



**Decision to make the Wireless  
Telegraphy (Mobile Communication  
Services on Ships) (Exemption)  
Regulations 2017**  
Implementing a Commission  
Decision

**Statement**

**Publication date:**

**17 July 2017**

# About this document

This statement relates to Ofcom's decision to make new regulations by statutory instrument that would enable passengers to connect their mobile devices (with 2G, 3G and 4G technologies) to a system providing mobile communication on board ships, if certain standards and requirements are met, without the need for a wireless telegraphy licence. These regulations implement a recent decision by the European Commission, and replace similar exemption regulations we made in 2011.

To give proper effect to the European Commission decision, it is also necessary to vary ship radio wireless telegraphy licences in order to ensure that operators comply with the new technical and operational requirements. This will be implemented through a Notice of Variation to the ship licence.

The Regulations will come into force on 2 August 2017.

# Contents

Section		Page
1	Executive summary	1
2	Background	3
3	Scope of the 2017 Regulations	6
Annex		Page
1	Abbreviations	9

## Section 1

# Executive summary

- 1.1 This document sets out our decision to implement the requirements of the European Commission (“**EC**”) Implementation Decision of 1 February 2017 (2017/191/EU) (the “**Amending Decision**”).<sup>1</sup> by making the Wireless Telegraphy (Mobile Communication Services on Ships) (Exemption) Regulations 2017 (the “**2017 Regulations**”). The Regulations will revoke and replace the Wireless Telegraphy (Mobile Communication Services on board Ships) (Exemption) Regulations 2011, SI 2011/316 (the “**2011 Regulations**”).<sup>2</sup>
- 1.2 Mobile communication services on board vessels (“**MCV**”) enable ship passengers or crew to use their own mobile apparatus (mobile devices such as handsets, tablets or laptop dongles) without connecting directly with land mobile networks. MCV systems consist of one or more picocell base stations (“**vessel-BS**”) on board a ship providing access to a core network via a backhaul link (for example, via satellite) to which the mobile apparatus used by passengers must connect to. The MCV operates, in essence, similar to a land base station providing connectivity to passengers when the ship is in international waters or in areas of territorial seas<sup>3</sup>, where there is insufficient or no land based mobile network coverage.
- 1.3 The use of mobile apparatus connecting to MCV systems has been permitted on a licence exempt basis since 10 March 2011 through the 2011 Regulations; however, the exemption was only allowed in the 880 to 915 MHz and 925 MHz to 960 MHz (the “**900 MHz frequency band**”) and 1710 to 1785 MHz and 1805 to 1880 MHz (the “**1800 MHz frequency band**”) using the Global System for Mobile communication (“**GSM**”), i.e. 2G technology.
- 1.4 In light of the development of new communication technologies and frequency bands, the EC adopted the Amending Decision to introduce, additionally to current 2G technologies, the use of Universal Mobile Telecommunications Service (“**UMTS**”)—a 3G technology—operating in the 1920 to 1980 MHz and 2110 to 2170 MHz (the “**2100 MHz frequency band**”) and Long Term Evolution (“**LTE**”)—a 4G technology—operating in the 1800 MHz band, and 2500 MHz to 2570 MHz and 2620 MHz to 2690 MHz (the “**2.6 GHz frequency band**”), for MCV services. As a European Union (“**EU**”) Member State, the UK is currently bound by the terms of the Amending Decision and the requirement to implement them by 3 August 2017.
- 1.5 Ofcom is responsible for authorising use of the radio spectrum. We can permit the use of the radio spectrum either by granting wireless telegraphy licences under the Wireless Telegraphy Act 2006 (the “**WT Act**”) or by making statutory regulations exempting users of particular equipment from the requirement to hold such a licence. It is unlawful and an offence to install or use wireless telegraphy apparatus without holding a licence granted by Ofcom, unless the use of such equipment is exempted.<sup>4</sup>
- 1.6 In order to meet the requirements of the Amending Decision, we have decided to extend the current licence exemption arrangements for MCV services by making the 2017 Regulations. They will continue to exempt the use of any apparatus on board a

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<sup>1</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017D0191&from=EN>

<sup>2</sup> [http://www.legislation.gov.uk/uksi/2011/316/pdfs/ukxi\\_20110316\\_en.pdf](http://www.legislation.gov.uk/uksi/2011/316/pdfs/ukxi_20110316_en.pdf)

<sup>3</sup> As defined in the United Nations Convention on the Law of the Sea.

<sup>4</sup> Section 8(1) of the WT Act.

ship which is registered in the British Islands and within the limits of the British Islands and their adjacent territorial waters (including when such a ship is, for the time being, beyond the British Islands and their adjacent territorial waters).

- 1.7 Furthermore, in summary, the 2017 Regulations will:
- i) revoke and replace the 2011 Regulations;
  - ii) continue to permit, on a licence exempt basis, the use of GSM technologies connecting to MCV systems in the 900 MHz and 1800 MHz bands (subject to complying with various terms, provisions and limitations);
  - iii) extend the licence exemption regime to cover the use of UMTS 2100 MHz and LTE 1800 MHz and 2.6 GHz bands to connect to MCV services (subject to complying with various terms, provisions and limitations); and
  - iv) specify new technical parameters that the MCV systems in the UMTS 2100 MHz LTE 1800 MHz and 2.6 GHz bands must meet in order to be exempt from the need to hold a wireless telegraphy licence.
- 1.8 Separately to ship passengers' use of the mobile apparatus, the deployment and use of the vessel-BS is itself subject to separate requirements under wireless telegraphy licences. Specifically, the use of MCV systems is authorised under Ofcom's practice via a Notice of Variation ("NoV") to the existing ship wireless telegraphy licences.<sup>5</sup> We have, however, amended the existing NoV in line with the Amending Decision. The NoV sets out the new technical conditions and operational requirements under which MCV systems would be licensed for operation in a UK ship.
- 1.9 Before deciding to make the 2017 Regulations, in accordance with the requirements of section 122(4) and (5) of the WT Act, we published on 31 May 2017<sup>6</sup> our statutory notice setting out our proposals to make them (the "Notice"). The Notice contained a draft of the proposed regulations. It invited by 3 July 2017 any comments from stakeholders on the proposed regulations.
- 1.10 We received no comments on the proposed regulations. We made the 2017 Regulations on 12 July 2017. This Statement confirms that the 2017 Regulations will come into force on 2 August 2017.<sup>7</sup>

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<sup>5</sup> As with all radio equipment on a ship, holders of the relevant wireless telegraphy licences are responsible for the installation, operation of the on board MCV radio equipment and the avoidance of interference to land systems. However, there is no mandatory requirement on ship operators to install these systems on their ships.

<sup>6</sup> [https://www.ofcom.org.uk/\\_data/assets/pdf\\_file/0015/102453/Mobile-Communication-Services-on-Ships-Exemption-Regulations-2017.pdf](https://www.ofcom.org.uk/_data/assets/pdf_file/0015/102453/Mobile-Communication-Services-on-Ships-Exemption-Regulations-2017.pdf)

<sup>7</sup> Copies of the 2017 Regulations can be obtained through the National Archives. A link to the online version can be found at <http://www.legislation.gov.uk/>.

## Section 2

# Background

## MCV systems

- 2.1 As explained in Section 1, MCV services enable persons on board a ship to send and receive calls, data and text messages using their own mobile apparatus (mobile devices such as handsets, tablets or laptop dongles) without connecting directly with land mobile networks. Cargo ships can also use MCV services for continuous monitoring of a container's temperature and humidity so that the quality of merchandise can be verified from a distance at any time.
- 2.2 We have also explained in Section 1 that MCV systems consist of one or more picocell base stations (i.e. vessel-BS) on board a ship providing access to a core network via a backhaul link (for example, via satellite) to which the mobile apparatus used by passengers must connect to. The MCV system operates, in essence, similar to a land base station providing connectivity to passengers when the ship is in international waters or in areas of territorial seas,<sup>8</sup> where there is insufficient or no land based mobile network coverage.
- 2.3 From a spectrum management perspective, it is necessary to ensure that MCV services do not generate any harmful interference to land based networks and to prevent connection to MCV systems when connection to land based mobile networks is possible. EU Member States are required to make MCV services available on a non-protected, non-interference basis according to specified technical conditions and the harmonised European Telecommunications Standards Institute ("ETSI") standards. However, there is no mandatory requirement for ship operators to install MCV systems. Ultimately, any decisions to roll out or deploy MCV services is the responsibility of the ship master or operator.
- 2.4 The use of the vessel-BS is itself subject to the separate licensing requirement of section 8(1) of the WT Act.<sup>9</sup> Specifically, as explained in Section 1, the use of vessel-BS on a ship is authorised under Ofcom's practice via a NoV to the existing ship WT Act licence which set out the new technical conditions and operational requirements under which MCV systems would be licensed for operation in a UK ship. We believe that this approach enables the master to control the use of the vessel-BS and to issue instructions to limit its use or turn it off.

## Background to the EC's Amending Decision

- 2.5 On 19 March 2010, the EC published a decision (2010/166/EU) (the "**2010 MCV Decision**")<sup>10</sup>, which set out the technical and operational conditions necessary to allow the use of the GSM 2G technology on board a ship when connecting to a MCV service operating in the 900 MHz frequency band and the 1800 MHz frequency band.
- 2.6 As explained in Section 1, we implemented the 2010 MCV Decision by making the 2011 Regulations. The 2011 Regulations permit persons on MCV equipped ships using GSM mobile apparatus operating in 900 MHz and 1800 MHz frequency bands,

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<sup>8</sup> As defined in the United Nations Convention on the Law of the Sea.

<sup>9</sup> It is unlawful and an offence to install or use wireless telegraphy apparatus without holding a licence granted by Ofcom, unless the use of such equipment is exempted.

<sup>10</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010D0166&from=EN>

to be exempt from the requirement to be licensed in accordance with section 8 of the WT Act.

- 2.7 In light of advancements in technology and increasing demand of users of mobile apparatus to be connected everywhere and at all times, and in order to facilitate further deployment of new communication technologies and frequency bands, the EC issued a mandate to the European Conference of Postal and Telecommunications Administrations (“**CEPT**”) to undertake technical studies on whether seaborne apparatus using the UMTS 3G technology operating in the 2100 MHz frequency band and using the LTE 4G technology operating in the 1800 MHz frequency band and the 2.6 GHz frequency band can coexist with land-based networks.
- 2.8 The CEPT produced CEPT Report 62<sup>11</sup> that concluded that it would be possible to extend MCV services to other frequency bands and newer technologies using UMTS in 2100 MHz frequency band and LTE in both 1800 MHz and 2.6 GHz frequency bands, provided that certain operational and technical conditions are met. The EC adopted the CEPT by making the Amending Decision.
- 2.9 Accordingly, the Amending Decision extends the harmonisation of MCV services to cover 3G technology in the 2100 MHz frequency band and 4G technology in the 1800 MHz and 2.6 GHz frequency bands, on an MCV equipped ship. As a EU Member State, the UK is currently bound by the terms of the Amending Decision and the requirement to implement them by 3 August 2017.

## Our Notice of proposed regulations

- 2.10 We make exemption regulations by means of a statutory instrument. Before making any such regulations, we are required by section 122(4) of the WT Act to give notice of our proposal to do so. Under section 122(5), the notice must state that we propose to make the regulations in question, set out their general effects, specify an address from which a copy of the proposed regulations or order may be obtained, and specify a time period of at least one month during which any representations with respect to the proposal must be made to us.
- 2.11 On 31 May 2017, we published a consultation document entitled ‘Notice of proposal to make the Wireless Telegraphy (Mobile Communication Services on Ships) (Exemption) Regulations 2017’ (i.e. the Notice), meeting the statutory requirements explained above. The Notice set out our intention to implement the Amending Decision by making the 2017 Regulations 2017. The Notice included a copy of the draft regulations and it gave any person who wished to do so until 3 July 2017 to make representations.
- 2.12 In particular, the Notice proposed to:
- i) revoke and replace the 2011 Regulations;
  - ii) continue to permit, on a licence exempt basis, the use of GSM technologies connecting to MCV systems in the 900 MHz and 1800 MHz bands (subject to complying with various terms, provisions and limitations);

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<sup>11</sup> <http://www.erodocdb.dk/Docs/doc98/official/pdf/CEPTREP062.PDF>

- iii) extend the licence exemption regime to cover the use of UMTS 2100 MHz and LTE 1800 MHz and 2.6 GHz bands to connect to MCV services (subject to complying with various terms, provisions and limitations); and
- iv) specify new technical parameters that the MCV systems in the UMTS 2100 MHz LTE 1800 MHz and 2.6 GHz bands must meet in order to be exempt from the need to hold a wireless telegraphy licence.

2.13 In the Notice, we also set out our intention to amend the NoV in line with the Amending Decision. However, we were not seeking comments on the draft NoV as 2017 Regulations were confined to the implementation of the mandatory EU obligations in the Amending Decision, which deal with ship passengers' use of mobile apparatus. In contrast, the variation of relevant ship radio wireless telegraphy licences through an NoV is done at the request of the holders of such licences. The NoV now sets out the new technical conditions and operational requirements under which MCV systems would be licensed for operation in a UK ship, consistently with the 2017 Regulations.

2.14 As explained in Section 1, we received no comments on the proposed regulations and we made the 2017 Regulations on 12 July 2017. The scope of the 2017 Regulations is summarised in Section 3.



## Section 3

# Scope of the 2017 Regulations

3.1 This Section summarises our decision to make the 2017 Regulations.

## The Legislative Framework

3.2 We are responsible for authorising civil use of the radio spectrum and achieve this by either granting wireless telegraphy licences under the WT Act or by making regulations exempting users of particular equipment from the requirement to hold such a licence.

3.3 Under section 8(1) of the WT Act, it is an offence to install or use equipment to transmit without holding a licence granted by us, unless the use of such equipment is exempted. We can exempt the installation or use of wireless telegraphy equipment by making regulations under section 8(3) of the WT Act.

3.4 Under section 8(4) of the WT Act, we have to make regulations to exempt equipment if its installation or use is not likely to:

- involve undue interference with wireless telegraphy;
- have an adverse effect on technical quality of service;
- lead to inefficient use of the part of the electromagnetic spectrum available for wireless telegraphy;
- endanger safety of life;
- prejudice the promotion of social, regional or territorial cohesion; or
- prejudice the promotion of cultural and linguistic diversity and media pluralism.

3.5 In accordance with the requirements of section 8(3B) of the WT Act, the terms, provisions and limitations specified in the regulations must be:

- objectively justifiable in relation to the wireless telegraphy stations or wireless telegraphy apparatus to which they relate;
- not such as to discriminate unduly against particular persons or against a particular description of persons;
- proportionate to what they are intended to achieve; and
- transparent in relation to what they are intended to achieve.

## Ofcom's decision

3.6 On 12 July 2017, Ofcom made the 2017 Regulations. The 2017 Regulations will come into force on 2 August 2017. They are summarised below.

- 3.7 We are satisfied that the 2017 Regulations satisfy the conditions referred to in paragraph 4.4 above. We also consider that the 2017 Regulations meet the requirements of section 8(3B) of the WT Act because:
- they are objectively justifiable in relation to the wireless telegraphy apparatus to which they relate in that they seek to implement the requirements set out in the Amending Decision, and only exempt the use of any such apparatus on board a ship falling within our jurisdiction;
  - they do not discriminate unduly against any particular persons or against a particular description of persons, as they apply to all persons using the relevant apparatus;
  - they are proportionate in that they are effective to achieve the aims of the Amending Decision, and they are no more onerous than is required to achieve those aims; and
  - they are transparent in relation to what they are intended to achieve in that the 2017 Regulations are themselves clear in their intentions, and they seek to provide clarity on the requirements set out (and related concepts used) in the Amending Decision.

## **Extent of application**

- 3.8 The Regulations will apply in the United Kingdom, the Channel Islands and the Isle of Man.

## **The Regulations**

- 3.9 The Regulations implement the Amending Decision.
- 3.10 Regulation 1 explains that the Regulations come into force on 2 August 2017;
- 3.11 Regulation 2 revokes the 2011 Regulations.
- 3.12 Regulation 3 provides interpretation of the expressions used in the 2017 Regulations.
- 3.13 Regulation 4 exempts the use of apparatus on board a ship which is registered in the British Islands, and within the limits of the British Islands and the territorial waters adjacent thereto, or, for the time being, beyond the British Islands and the territorial waters adjacent thereto. That exemption is, however, not absolute. It only applies where the terms, provisions and limitations in regulation 5 are met.
- 3.14 Regulation 5 sets out the terms, provisions and limitations that must be met for the exemption in regulation 4 to apply to the apparatus on board a ship.
- 3.15 Regulation 5(1) provides that the exemption shall apply only if the apparatus (mobile devices such as handsets, tablets or computer dongles) operate as part of a GSM, UMTS or LTE system in specific frequency bands. These systems are defined by reference to ETSI standards specified in the 2017 Regulations. We have updated in the 2017 Regulations references to the most recent versions of the standards as published in the Official Journal of the European Union (No C180) on 8 June 2017.
- 3.16 Regulation 5(2) outlines what the apparatus must be used for and when it can be used. Regulation 5(2) therefore provides that the apparatus must only be used for

mobile communication services on board ships (as defined in regulation 3) and when the ship is at least two nautical miles from the baseline for GSM and UMTS systems and at least four nautical miles from the baseline for LTE systems.

- 3.17 Regulation 5(3) sets out specified transmit power limits that the ship base transceiver station must limit the apparatus to.
- 3.18 Regulation 5(4) provides that the apparatus must connect directly a relevant network that complies with the requirements set out in regulation 5(5) to 5(7).
- 3.19 Regulation 5(5) sets out the technical limits that the ship base transceiver station must employ in order to, in particular, mitigate interference to electronic communications networks based on land for GSM systems. They also include requirements about only using indoor antennas when the ship is between two and twelve nautical miles from the baseline, and restrictions relating to the maximum power density and receiver sensitivity.
- 3.20 Regulation 5(6) sets out technical restrictions on ship base transceiver station for LTE systems. They provide, in particular, that the ship base transceiver station must only use indoor antennas when the ship is between four and twelve nautical miles from the baseline. Also, that station is restricted to using a bandwidth no greater than 5 MHz and restricted to certain emissions and powers depending on location. They also impose a number of additional requirements that the ship transceiver station must implement, in particular to mitigate any interference to electronic communication networks based on the land. Those additional requirements include:
  - the selection timer being must be set at 10 minutes;
  - the timing advance parameter must be set according to a range of 400 metres;
  - the user inactivity release timer must be set at 2 seconds; and
  - the station's carrier centre frequency must not be aligned with electronic communication networks based on the land.
- 3.21 Regulation 5(7) sets out technical restrictions on ship base transceiver station for UMTS systems. They apply similar restrictions (with some variations) as those set out above for LTE systems.
- 3.22 Regulation 5(8) provides that the apparatus must not cause or contribute to undue interference to other wireless telegraphy. This requirement implements Article 3 of the Amending Decision.

## Annex 1

# Abbreviations

- CEPT - European Conference of Postal and Telecommunications Administrations
- EC - European Commission
- ETSI - European Telecommunications Standards Institute
- GHz - Gigahertz
- GSM - Global System for Mobile Communications
- LTE - Long Term Evolution
- MHz - Megahertz
- NoV – Notice of Variation
- UMTS - Universal Mobile Telecommunications System
- Vessel-BS – Vessel Base Station
- WT Act - Wireless Telegraphy Act 2006