

**COMMISSION IMPLEMENTING DECISION (EU) 2017/191****of 1 February 2017****amending Decision 2010/166/EU, in order to introduce new technologies and frequency bands for mobile communication services on board vessels (MCV services) in the European Union***(notified under document C(2017) 450)***(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) Commission Decision 2010/166/EU <sup>(2)</sup> sets technical and operational conditions necessary to allow the use of GSM on board vessels (MCV services) in the Union.
- (2) The development of enhanced means of communications supported by technical progress can improve the capacity for all citizens to be connected everywhere and at all times in line with the Radio Spectrum Policy Programme established by Decision No 243/2012/EU of the European Parliament and of the Council <sup>(3)</sup> and contribute to the implementation of the Digital Single Market. Moreover, spectrum should be used in accordance with the principles of technology and service neutrality set out in Directive 2002/21/EC of the European Parliament and of the Council <sup>(4)</sup>.
- (3) Decision 2010/166/EU calls on the Member States to keep under review the use of the 900 MHz and 1 800 MHz bands by systems providing MCV services in their territorial seas, in particular with regard to the continued relevance of all the conditions in that Decision and to instances of harmful interference. Member States are also required to submit to the Commission a report on their findings and the Commission should, where appropriate, review Decision 2010/166/EU.
- (4) The reports provided by Member States to the Commission have strongly confirmed the need to allow new communication technologies for MCV use.
- (5) In order to facilitate further deployment of MCV applications in the Union, the Commission gave a mandate on 16 November 2015 to the European Conference of Postal and Telecommunications Administrations ('the CEPT') in accordance with Article 4(2) of Decision No 676/2002/EC to examine the possibility for coexistence of seaborne devices using LTE technology with terrestrial electronic communications networks operating in the 1 710-1 785/1 805-1 880 MHz and 2 500-2 570/2 620-2 690 MHz bands and the coexistence of seaborne devices using UMTS technology with terrestrial electronic communications networks operating in the 1 920-1 980/2 110-2 170 MHz bands.
- (6) Following that mandate, the CEPT adopted on 17 June 2016 its report 62 which concluded that it would be possible to operate MCV, provided that the relevant technical conditions are met, using LTE technology in the 1 710-1 785/1 805-1 880 MHz and 2 500-2 570/2 620-2 690 MHz bands and UMTS technology in the 1 920-1 980/2 110-2 170 MHz band. Therefore, Decision 2010/166/EU should be amended based on the results of CEPT report 62 to include those technologies and frequencies and allow the use of systems based on these technologies on board vessels.

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

<sup>(2)</sup> Commission Decision 2010/166/EU of 19 March 2010 on harmonised conditions of use of radio spectrum for mobile communication services on board vessels (MCV services) in the European Union (OJ L 72, 20.3.2010, p. 38).

<sup>(3)</sup> Decision No 243/2012/EU of the European Parliament and of the Council of 14 March 2012 establishing a multiannual radio spectrum policy programme (OJ L 81, 21.3.2012, p. 7).

<sup>(4)</sup> Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (OJ L 108, 24.4.2002, p. 33).

- (7) Without prejudice to the requirements set out in the Annex, and in order to protect other authorised uses of spectrum, Member States may place additional geographic restrictions on the operation of the MCV system in their territorial sea.
- (8) Considering the importance of the UMTS and LTE technologies for wireless communications in the Union, the possibility to use MCV LTE systems and MCV UMTS systems as described in this Decision should apply as early as possible and not later than 6 months after the date of notification of this Decision.
- (9) MCV technical specifications should remain under review in order to ensure that they match technological progress.
- (10) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

#### Article 1

Decision 2010/166/EU is amended as follows:

1. Article 1 is replaced by the following:

##### *Article 1*

The purpose of this Decision is to harmonise the technical conditions for the availability and efficient use of the 900 MHz, 1 800 MHz, 1 900/2 100 MHz, 2 600 MHz frequency bands for systems providing mobile communications on board vessels services within territorial seas in the Union.’

2. Article 2 is amended as follows:

- (a) point 1 is replaced by the following:

‘1. “mobile communication services on board vessels (MCV services)” means electronic communication services, as defined in Article 2(c) of Directive 2002/21/EC of the European Parliament and of the Council (\*), provided by an undertaking to enable persons on board a vessel to communicate via public communication networks using a system subject to Article 3 without establishing direct connections with land-based mobile networks;

(\*) Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) (OJ L 108, 24.4.2002, p. 33).’;

- (b) point 7 is replaced by the following:

‘7. “vessel base transceiver station (vessel BS)” means a mobile pico-cell located on a vessel and supporting GSM, LTE or UMTS services in compliance with the Annex to this Decision;’;

- (c) the following points are added:

‘8. “the 1 900/2 100 MHz bands” means the 1 920-1 980 MHz band for uplink (terminal transmit, base station receive) and 2 110-2 170 MHz band for downlink (base station transmit, terminal receive);

9. “the 2 600 MHz band” means the 2 500-2 570 MHz band for uplink (terminal transmit, base station receive) and 2 620-2 690 MHz band for downlink (base station transmit, terminal receive);

10. "LTE system" means an electronic communications network as defined in the Annex to Commission Implementing Decision 2011/251/EU (\*);

11. "UMTS system" means an electronic communications network as defined in the Annex to Implementing Decision 2011/251/EU.

(\*) Commission Implementing Decision 2011/251/EU of 18 April 2011 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1 800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community (OJ L 106, 27.4.2011, p. 9).

3. Article 3 is replaced by the following:

*Article 3*

1. Member States shall make available at least 2 MHz of spectrum in the uplink direction and 2 MHz of corresponding paired spectrum in the downlink direction within the 900 and/or 1 800 MHz bands for GSM systems providing MCV services on a non-interference and non-protected basis in their territorial seas.

2. As early as possible, and 6 months after the date of notification of this Decision at the latest, Member States shall make available 5 MHz of spectrum in the uplink direction and 5 MHz of corresponding paired spectrum in the downlink direction within the 1 900/2 100 MHz bands for UMTS systems and within the 1 800 and 2 600 MHz bands for LTE systems providing MCV services on a non-interference and non-protected basis in their territorial seas.

3. Member States shall ensure that the systems covered by paragraphs 1 and 2 comply with the conditions set out in the Annex.

4. Article 4 is replaced by the following:

*Article 4*

Member States shall keep under review the use of the frequency bands by the systems providing MCV services in their territorial seas, which are referred to in Article 3(1) and (2), in particular with regard to the continued relevance of all the conditions set out in Article 3 and to instances of harmful interference.

5. The Annex is replaced by the text in the Annex to this Decision.

*Article 2*

This Decision is addressed to the Member States.

Done at Brussels, 1 February 2017.

*For the Commission*

Andrus ANSIP

*Vice-President*

## ANNEX

## ANNEX

**Conditions to be met by a system providing MCV services in the territorial seas of the Member States of the European Union, in order to avoid harmful interference to land-based mobile networks**

- (1) Conditions to be met by GSM systems operating in the 900 MHz band and 1 800 MHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) the system providing MCV services shall not be used closer than 2 nautical miles <sup>(1)</sup> from the baseline, as defined in the United Nations Convention on the Law of the Sea;
- (b) only indoor vessel-BS antenna(s) shall be used between 2 and 12 nautical miles from the baseline;
- (c) limits to be set for mobile terminals when used on board vessel and for vessel-BS:

Parameter	Description
Transmit power/power density	For mobile terminals used on board vessels and controlled by the vessel-BS in the 900 MHz band, maximum radiated output power: 5 dBm
	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1 800 MHz band, maximum radiated output power: 0 dBm
	For base stations on board vessels, the maximum power density measured in external areas of the vessel, with reference to a 0 dBi measurement antenna gain: – 80 dBm/200 kHz
Channel access and occupation rules	Techniques to mitigate interference that provide at least equivalent performance to the following mitigation factors based on GSM standards shall be used: <ul style="list-style-type: none"> <li>— between 2 and 3 nautical miles from the baseline, the receiver sensitivity and the disconnection threshold (ACCMIN <sup>(1)</sup> and min RXLEV <sup>(2)</sup> level) of the mobile terminal used on board vessel shall be equal to or higher than – 70 dBm/200 kHz and between 3 and 12 nautical miles from the baseline equal to or higher than – 75 dBm/200 kHz,</li> <li>— discontinuous transmission <sup>(3)</sup> shall be activated in the MCV system uplink direction,</li> <li>— the timing advance <sup>(4)</sup> value of the vessel-BS shall be set to the minimum.</li> </ul>

<sup>(1)</sup> ACCMIN (RX\_LEV\_ACCESS\_MIN); as described in GSM standard ETSI TS 144 018.

<sup>(2)</sup> RXLEV (RXLEV-FULL-SERVING-CELL); as described in GSM standard ETSI TS 148 008.

<sup>(3)</sup> Discontinuous transmission, or DTX; as described in GSM standard ETSI TS 148 008.

<sup>(4)</sup> Timing advance; as described in GSM standard ETSI TS 144 018.

- (2) Conditions to be met by UMTS systems in the 1 900/2 100 MHz bands providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) the system providing MCV services shall not be used closer than 2 nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;

<sup>(1)</sup> One nautical mile = 1 852 metres

- (b) only indoor vessel-BS antenna(s) shall be used between 2 and 12 nautical miles from the baseline;
- (c) only bandwidth up to 5 MHz (duplex) can be used;
- (d) limits to be set for mobile terminals when used on board vessel and for vessel-BS:

Parameter	Description
Transmit power/power density	For mobile terminals transmitting in the 1 900 MHz band used on board vessels and controlled by the vessel-BS transmitting in the 2 100 MHz band, maximum radiated output power: 0 dBm/5 MHz
Emissions on deck	The vessel-BS emission on deck shall be equal or below – 102 dBm/5 MHz (Common Pilot Channel)
Channel access and occupation rules	Between 2 and 12 nautical miles from the baseline, the quality criteria (minimum required received signal level in the cell) shall be equal to or higher than: – 87 dBm/5 MHz
	The Public Land Mobile Network selection timer shall be set to 10 minutes
	The timing advance parameter shall be set according to a cell range for the MCV distributed antenna system equal to 600 m
	The Radio Resource Control user inactivity release timer shall be set to 2 seconds
Non alignment with land networks	MCV carrier centre frequency shall not be aligned with land network carriers

- (3) Conditions to be met by LTE systems in the 1 800 MHz band and 2 600 MHz band providing MCV services in the territorial seas of the Member States, in order to avoid harmful interference to land-based mobile networks

The following conditions shall apply:

- (a) the system providing MCV services shall not be used closer than 4 nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;
- (b) only indoor vessel-BS antenna(s) shall be used between 4 and 12 nautical miles from the baseline;
- (c) only a bandwidth of up to 5 MHz (duplex) can be used per frequency band (1 800 MHz and 2 600 MHz);
- (d) limits to be set for mobile terminals when used on board vessel and for vessel-BS:

Parameter	Description
Transmit power/power density	For mobile terminals used on board vessels and controlled by the vessel-BS in the 1 800 MHz band and 2 600 MHz band, maximum radiated output power: 0 dBm
Emissions on deck	The vessel-BS emission on deck shall be equal or below – 98 dBm/5 MHz (equivalent to – 120 dBm/15 kHz)

Parameter	Description
Channel access and occupation rules	Between 4 and 12 nautical miles from the baseline, the quality criteria (minimum required received signal level in the cell) shall be equal to or higher than – 83 dBm/5 MHz (equivalent to – 105 dBm/15 kHz)
	The Public Land Mobile Network selection timer shall be set to 10 minutes
	The timing advance parameter shall be set according to a cell range for the MCV distributed antenna system equal to 400 m
	The Radio Resource Control user inactivity release timer shall be set to 2 seconds
Non alignment with land networks	MCV carrier centre frequency shall not be aligned with land network carriers'