CEPT ECC
Electronic Communications Committee

ECC Decision (25)02

Low power devices communicating with satellites (LPD-S) within the frequency range 862-870 MHz

approved 27 June 2025

amended 30 October 2026

EXPLANATORY MEMORANDUM

1 INTRODUCTION

CEPT has explored the European regulatory framework for low power devices communicating with satellites in the band 862-870 MHz and whether this fits within current SRD regulations. It was recognised that low power devices could communicate from CEPT countries only with satellites that fulfil certain conditions covered by this Decision.

Maintaining a list of satellite systems committing through their notifying administration to adhere to certain operational parameters (e.g. PFD limits) in this frequency band may assist CEPT administrations in securing the efficient use of spectrum, assessing applications, granting licences, or resolving harmful interference, etc. Such a list may exist in each CEPT country and one list is included in this ECC Decision to assist administrations referring to rely on a CEPT examination. It requires updates whenever new satellite systems are requested to be added.

It is highlighted that receivers of low power devices communicating with satellites cannot claim protection from other applications or services. Any future ECC regulatory provision to manage conforming satellite systems does not require implementation of any form of specific protection of such systems (both satellites and associated low power devices).

A reference to this Decision in ERC Recommendation 70-03 [1] is made for low power devices communicating with satellites.

2 BACKGROUND

Relevant considerations include:

- Satellites communicating with low power devices are more and more used inside and outside Europe;
- Low power devices transmissions to satellites are already possible for devices fulfilling technical criteria recommended in the ERC Recommendation 70-03;
- There is a risk of unacceptable interference to SRD unless satellite-to-low power device transmissions are regulated;
- ECC has developed ECC Report 357 [2] concluding on the need for regulatory provisions to address satellite-to-low power device transmissions;
- Satellite-to-low power device transmissions have been measured and proven technically feasible using PFD levels of -142 dB(W/(m^2.4kHz)) or even lower in coordination with recognised regulators;
- Analyses in ECC Report 357 have shown that satellite-to-low power device transmissions should not create any unacceptable interference to SRD applications if a PFD limit of -142 dB(W/(m^2.4kHz)) in the 862-870 MHz frequency band is not exceeded on the Earth's surface.

3 REQUIREMENT FOR AN ECC DECISION

CEPT administrations intend to allow low power devices within their territories communicating with satellites in the frequency band 862-870 MHz. These administrations might benefit from a list of satellite systems wherein operators and their notifying administration have committed to adhere to defined operational parameters (i.e. the above-mentioned PFD limit), considering that higher PFD values could be detrimental to other SRD applications, presenting unpredictable challenges within this band. The 862-870 MHz frequency band is crucial for SRD applications in Europe. This situation underscores the necessity of establishing harmonised spectrum utilisation rules to ensure the efficient use of the spectrum.

Each administration may elaborate its own list of compliant satellite networks. Nevertheless, a list is included in this Decision to assist administrations which want to benefit from this Decision when identifying compliant satellite networks.

ECC DECISION OF 27 JUNE 2025 ON LOW POWER DEVICES COMMUNICATING WITH SATELLITES (LPD-S) WITHIN THE FREQUENCY RANGE 862-870 MHZ (ECC DECISION (25)02), AMENDED 30 OCTOBER 2026

"The European Conference of Postal and Telecommunications Administrations,

considering

a) that CEPT administrations require regulatory provisions to mitigate interference to existing SRD applications;

b) that ECC Report 357 [2] describes satellites communicating to low power devices for the space-to-Earth transmissions to only contain multicast messages, either for wake-up beaconing or for device control while typically not using dedicated unicast transmissions from satellites to individual devices;

c) that some low power devices transmissions can regularly be received by satellites. As for any other earth station, the satellites communicating with it and its associated ITU frequency assignments need to be known by administrations;

d) that satellites intending to communicate with low power devices in the band 862-870 MHz operate under space frequency assignments notified under No. **4.4** of the Radio Regulations on a no harmful interference and non-protection basis;

e) that there are spectrum access rules such as transmit power limitations and channel occupation rules in the SRD regulation, which are confirmed to fulfil the intended purpose and performance of transmissions from low power device to satellites. Such transmissions have to respect these limitations, including the duty cycle limitations in the various sub-bands within 862-870 MHz;

f) that space-to-Earth transmissions with no PFD limit may lead to interference to terrestrial SRD applications as well as radio services in adjacent bands;

g) that CEPT administrations need to secure an efficient use of spectrum, avoiding unacceptable interference to current SRD applications;

h) that some CEPT administrations may require that operators of such satellite networks operating within 862-870 MHz to obtain an individual authorisation for their network due to national regulations;

i) that ECC Report 357 concludes that there is a need for regulatory provisions to address transmissions from satellites to low power devices;

j) that this ECC Decision does not provide any form of protection of such satellite systems (both satellites and their associated SRD);

k) that ECC Report 357 concludes that the PFD limit of -142 dB(W/(m².4kHz)) on the Earth's surface satisfies the requirements for the feasibility of satellite to low power device links and ensures that transmissions, adhering to this restriction, do not create any unacceptable interference to current SRD applications;

l) that the Decides below are developed due to the unique regulatory situation of the low power device communicating with satellite in the band 862-870 MHz because there is no allocation to satellite services in this band for CEPT countries;

m) that a general authorisation set out in ERC Recommendation 70-03 [1] and Commission Decision 2006/771/EC (as amended) [3] exempts SRD terminals from individual authorisation;

DECIDES

1. that this Decision defines the conditions that low power devices of the band 862-870 MHz communicating with satellites need to fulfil in order to protect the regulatory framework on terrestrial SRD that is critical for CEPT;

2. that low power devices communicating with satellites shall comply with the same technical characteristics as non-specific SRD as specified in ERC Recommendation 70-03 [1] Annex 1, frequency bands within the frequency range 862-870 MHz[1];

3. that low power devices communicating with satellites cannot claim protection from other applications or services. Any future ECC regulatory provision to manage conforming satellite systems does not require implementation of any form of protection of such systems (both satellites and their associated low power devices);

4. that administrations shall exempt from individual authorisation low power devices communicating with satellite systems within the frequency range 862-870 MHz, provided that those satellite systems fulfil the requirements listed in Annex 1 of this Decision;

5. that administrations shall not allow low power devices to communicate with satellite systems in the band 862-870 MHz if those satellite systems do not comply with the conditions in Annex 1 of this Decision;

6. that satellite systems given in Annex 2 are considered to be compliant with the technical and operational conditions of the Annex 1, as per a commitment provided by the respective notifying administration;

7. that Annex 2 shall be reviewed and updated upon the request of at least one CEPT administration for deletion, addition or amendment of a satellite system, and the request shall be communicated to the ECC Chair and the European Communications Office;

8. that, for addition of a new satellite system into Annex 2, the commitment letters shall be communicated to all CEPT administrations via the ITU E-communication tool;

9. that the compliance with the conditions in Annex 1 for use of radio frequencies by current and future satellite systems shall be monitored regularly (e.g. once a year) by a competent body and the results shall be reported to the ECC;

10. that in the case the conditions described in Annex 1 are not met, the ECC may decide on the removal of the satellite system from Annex 2 of this ECC Decision;

11. that this Decision enters into force on 27 June 2025;

12. that the preferred date for implementation of this Decision shall be 27 December 2025;

13. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chair and the European Communications Office when this ECC Decision is nationally implemented."

Note:

Please check the ECO Documentation Database https://docdb.cept.org/ for the up to date position on the implementation of this and other ECC Decisions.

[1] In those bands, harmonised standard ETSI EN 300 220 [4] applies

ANNEX 1: TECHNICAL AND OPERATIONAL CONDITIONS FOR COMMUNICATIONS BETWEEN SATELLITES AND LOW POWER DEVICES IN A CEPT COUNTRY

- The satellites operate under frequency assignments of a known ITU filing which includes a space-to-Earth beam and/or Earth-to-space beam in the frequency range 862-870 MHz;
- The satellites operate under assignments of an ITU filing which includes relevant class of stations in the frequency range 862-870 MHz;
- The PFD of space-to-Earth transmissions does not exceed -142 dB(W/(m².4kHz)) on the surface of the Earth within 862-870 MHz. The unwanted emissions of space-to-Earth transmissions do not result in a PFD value higher than -146 dB(W/(m^2.1MHz)) on the surface of the Earth outside the frequency range 862-870 MHz. A letter is obtained by the CEPT country from the notifying administration of the space system where it commits to comply with both PFD limits;
- The Earth-to-space receivers of the space stations operate under the licence of a notifying administration with an explicit text “that if the space station includes a receiver, the interception of radiocommunication correspondence, other than that which the station is authorised to receive, is forbidden, and that in cases where such correspondence is involuntarily received, it shall not be reproduced, nor communicated to third parties, nor used for any purpose, and even its existence shall not be disclosed” (see Articles 17 and 18.4 of the Radio Regulations). This licence or a letter from the notifying administration is provided to justify the commitment of compliance.

In case the conditions described in this Annex are not met, the following procedures apply:

- In the event of reported interference to other applications including IMT that remains unresolved, the interfering satellite system is obliged to immediately cease communications (Emission/Reception) with low power devices located in the national territory(ies) of the affected administration(s).
- In such cases of unresolved interference, the concerned CEPT regulatory authority(ies) can request removal by the ECC of the satellite system from Annex 2.

ANNEX 2: LIST OF SATELLITE SYSTEMS DECLARING COMPLIANCE WITH REQUIREMENTS OF ANNEX 1

ECC considers the following satellite systems to be compliant with the technical and operational conditions of Annex 1, for which the notifying administrations have confirmed compliance in a commitment letter.

Satellite system/ Operator	Notifying administration / ITU name of the frequency assignment	ITU E-communication reference of the commitment letter from the notifying administration (Satellite emission PFD compliance)	Reference of the authorisation or the ITU E-communication commitment letter from the notifying administration on involuntarily received signals by satellites
Lacuna Space	Germany / LS-4	C-D-25060008 dated 2 June 2025	C-D-25060008 dated 2 June 2025
Connecta IoT / Plan-S	Türkiye / Connecta IoT	C-TUR-25060153 dated 3 June 2025 C-TUR-25060408 dated 5 June 2025	C-TUR-25060153 dated 3 June 2025 C-TUR-25060408 dated 5 June 2025
Fossa Systems	Spain / FOSSASAT-2E	C-E-26021083 dated 12 February 2026	C-E-26021083 dated 12 February 2026
Note: this table is available in EFIS in the satellite section.			

ANNEX 3: LIST OF REFERENCES

[1] ERC Recommendation 70-03: “Relating to the use of Short Range Devices (SRD)”, approved 1997, latest amendment February 2025

[2] ECC Report 357: “Regulatory analyses of satellite use in the band 862-870 MHz to communicate with terrestrial SRD”, approved June 2024

[3] Commission Implementing Decision (EU) 2025/105 of 22 January 2025 amending Decision 2006/771/EC updating harmonised technical conditions in the area of radio spectrum use for short-range devices and repealing Implementing Decision 2014/641/EU on harmonised technical conditions of radio spectrum use by wireless audio programme making and special events equipment in the Union

[4] ETSI EN 300 220: ”Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz”