



ECC Decision (06)10

Transition of terrestrial service operations from the Bands 1980-2010 MHz and 2170-2200 MHz in order to facilitate the Harmonised Introduction and Development of Systems in the mobile-satellite service including those supplemented by a Complementary Ground Component

approved 01 December 2006

latest amended 04 March 2022

EXPLANATORY MEMORANDUM FM

1 INTRODUCTION

In ECC Decision (06)09 (amended 5 September 2007) [1] the ECC designated the bands 1980-2010 MHz and 2170-2200 MHz to the mobile-satellite service (MSS), with the possibility to incorporate a complementary ground component (CGC). MSS systems were subsequently deployed in these bands and are currently providing commercial services to customers within CEPT administrations, with both of these MSS systems using or planning to use CGC.

This ECC Decision ensures that the operation and development of the MSS systems providing services in the designated bands 1980-2010 MHz and 2170-2200 MHz would not be constrained by, or suffer interference from, the operation of terrestrial services within the CEPT.

2 BACKGROUND

In the Table of Frequency Allocations contained in Article 5 of the Radio Regulations of the International Telecommunication Union (ITU) [2], the 1980-2010 MHz and 2170-2200 MHz bands are allocated on a co-primary basis to the MSS, the fixed service (FS) and the mobile service (MS). Additionally, in some CEPT administrations, the use of tactical radio relay systems in these bands was identified.

By its nature the operation of mobile satellite systems cannot be limited on a national basis, and it also requires common frequency blocks to be made available in adjacent geographical areas. Furthermore, it is recognised that sharing between terrestrial services and the MSS in these bands is considered difficult. This is reflected in:

- *Considering l) of ECC Decision (06)09, which provides that “the co-frequency operation of mobile satellite systems with respect to terrestrial mobile systems has been studied in similar frequency bands within the ECC and has proven to be unfeasible (see ECC Report 45 [3]) unless there are separation distances, in the order of several hundreds of kilometres, between the respective service areas”;*
- *Considering d) of Resolution 716 (Rev.WRC-2000), which provides that “the studies made have shown that, while sharing of the MSS with the fixed service in the short to medium term would be generally feasible, in the long term sharing will be complex and difficult in both bands, so that it would be advisable to transfer the fixed service stations operating in the bands in question to other segments of the spectrum”.*

Additionally, Resolution 212 (Rev.WRC-19) provides guidance to concerned administrations on the implementation of technical and operational measures to facilitate coexistence between terrestrial and satellite components of International Mobile Telecommunications in the frequency bands 1980-2010 MHz and 2170-2200 MHz.

In order to facilitate the harmonised introduction and development of mobile satellite systems, transitional arrangements for the transfer of fixed services and of tactical radio relay systems from the affected frequency bands were established in 2006 with the adoption of the first version of this ECC Decision. However, some continued use of the band by terrestrial services was identified, which led to the amendment of this ECC Decision in 2017 to provide a further extension to administrations to transition fixed services and tactical radio relay systems from the 1980-2010 MHz and 2170-2200 MHz bands.

As of 2020, there are some CEPT administrations which have still not made the band available for MSS systems on their territories and additionally some which are currently operating terrestrial systems in these bands. Furthermore, a continued risk remains that administrations authorise new fixed or mobile services in the 1980-2010 MHz and 2170-2200 MHz bands. This can result in constraints on or obstruction of the operation of MSS systems in the territories of the same and other administrations in the CEPT. The most significant and problematic situation occurs in case of uplink interference into the satellite receiver in the band 1980-2010 MHz, as interference from the territory of one CEPT administration may constrain the services provided on the territories of all other CEPT administrations. For example, studies carried out regarding coexistence between International Mobile Telecommunications (IMT) and MSS systems under agenda item 9, issue 9.1.1 (WRC-19) demonstrated that terrestrial IMT deployments may lead to a high level of interference into the satellite receivers.

There is also a lack of an international regulatory framework to facilitate coexistence between MSS and terrestrial services in case of uplink interference, as there are no ITU Radio Regulations (RR) Article 9 coordination procedures that address potential interference from terrestrial services in one country into a satellite receiver serving other countries. RR Article 21 limits the emissions of terrestrial stations, but these limits do not adequately protect satellite uplinks in cases where a large number of terrestrial stations produce aggregate interference into the satellite (as demonstrated by studies performed under agenda item 9, issue 9.1.1 of WRC-19).

No terrestrial applications for harmonised use of the bands 1980-2010 MHz or 2170-2200 MHz have been proposed in CEPT, but some administrations may wish to consider at a national level other standalone terrestrial use (i.e. terrestrial systems which are not complementary to the MSS system), where technical studies demonstrate that operation is feasible without harming MSS/CGC operations.

Therefore, an ECC framework is required to ensure that the operation and development of the Mobile-Satellite Service would not be constrained by, or suffer interference from, the operation of either fixed or mobile services within CEPT administrations.

3 REQUIREMENT FOR AN ECC DECISION

The MSS systems designated to operate in the bands 1980-2010 MHz and 2170-2200 MHz are already providing commercial services which involve the territories of CEPT administrations. Both of these MSS systems are using or planning to use a CGC.

In the absence of technical studies demonstrating that operation is feasible without harming MSS/CGC operations, any authorisation provided to fixed service or mobile service networks within CEPT administrations may constrain or obstruct the operation of the MSS systems in these frequency bands and thereby risk impacting on the commercial services being provided over the MSS systems. As not all CEPT administrations have made the bands available for the MSS and due to the lack of an international regulatory framework to facilitate coexistence between MSS and terrestrial networks, an ECC Decision is required to ensure continued operation and development of MSS systems in the 1980-2010 MHz and 2170-2200 MHz bands.

ECC DECISION OF 01 DECEMBER 2006 ON TRANSITION OF TERRESTRIAL SERVICE OPERATIONS FROM THE BANDS 1980-2010 MHz AND 2170-2200 MHz IN ORDER TO FACILITATE THE HARMONISED INTRODUCTION AND DEVELOPMENT OF SYSTEMS IN THE MOBILE SATELLITE SERVICE INCLUDING THOSE SUPPLEMENTED BY A COMPLEMENTARY GROUND COMPONENT (ECC/DEC/(06)10), AMENDED 03 MARCH 2017, AMENDED 04 MARCH 2022

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that WRC-95 allocated the band 1980-2010 MHz to the MSS in the Earth-to-space direction and allocated the band 2170-2200 MHz to the MSS in the space-to-Earth direction with a date of entry into force of the allocations of 1 January 2000 in Regions 1 and 3;
- b) that the bands 1980-2010 MHz and 2170-2200 MHz are also allocated to the FS and the MS;
- c) that ITU Radio Regulations Resolution 212 (Rev. WRC-19) [2] applies to the use of these bands by the satellite and terrestrial components of IMT, and Resolution 716 (Rev. WRC-2000) contains transitional arrangements related to the use of these bands by the FS;
- d) that ECC Decision (06)09 “on the Designation of the bands 1980-2010 MHz and 2170-2200 MHz for use by systems in the Mobile Satellite Service including those supplemented by a Complementary Ground Component” [1] has been adopted in order to facilitate the harmonised introduction of mobile satellite systems in Europe;
- e) that satellite systems are operating in the bands 1980-2010 MHz and 2170-2200 MHz and are providing commercial services to customers within CEPT;
- f) that the use of the above bands by the MSS is subject to coordination under the relevant provisions of Article 9 of the ITU Radio Regulations, noting however that there are no Article 9 coordination procedures to address potential interference from terrestrial services into the satellite uplink in the 1980-2010 MHz band;
- g) that studies have shown that sharing between the mobile-satellite service and the fixed service or tactical radio relay systems in these bands is not feasible;
- h) that the co-frequency operation of mobile satellite systems with standalone terrestrial mobile systems (i.e. mobile systems which are not complementary to the MSS system) has been studied in similar frequency bands within the ECC and has proven to be unfeasible (see ECC Report 45) unless there are separation distances in the order of several hundreds of kilometres, between the respective service areas;
- i) that studies conducted under issue 9.1.1 of agenda item 9.1 (WRC-19) indicated that there is potential for harmful interference from terrestrial IMT systems to MSS space stations in the band 1980-2010 MHz;
- j) that following WARC-92 many European administrations established a moratorium on new fixed service networks in the 2 GHz bands allocated to the MSS. The moratorium was associated with plans to vacate these bands of existing fixed service networks by around the year 2005;
- k) that the bands 1980-2010 MHz and 2170-2200 MHz are still used by some CEPT administrations for terrestrial services and as a consequence are not totally available for use by mobile satellite systems within some CEPT administrations;
- l) that the viable operation of mobile satellite systems requires common frequency blocks to be made available in adjacent geographical areas and that common harmonised frequency solutions are required in Europe;

DECIDES

1. that in order to protect the operation and ensure the continued development of MSS systems of operating in the 1980-2010 MHz and 2170-2200 MHz bands in accordance with ECC Decision (06)09 [1], CEPT **administrations shall**:
 - a) ensure that no standalone terrestrial systems (including, but not limited to, mobile, fixed, troposcatter and tactical radio relay systems) are operated in these bands without demonstrating compatibility with MSS/CGC through prior sharing studies;
 - b) terminate the operation of any existing standalone terrestrial systems in these bands for which compatibility with MSS/CGC has not been demonstrated, as soon as possible;
2. that this Decision shall **enter into force** on 04 March 2022;
3. that CEPT Member **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: LIST OF REFERENCES

- [1] [ECC Decision \(06\)09](#): “The designation of the bands 1980-2010 MHz and 2170-2200 MHz for use by systems in the Mobile-Satellite Service including those supplemented by a Complementary Ground Component (CGC)”, approved December 2006 and amended 5 September 2007
- [2] ITU Radio Regulations, Edition of 2020
- [3] [ECC Report 45](#): “Sharing and adjacent band compatibility between UMTS/IMT-2000 in the band 2500-2690 MHz and other services”, approved April 2004