational bandwidth of no more than 6.2 MHz;
3. that administrations authorise earth stations in the frequency bands 2025-2110 MHz and 2200-2290 MHz that only transmit and receive when in view of their associated space stations;
4. that administrations do not grant licences to earth stations communicating with non-GSO space stations operating under frequency assignments notified to the ITU Radiocommunication Bureau, after 20 December 2022, with the whole allocated space operation bands, i.e. 2025-2110 MHz and 2200-2290 MHz, or with the whole Earth surface as a unique service area for TT&C or notified only as a typical earth station (no geographical coordinates indicated);
5. the spectrum occupancy in the frequency band 2200-2290 MHz should be monitored regularly by a competent body and the results be reported to the ECC.

Notes:1:

- This Recommendation is applicable to earth stations which do not use spread-spectrum modulation.
- Recommends 1 and 2 may not be applied during launch operations.
- Please check the Office documentation database <https://docdb.cept.org/> for the up to date position on the implementation of this and other ECC Recommendations.

ANNEX 1: LIST OF REFERENCES

- [1] ITU-R SA.2156-0 (12/2022): “Guidelines on the use of the frequency band 2 025-2 110 MHz by Earth exploration-satellite service/space research service/space operation service satellite networks or systems that are not using spread-spectrum modulation
- [2] ITU-R SA.2155-0 (12/2022): “Guidelines on the use of the frequency band 2 200-2 290 MHz by Earth exploration-satellite service/space research service/space operation service satellite networks or systems that are not using spread-spectrum modulation”
- [3] ITU Radio Regulations Edition of 2020
- [4] ITU-R Circular Letter CR/420: “Application of No. 9.3 of the Radio Regulations in the bands 2 025-2 110 MHz (Earth-to-space) and 2 200-2 290 MHz (space-to-Earth)”