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RADIO SPECTRUM COMMITTEE

Working Document

Subject: Draft Commission Implementing Decision amending Decision 2010/166/EU on MCV

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Draft Commission Implementing Decision

amending Decision 2010/166/EU on harmonised conditions of use of radio spectrum for mobile communication services on board vessels (MCV services) in the European Union

(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 (the Radio Spectrum Decision)¹, and in particular Article 4(3) thereof,

Whereas:

- (1) Commission Decision 2010/166/EU sets technical and operational conditions necessary to allow the use of GSM on board vessels (MCV services) in the European Union.
- (2) The development of enhanced means of communications supported by technical progress would improve the capacity for all citizens to be connected everywhere and at all time in line with the Radio Spectrum Policy Programme set by the Decision 243/2012 of the European Parliament and of the Council² and would contribute to the implementation of the Digital Single Market. Moreover, spectrum should be used in line with the principles of technology and service neutrality set by Article 9 paragraphs 3 and 4 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 as modified by Directive 2009/140/EC³.
- (3) Under Decision 2010/166/EU, Member States shall keep the use of the 900 MHz and 1800 MHz bands by systems providing MCV services in their territorial seas under review, in particular with regard to the continued relevance of all the conditions in that decision and to instances of harmful interference, and to submit to the Commission a report on their findings with regard to such review and the Commission should, where appropriate, proceed with such review.
- (4) The reports provided by Member States to the Commission strongly confirmed the need to allow new communication technologies for MCV use.
- (5) In order to facilitate further deployment of MCV applications in the European Union, the Commission therefore gave a mandate on 16 November 2015 to the European Conference of Postal and Telecommunications Administrations ('the CEPT') pursuant to Article 4.2 of Decision 676/2002/EC to examine the possibility for coexistence of seaborne devices using LTE technology with terrestrial electronic communications networks operating in the 1710-1785 / 1805-1880 MHz and 2500-2570 / 2620-2690 MHz bands and seaborne devices using UMTS technology with terrestrial electronic communications networks operating in the 1920-1980 / 2110-2170 MHz bands.

¹ OJ L 108, 24.4.2002, p. 1

² OJ L 81, 21.3.2012, p.7

³ OJ L 337, 18.12.2009, p.37.

- (6) Pursuant to that mandate, the CEPT adopted on 17 June 2016 its report 62 which concluded on the possibility to operate MCV, subject to relevant technical conditions, using LTE technology in the 1710-1785/1805-1880 MHz and 2500-2570/2620-2690 MHz bands and UMTS technology in the 1920-1980/2110-2170 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.
- (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 System in their territorial sea.
- (8) 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 six months after the date of notification of this Decision considering the importance of the UMTS and LTE technologies for wireless communications in the Union.
- (9) MCV technical specifications should remain under review to continuously 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:

The purpose of this decision is to harmonise the technical conditions for the availability and efficient use of the 900 MHz, 1800 MHz, 1900/2100 MHz, 2600 MHz frequency bands for systems providing mobile communications on board vessels services within territorial seas in the European Union.

2. In Article 2,

(a) point 1 is replaced by the following:

'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 Council⁴, 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;

(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 line with the annex to this decision.

(c) the following points are added:

8. 'the 1900/2100 MHz bands' means the 1920-1980 MHz band for uplink (terminal transmit, base station receive) and 2110-2170 MHz band for downlink (base station transmit, terminal receive);

9. 'the 2600 MHz band' means the 2500-2570 MHz band for uplink (terminal transmit, base station receive) and 2620-2690 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/EU⁵.

⁴ OJ L 108, 24.4.2002, p.33.

⁵ OJ L 106, 27.4.2011, p.9.

11. 'UMTS system' means an electronic communications network as defined in the annex to Commission implementing decision 2011/251/EU.

4. Article 3 is replaced as follows:

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 1800 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 no later than six months after the date of notification of this Decision, 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 1900/2100 MHz bands for UMTS systems and within the 1800 and 2600 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 to this Decision.

5. Article 4 is replaced as follows:

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

6. 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,

For the Commission

[...]

Günther Oettinger

Member of the Commission

ANNEX

to the Commission implementing decision amending Decision 2010/166/EU on harmonised conditions of use of radio spectrum for mobile communication services on board vessels (MCV services) in the European Union

ANNEX

1. Conditions to be met by GSM systems operating in the 900 MHz band and 1800 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 be met:

1. The system providing MCV services shall not be used closer than two nautical miles⁶ from the baseline, as defined in the United Nations Convention on the Law of the Sea;
2. Only indoor vessel-BS antenna(s) shall be used between two and twelve nautical miles from the baseline;
3. 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 1800 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: - between two and three nautical miles from the

⁶ One nautical mile = 1852 metres

	<p>baseline, the receiver sensitivity and the disconnection threshold (ACCMIN⁷ and min RXLEV⁸ level) of the mobile terminal used on board vessel shall be equal to or higher than -70 dBm/200 kHz and between three and twelve nautical miles from the baseline equal to or higher than -75 dBm/200 kHz ;</p> <ul style="list-style-type: none"> - discontinuous transmission⁹ shall be activated in the MCV system uplink direction; - the timing advance¹⁰ value of the vessel-BS shall be set to the minimum.
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2. Conditions to be met by UMTS systems in the 1900/2100 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 be met:

1. The system providing MCV services shall not be used closer than two nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;
2. Only indoor vessel-BS antenna(s) shall be used between two and twelve nautical miles from the baseline;
3. Only bandwidth up to 5 MHz (duplex) can be used;
4. Limits to be set for mobile terminals when used on board vessel and for vessel-BS.

Parameter	Description
Transmit power / power density	<p>For mobile terminals in the 1900 MHz band used on board vessels and controlled by the vessel-BS in the 2100 MHz band, maximum radiated output power:</p> <p>0 dBm / 5 MHz</p>
Emissions on deck	<p>The vessel-BS emission on deck shall be equal or below - 102 dBm / 5 MHz (Common Pilot Channel)</p>

⁷ ACCMIN (RX_LEV_ACCESS_MIN); as described in GSM standard ETSI TS 144 018

⁸ RXLEV (RXLEV-FULL-SERVING-CELL); as described in GSM standard ETSI TS 148 008

⁹ Discontinuous transmission, or DTX; as described in GSM standard ETSI TS 148 008

¹⁰ Timing advance; as described in GSM standard ETSI TS 144 018

Channel access and occupation rules	Between two and twelve 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
	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 equals to 600m
	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 1800 MHz band and 2600 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 be met:

1. The system providing MCV services shall not be used closer than four nautical miles from the baseline, as defined in the United Nations Convention on the Law of the Sea;
2. Only indoor vessel-BS antenna(s) shall be used between four and twelve nautical miles from the baseline;
3. Only a bandwidth of up to 5MHz (duplex) can be used per frequency band (1800 MHz and 2600 MHz);
4. 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 1800 MHz band and 2600 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 / 15kHz)
Channel access and occupation rules	Between four and twelve 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 / 15kHz)
	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 400m
	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