



ECC Decision (23)01

On the use of the band 40.5-42.5 GHz by earth stations in the fixed-satellite service (space-to-Earth) and broadcasting-satellite service and on the use of the band 42.5-43.5 GHz by earth stations in the fixed-satellite service (Earth-to-space)

approved 7 July 2023

EXPLANATORY MEMORANDUM

1 INTRODUCTION

This Decision addresses the use of the band 40.5-42.5 GHz by uncoordinated and coordinated earth stations of the fixed-satellite service (FSS) (space-to-Earth) and broadcasting-satellite service (BSS), and the use of the band 42.5-43.5 GHz by coordinated earth stations of the fixed-satellite service (Earth-to-space), operating in geostationary-satellite orbit (GSO) and non-GSO satellite systems.

2 BACKGROUND

The bands 40.5-42.5 GHz and 42.5-43.5 GHz covered by this Decision are allocated on a primary basis in the Radio Regulations [1] to several radiocommunication services, including the fixed service, land mobile service, broadcasting service, radioastronomy service, broadcasting-satellite service and fixed-satellite service.

In November 2022, ECC adopted ECC Decision (22)06 [2] on harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz. ECC also withdrew ERC Decision (99)15 which previously designated the 40.5-43.5 GHz band for multimedia wireless systems (MWS) and/or Point-to-Point (P-P) Fixed Wireless Systems (see ECC Decision (22)05 [3]). The implementation of MFCN including IMT-2020/5G systems in CEPT countries should support the provision of mobile high data rate applications in the band 40.5-43.5 GHz.

Satellite systems are also a key medium for the delivery of future telecommunication services enabling communication to rapidly be established over wide areas. As there may be a limited number of hotspots in rural areas, it is not expected that the band will be used for contiguous wide/nationwide coverage of MFCN, and therefore complementary satellite coverage could be needed. The band 40.5-42.5 GHz (space-to-Earth) could be used by uncoordinated earth stations under the condition that they cannot claim protection from terrestrial systems.

The bands 40.5-42.5 GHz (space-to-Earth) and 42.5-43.5 GHz (Earth-to-space) could also be used by coordinated FSS gateways. ECC has adopted ECC Recommendation (22)01 [4] providing guidelines to support the introduction of MFCN in 40.5-43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5-43.5 GHz and the possibility for future deployment of these earth stations.

3 REQUIREMENT FOR AN ECC DECISION

In order to provide a clear regulatory framework for future investment and deployment of fixed, broadcasting, broadcasting-satellite and fixed-satellite systems, and to facilitate the use of transportable and uncoordinated FSS terminals and coordinated earth stations, an ECC Decision is necessary for the frequency range 40.5 - 43.5 GHz.

ECC recognises that:

- the authorisation regimes are decided at national level in particular in response to market demand;
- administrations need flexibility to adapt their use of the band 40.5-43.5 GHz to national circumstances due to the current fixed links usage and MFCN usage implementation;
- administrations need to maintain the possibility for operation/deployment of existing and future FSS earth stations;
- administrations need to protect radio astronomy service (RAS) sites in 42.5-43.5 GHz from the emissions of FSS earth stations.

ECC DECISION OF 7 JULY 2023 ON THE USE OF THE BAND 40.5-42.5 GHZ BY EARTH STATIONS IN THE FIXED-SATELLITE SERVICE (SPACE-TO-EARTH) AND BROADCASTING-SATELLITE SERVICE AND ON THE USE OF THE BAND 42.5-43.5 GHZ BY EARTH STATIONS IN THE FIXED-SATELLITE SERVICE (EARTH-TO-SPACE) (ECC DECISION (23)01)

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that the band 40.5-42.5 GHz is allocated on a primary basis in the Radio Regulations [1] to the fixed service, the land mobile service, the broadcasting service, the broadcasting-satellite service and the fixed-satellite service (space-to-Earth), and the band 42.5-43.5 GHz is allocated to the mobile service, the fixed service, the radioastronomy service and the fixed-satellite service (Earth-to-space);
- b) that ECC Recommendation (01)04 [5] provides guidelines for the accommodation and assignment of frequencies for applications in the fixed service in the frequency band 40.5-43.5 GHz;
- c) that ECC Decision (22)06 [2] designates the frequency band 40.5-43.5 GHz on a non-exclusive basis to mobile/fixed communications networks (MFCN);
- d) that ECC Decision (22)06 [2] does not preclude the use of the band by other services to which the band is allocated, and administrations should maintain the possibility of existing and future FSS earth stations to operate in the band accordingly;
- e) that the MFCN deployment in the frequency band 40.5-43.5 GHz may be less dense in rural areas where uncoordinated earth stations in 40.5-42.5 GHz could provide complementary satellite coverage;
- f) that this band could also offer an important resource for individually coordinated FSS earth stations;
- g) that ECC Recommendation (22)01 [4] provides guidelines to support the introduction of MFCN in 40.5 - 43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5 - 43.5 GHz and the possibility for future deployment of these earth stations, addressing both GSO and non-GSO satellite systems;
- h) that Report ITU-R SM.2091 [7] and Recommendation ITU-R SM.1633-0 [8] provide compatibility analysis between RAS systems operating in the 42.5-43.5 GHz band and FSS and BSS (space-to-Earth) systems operating in the 41.5-42.5 GHz band;
- i) that RR No. 5.551H and RR No. 5.551I [1] apply to space stations communicating with receiving earth stations in the band 42-42.5 GHz;
- j) that in EU/EFTA countries the radio equipment that is under the scope of this Decision shall comply with the Radio Equipment (RE) Directive [6]. Conformity with the essential requirements of the RE Directive may be demonstrated by compliance with the applicable harmonised European standard(s), cited in the Official Journal (OJ) of the European Union, or by using the other conformity assessment procedures set out in the RE Directive;

DECIDES

1. that in the band 40.5-42.5 GHz, uncoordinated earth stations in the fixed-satellite service (space-to-Earth) or broadcasting-satellite service shall not claim protection from stations of the fixed, broadcasting and land mobile services;
2. that CEPT administrations shall:
 - a) designate the band 40.5-42.5 GHz on a non-exclusive basis for the use of uncoordinated earth stations in the fixed-satellite service (space-to-Earth) and in the broadcasting-satellite service, taking into account Decides 1;

- b) designate the band 40.5-42.5 GHz on a non-exclusive basis for the use of coordinated earth stations in the fixed-satellite service (space-to-Earth) and in the broadcasting-satellite service;
 - c) designate the band 42.5-43.5 GHz on a non-exclusive basis for the use of coordinated earth stations in the fixed-satellite service (Earth-to-space);
3. that administrations intending to authorise FSS earth stations to use the band 42.5-43.5 GHz shall implement, on a case by case basis, suitable coordination zones around current and future RAS stations (see Annex 1);
 4. that this Decision replaces ECC Decision (02)04 which is hereby withdrawn;
 5. that this Decision will enter into force on 7 July 2023;
 6. that the preferred date for implementation of this Decision shall be 7 January 2024;
 7. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented.”

Note:

Please check the Office documentation database <https://docdb.cept.org/> for the up to date position on the implementation of this and other ECC Decisions.

ANNEX 1: RADIOASTRONOMY STATIONS CAPABLE OF OPERATING IN THE BAND 42.5-43.5 GHZ

Table 1 shows a list of RAS sites which are currently operating or capable of operating in the band 42.5-43.5 GHz. Administrations will need to determine the specific radio astronomy stations in their territory which require protection from FSS earth stations in their territory. FSS operators will need to check the RAS protection requirements with the relevant administrations.

Table 1: List of RAS stations capable of operating in the band 42.5-43.5 GHz

Station Name	Responsible Administration	Location	
		Latitude	Longitude
Metsahovi	Finland	60° 13' 05" N	24° 23' 36" E
Plateau de Bure	France	44° 38' 02" N	05° 54' 28" E
Effelsberg	Germany	50° 31' 29" N	06° 53' 01" E
Noto	Italy	36° 52' 33" N	14° 59' 20" E
Sardinia	Italy	39° 29' 34" N	09° 14' 42" E
Medicina	Italy	44° 31' 15" N	11° 38' 49" E
Torun	Poland	53° 05' 43" N	18° 33' 46" E
Santa Maria	Portugal	36° 59' 07" N	25° 07' 33" W
Pico Veleta	Spain	37° 03' 58" N	03° 23' 34" W
Yebes	Spain	40° 31' 29" N	03° 05' 13" W
Onsala	Sweden	57° 23' 45" N	11° 55' 35" E
Cambridge	United Kingdom	52° 09' 59" N	00° 02' 20" E

ANNEX 2: LIST OF REFERENCES

- [1] ITU Radio Regulations, Edition of 2020
- [2] [ECC Decision \(22\)06](#): “Harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 40.5-43.5 GHz”, approved November 2022
- [3] [ECC Decision \(22\)05](#): “Withdrawal of ERC Decision (99)15 on the designation of the harmonised frequency band 40.5 to 43.5 GHz for the introduction of Multimedia Wireless Systems (MWS) and Point-to-Point (PtP) Fixed Wireless Systems”, approved November 2022
- [4] [ECC Recommendation \(22\)01](#): “Guidelines to support the introduction of MFCN in 40.5-43.5 GHz while ensuring, in a proportionate way, the use of FSS receiving earth stations in the frequency band 40.5-42.5 GHz and the use of FSS transmitting earth stations in the frequency band 42.5-43.5 GHz and the possibility for future deployment of these earth stations”, approved November 2022
- [5] [ECC Recommendation \(01\)04](#): “Recommended guidelines for the accommodation and assignment of multimedia wireless systems (MWS) and point-to-point (P-P) fixed wireless systems in the frequency band 40.5-43.5 GHz”, approved May 2014
- [6] Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC
- [7] Report ITU-R SM.2091: “Studies related to the impact of active space services allocated in adjacent or nearby bands on radio astronomy service”
- [8] Recommendation ITU-R SM.1633-0, Annex 18: “Compatibility analysis between RAS systems operating in the 42.5-43.5 GHz band and FSS and BSS”