

# DECISIONS

## COMMISSION IMPLEMENTING DECISION (EU) 2018/661

of 26 April 2018

**amending Implementing Decision (EU) 2015/750 on the harmonisation of the 1 452-1 492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union as regards its extension in the harmonised 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands**

*(notified under document C(2018) 2286)*

**(Text with EEA relevance)**

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision) <sup>(1)</sup>, and in particular Article 4(3) thereof,

Whereas:

- (1) Decision No 243/2012/EU of the European Parliament and of the Council <sup>(2)</sup> establishes a multiannual radio spectrum policy programme (RSPG) which sets the target of identifying at least 1 200 MHz of spectrum suitable for wireless broadband in the Union by 2015, including spectrum already in use, on the basis of the spectrum inventory.
- (2) In its Opinion on strategic challenges facing Europe in addressing the growing spectrum demand for wireless broadband <sup>(3)</sup> dated 20 February 2013, the Radio Spectrum Policy Group (RSPG) recommended assessing the 1 427-1 452 MHz frequency band for wireless broadband use after 2015 as an extension of the band 1 452-1 492 MHz. Furthermore, in its opinion the RSPG highlighted challenges in the potential designation of the 1 427-1 452 MHz and 1 492-1 518 MHz frequency bands for wireless broadband, caused by incumbent military use and terrestrial fixed wireless services. The RSPG proposed further consideration of the 1 492-1 518 MHz frequency band dependent on the outcome of the World Radiocommunications Conference in 2015 (WRC-15).
- (3) WRC-15 identified the 1 427-1 452 MHz and 1 492-1 518 MHz frequency bands for International Mobile Telecommunications worldwide. In Region 1 of the International Telecommunications Union, including the European Union, those frequency bands, or portions of them respectively, are allocated to the mobile service except the aeronautical mobile service and to the fixed service, and to the space operation service Earth-to-space, on a co-primary basis. In addition, some Member States have designated the frequency band 1 452-1 518 MHz for programme making and special events usage.
- (4) On 15 March 2017, pursuant to Article 4(2) of the Radio Spectrum Decision, the Commission gave the European Conference of Postal and Telecommunications Administrations (CEPT) a mandate to develop harmonised technical conditions in additional frequency bands in the 1,5 GHz frequency range, namely 1 427-1 452 MHz and 1 492-1 518 MHz, in order to promote using them for terrestrial wireless broadband electronic communications services in the Union.
- (5) On 16 November 2017, in response to that mandate, CEPT issued its Report 65 <sup>(4)</sup>, which proposes harmonised technical conditions for downlink-only wireless broadband electronic communication services in the 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands, taking into account the Union-wide designation

<sup>(1)</sup> OJ L 108, 24.4.2002, p. 1.

<sup>(2)</sup> Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy program (OJ L 81, 21.3.2012, p. 7).

<sup>(3)</sup> Document RSPG 13-521 rev1.

<sup>(4)</sup> CEPT Report 65, approved on 17 November 2017, corrected on 2 March 2018.

of the 1 452-1 492 MHz frequency band under harmonised technical conditions for terrestrial systems capable of providing electronic communications services pursuant to Commission Implementing Decision (EU) 2015/750 <sup>(1)</sup>.

- (6) Union-wide designation of the 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands for downlink-only wireless broadband electronic communications services should contribute to achieving the RSPP spectrum target for wireless broadband by adding 50 MHz of spectrum. Downlink-only use is important for addressing data traffic asymmetry by enhancing the downlink capability of wireless broadband systems, including for the provision of 5G services.
- (7) In the line with the recommendations of the CEPT Report 65, Member States should have national flexibility to use portions of the 1 427-1 452 MHz and the 1 492-1 517 MHz frequency bands in order to cater for international military agreements <sup>(2)</sup> or to respond – in a time-limited manner – to specific national needs for the continued operation of terrestrial fixed wireless services. In this regard, the Report emphasises that co-frequency operation of mobile and fixed services is not feasible. In consequence, the refarming process of these bands at national level to make them available in response to national demand for downlink-only wireless broadband electronic communications services is a complex process in need of an appropriate time frame.
- (8) When exercising national flexibility, Member States should give preference to the availability of contiguous spectrum for downlink-only wireless broadband electronic communications services, including the 1 452-1 492 MHz frequency band, so as to facilitate larger channel bandwidths of 5G services, economies of scale for equipment, coexistence with services in adjacent bands as well as frequency coordination.
- (9) Without prejudice to the right of Member States to organise spectrum use for the purpose of public order, public security and defence under Article 1(4) of the Radio Spectrum Decision, Member States should designate the 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands for downlink-only wireless broadband electronic communications services to the maximum extent possible.
- (10) The provision of downlink-only wireless broadband electronic communications services in the whole 1 427-1 517 MHz frequency band should be based on a consistent harmonised channelling arrangement and minimal, that is to say, least restrictive, technical conditions to foster the single market, mitigate harmful interference and ensure frequency coordination.
- (11) The technical conditions and arrangements delivered through the CEPT Report 65 also provide for co-existence between wireless broadband services and services in adjacent bands.
- (12) In particular, the technical conditions and arrangements, such as limits to unwanted emission power, ensure that wireless broadband use in the 1 427-1 517 MHz frequency band provides appropriate protection of radio astronomy and passive earth exploration satellite services in the 1 400-1 427 MHz frequency band, and of mobile satellite services in the 1 518-1 559 MHz frequency band. Further measures may be needed at national level to enhance coexistence with services in the adjacent 1 400-1 427 MHz and 1 518-1 559 MHz frequency bands, such as around airports seaports and ground stations used for receiving Search and Rescue signals relayed via satellite. In addition, improvements in the receiver performance of mobile earth stations are needed in line with the objectives and requirements of Directive 2014/53/EU of the European Parliament and of the Council <sup>(3)</sup>.
- (13) Taking into account the lack of use of portions of the 1 452-1 492 MHz frequency band for terrestrial broadcasting systems, existing regulatory constraints regarding co-existence with such services in this band should be removed to allow for the deployment of downlink-only wireless broadband electronic communications services.
- (14) Cross-border frequency coordination agreements between administrations may be necessary to ensure implementation of the parameters set by this Decision with the aim of enhancing downlink-only wireless broadband electronic communications services in the 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands so as to

<sup>(1)</sup> Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1 452-1 492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union (OJ L 119, 12.5.2015, p. 27).

<sup>(2)</sup> The frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are used for land and maritime military systems according to the 2014 NATO Joint Civil/Military Frequency Agreement (NFJA). According to point 14 of the agreement '(...) Where usage of radio frequency bands has been harmonised by NATO and NATO member nations for military use this does not exclude the utilisation for civil applications'.

<sup>(3)</sup> 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 (OJ L 153, 22.5.2014, p. 62).

avoid harmful interference and improve the efficiency of spectrum use. Cross-border frequency coordination agreements with respect to aeronautical telemetry services should be addressed between CEPT administrations concerned on a bi-lateral or a multi-lateral basis.

- (15) The measures provided in this Decision should be applied by Member States with the ultimate objective to ensure take-up of the full 1 427-1 517 MHz frequency band or, in the absence of national demand, a portion thereof, for downlink-only wireless broadband electronic communications services in order to contribute, as much as possible, to the fulfilment of the RSPP spectrum target.
- (16) Member States should report to the Commission on the implementation of the Decision and the use of the band in order to facilitate an assessment of its impact at Union level as well as its timely review, when necessary. In particular, the justification for exercising national flexibility in making available spectrum in the 1 427-1 452 MHz or the 1 492-1 517 MHz frequency bands should be kept under scrutiny on a biennial basis. Furthermore, Member States should report biennially on national measures enhancing coexistence with the radio astronomy and passive earth exploration satellite services, in the 1 400-1 427 MHz frequency band, and of mobile satellite services in the 1 518-1 559 MHz frequency band.
- (17) The measures provided for this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

#### *Article 1*

Implementing Decision (EU) 2015/750 is amended as follows:

- (1) the title is replaced by the following: '**Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1 427-1 517 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union**';

- (2) Article 1 is replaced by the following:

*'Article 1*

This Decision is aimed at harmonising the conditions for the availability and efficient use of the 1 427-1 517 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union.';

- (3) in Article 2, paragraph 2 is replaced by the following:

'2. No later than 1 October 2018, Member States shall designate and make available, on a non-exclusive basis, the 1 427-1 452 MHz and the 1 492-1 517 MHz frequency bands, or a portion thereof, for terrestrial systems capable of providing wireless broadband electronic communications services, in compliance with the parameters set out in the Annex.';

- (4) in Article 2, paragraph 3 is replaced by the following:

'3. If they designate and make available only a portion of the 1 427-1 452 MHz or of the 1 492-1 517 MHz frequency bands in accordance with paragraph 2, Member States:

- (a) shall ensure that any existing use is maintained to the extent strictly necessary, and with the aim to progressively make these bands available for terrestrial systems capable of providing wireless broadband electronic communications services;
- (b) shall ensure that such spectrum portion primarily constitutes together with the 1 452-1 492 MHz frequency band a contiguous frequency band;
- (c) may allow, up to 1 January 2023, and longer if no national demand has been identified for wireless broadband electronic communications services in accordance with Articles 3 and 6 of Decision No 243/2012/EU, the use of part of these bands for the continued operation of existing terrestrial fixed wireless services or of other existing use, which cannot share the use of these bands with wireless broadband electronic communications services.';

(5) in Article 2, the following paragraph 4 is added:

‘4. Member States shall ensure that the terrestrial systems referred to in this Article give appropriate protection to systems in adjacent bands.’;

(6) in Article 2, the following paragraph 5 is added:

‘5. Member States shall facilitate cross-border coordination agreements so as to enable operation of systems referred to in paragraph 1, 2 and 3, taking into account existing regulatory procedures and rights, and relevant international agreements.’;

(7) the following Article 2a is added:

*‘Article 2a*

Member States shall review the application of Article 2 on a biennial basis, in order to ensure maximum availability of the 1 427-1 517 MHz frequency band for wireless broadband electronic communications services.’;

(8) Article 4 is replaced by the following:

*‘Article 4*

Member States shall monitor the use of the 1 427-1 517 MHz frequency band and report their findings to the Commission upon request or at their own initiative in order to allow timely review of this Decision, where necessary.’;

(9) the following Article 4a is added:

*‘Article 4a*

Member States shall report to the Commission on the application of this Decision, including the extent of availability of the 1 427-1 452 MHz and 1 492-1 517 MHz frequency bands, on 1 November 2018 at the latest.’;

(10) the Annex to Implementing Decision (EU) 2015/750 is replaced by the text in the Annex to this Decision.

*Article 2*

This Decision is addressed to the Member States.

Done at Brussels, 26 April 2018.

*For the Commission*  
Mariya GABRIEL  
*Member of the Commission*

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## ANNEX

## ‘ANNEX

## PARAMETERS REFERRED TO IN ARTICLE 2(1) AND 2(2)

## A. GENERAL PARAMETERS

1. The mode of operation within the 1 427-1 517 MHz frequency band shall be limited to base station (“downlink-only”) transmission.
2. Block sizes within the 1 427-1 517 MHz frequency band shall be assigned in multiples of 5 MHz. The lower frequency limit of an assigned block shall be aligned with or spaced at multiples of 5 MHz from the lower band edge of 1 427 MHz.
3. Base station transmission shall comply with the technical conditions (block edge masks) set out in this annex.

## B. TECHNICAL CONDITIONS FOR BASE STATIONS — BLOCK EDGE MASK

The following technical parameters for base stations called “block edge mask” (BEM) shall be used in order to ensure coexistence between neighbouring networks in the absence of bilateral or multilateral agreements between operators of such neighbouring networks. Less stringent technical parameters, if agreed among the operators or administrations concerned, may also be used provided that these parameters comply with the technical conditions applicable for the protection of other services or applications, including in adjacent bands or subject to cross-border obligations.

The BEM is an emission mask that is defined as a function of frequency in relation to the edge of a block of spectrum for which rights of use are granted to an operator. It consists of in-block and out-of-block power limits. The in-block power limit is applied to a block owned by an operator. The out-of-block power limits are applied to spectrum used for WBB ECS within the 1 427-1 517 MHz frequency band which is outside a block granted to an operator. They are set out in Table 2. The out-of-band power limits are applied to spectrum outside the portion of the 1 427-1 517 MHz frequency band, which is used for WBB ECS at national level.

Furthermore, coexistence power limits are defined for wireless broadband electronic communications services (WBB ECS) within the 1 427-1 517 MHz band in order to ensure compatibility between these services and other radio services or applications, including when a portion of the 1 427-1 452 MHz and the 1 492-1 517 MHz bands is not designated for WBB ECS. The co-existence power limits with regard to services or applications in the adjacent bands (i.e. outside the spectrum used for WBB ECS) are set out in Table 3, 4, and 5 and also cater for national flexibility in assigning spectrum for WBB ECS within the 1 427-1 517 MHz frequency band pursuant to this Decision.

Additional technical or procedural measures <sup>(1)</sup> or both may be applied at national level to ensure coexistence with services and applications in the adjacent bands.

**In-block requirements**

An in-block equivalent isotropically radiated power (EIRP) limit for base stations is not obligatory except for the 1 512-1 517 MHz frequency block, for which such a limit is given in Table 1. For frequency blocks other than the 1 512-1 517 MHz frequency block, Member States may set an EIRP limit not exceeding 68 dBm/5 MHz which can be increased for specific deployments, for example for the aggregated use of spectrum within the 1 427-1 512 MHz band and spectrum in lower frequency bands.

<sup>(1)</sup> For instance, one or more of the following: frequency planning coordination, site coordination, more stringent in-band power limits for base stations, more stringent out-of-band equivalent isotropically radiated power limits for base stations than stipulated in Table 5.

Table 1

**Maximum in-block EIRP per cell <sup>(1)</sup> for WBB ECS base stations operating in the 1 512-1 517 MHz**

Frequency block	Maximum in-block EIRP	Measurement bandwidth
1 512-1 517 MHz	58 dBm	5 MHz

<sup>(1)</sup> In a multi-sector site, the value per “cell” corresponds to the value for one of the sectors.

*Explanatory note to Table 1*

These requirements are intended to ensure compatibility between WBB ECS operating in the 1 512-1 517 MHz frequency block and mobile satellite services operating in the 1 518-1 525 MHz frequency band.

**Out-of-block requirements**

Table 2

**Base station BEM out-of-block EIRP limits per antenna within the 1 427-1 517 MHz frequency band**

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
– 10 to – 5 MHz from lower block edge	11 dBm	5 MHz
– 5 to 0 MHz from lower block edge	16,3 dBm	5 MHz
0 to + 5 MHz from upper block edge	16,3 dBm	5 MHz
+ 5 to + 10 MHz from upper block edge	11 dBm	5 MHz
Frequencies within the 1 427-1 517 MHz band spaced more than 10 MHz from the lower or upper block edge	9 dBm	5 MHz

**Coexistence requirements for adjacent bands**

Table 3

**Base station unwanted emission power limits in the 1 400-1 427 MHz frequency band for base stations operating in the 1 427-1 452 MHz frequency band**

Frequency range of out-of-band emissions	Maximum unwanted emission power level <sup>(1)</sup>	Measurement bandwidth
1 400-1 427 MHz	– 72 dBW	27 MHz

<sup>(1)</sup> The unwanted emission power level is to be understood here as the level measured at the antenna port.

*Explanatory note to Table 3*

This requirement is intended to protect radio astronomy and passive earth exploration satellite services in the 1 400-1 427 MHz passive frequency band from WBB ECS operating in the 1 427-1 452 MHz frequency band, including when only a portion of this frequency band is assigned for WBB ECS. Further national measures may be needed to improve protection of radio astronomy observations in passive frequency band 1 400-1 427 MHz from WBB ECS.

Table 4

**Base station out-of-band EIRP limits per cell <sup>(1)</sup> in the 1 518-1 559 MHz frequency range for base stations operating in 1 492-1 517 MHz frequency band**

Frequency range of out-of-band emissions	Maximum out-of-band EIRP	Measurement bandwidth
1 518 - 1 520 MHz	- 0,8 dBm	1 MHz
1 520 - 1 559 MHz	- 30 dBm	1 MHz

<sup>(1)</sup> In a multi-sector site, the value per "cell" corresponds to the value for one of the sectors.

*Explanatory note to Table 4*

These requirements are intended to provide appropriate protection of mobile satellite services operating in the 1 518-1 559 MHz frequency band, in particular at sea ports, airports and search and rescue ground stations of the mobile satellite service, from WBB ECS operating in the 1 492-1 517 MHz frequency band, including when only a portion of this frequency band is assigned for WBB ECS. Further national measures may be needed to improve protection of mobile satellite services in the band 1 518-1 559 MHz.

Table 5

**Base station out-of-band EIRP limits per cell below 1 452 MHz and above 1 492 MHz for base stations operating in the 1 452-1 492 MHz frequency band**

Frequency range of out-of-band emissions	Maximum mean out-of-band EIRP	Measurement bandwidth
Below 1 449 MHz	- 20 dBm	1 MHz
1 449-1 452 MHz	14 dBm	3 MHz
1 492-1 495 MHz	14 dBm	3 MHz
Above 1 495 MHz	- 20 dBm	1 MHz

*Explanatory note to Table 5*

These requirements are applicable when WBB ECS are not deployed either below 1 452 MHz or above 1 492 MHz, or both. They are intended to ensure compatibility of WBB ECS within the 1 452-1 492 MHz frequency band with coordinated fixed links, mobile services and aeronautical telemetry services limited to ground stations, deployed in adjacent frequency bands below 1 452 MHz or above 1 492 MHz.

When WBB ECS are deployed within the blocks immediately below 1 452 MHz, the limits indicated in Table 5 for frequencies below 1 452 MHz are not applicable. When WBB ECS are deployed within the blocks immediately above 1 492 MHz, the limits indicated in Table 5 for frequencies above 1 492 MHz are not applicable. This is without prejudice to the out-of-band requirements laid down in Tables 3 and 4 and to the out-of-block requirements laid down in Table 2.