



Commission for  
**Communications Regulation**

# **Mobile Communications On Board Vessels**

## **Information Notice**

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**An Coimisiún um Rialáil Cumarsáide**  
**Commission for Communications Regulation**

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## Additional Information

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# Content

<b>Section</b>	<b>Page</b>
1 Executive Summary .....	4
2 ComReg's duties and obligations in managing the radio spectrum .....	5
3 Background to MCV Regulation .....	7
3.1 MCV System Description .....	7
3.2 EU Decisions and Associated Reports.....	9
3.3 Compliance in other Member States .....	10
4 Summary of Legal Basis .....	11
5 Conclusions.....	13

# 1 Executive Summary

1. This Information notice describes the Commission for Communications Regulation ("ComReg")'s approach to regulating Mobile Communications Services on board vessels ("MCV services"), ComReg is making available the entire 900 MHz and 1800 MHz frequency bands for systems providing MCV services on a non-protected and non-interference basis in the territorial seas of Ireland. ComReg is doing this in order to ensure Ireland's compliance with the European Commission Decision 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 (the "2010 Decision")<sup>1</sup>.
2. MCV systems are systems which are intended to operate on board vessels (e.g. cruise liners, ferries, cargo ships) in the following frequency bands using GSM and UMTS technology : 880-915 MHz (uplink)/ 925-960 MHz (downlink) (the "900MHz Band") and 1710-1785 MHz (uplink)/ 1805-1880 MHz (downlink) (the "1800MHz Band") enabling the onboard use of mobile terminals which would normally be beyond the reach of the coastal coverage of land-based mobile networks.
3. In this Information notice;
  - Chapter 2; Sets out ComReg's duties and obligations in managing the radio spectrum;
  - Chapter 3; Sets out the background in terms of the international, regulatory and technical issues involved in regulating MCV services in Ireland;
  - Chapter 4; Summarises the legal basis relevant to the regulation of MCV services in Ireland;
  - Chapter 5; Presents ComReg's conclusions and how it proposes to regulate the provision of MCV services in Ireland by exempting MCV systems from Licensing under the Wireless Telegraphy Acts 1926 to 2009 ("the Act of 1926").
  - The Annex sets out the full text of the order exempting apparatus for mobile communications services on board vessels ("the Exemption Order") It is envisaged that the Exemption Order will be published within the next month.

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<sup>1</sup>2010/166/EU

## 2 ComReg's duties and obligations in managing the radio spectrum

4. ComReg is the National Regulatory Authority ("NRA") responsible for the regulation of the electronic communications sector (telecommunications, radiocommunications and broadcasting<sup>2</sup> transmission) in Ireland. The Communications Regulation Acts 2002 to 2010 (the "2002 Act"), the Framework<sup>3</sup> and Authorisation<sup>4</sup> Regulations and the Act of 1926 Act set out, amongst other things, obligations, functions and objectives of ComReg in relation to radio spectrum.
5. ComReg's functions include the management of Ireland's radio frequency spectrum in accordance with ministerial policy directions under section 13 of the 2002 Act. ComReg's objectives in carrying out that function include; ensuring the efficient management and use of the radio frequency spectrum. ComReg is obliged to ensure, amongst other things, that spectrum allocations used for electronic communications services and issuing of general authorisations or individual rights of use for such radio frequencies are based on objective, transparent, non-discriminatory and proportionate criteria. In addition, in carrying out its role in relation to radio spectrum management ComReg must, amongst other things:
  - ensure that measures taken by it are proportionate.;
  - have regard to international developments in relation to the radio frequency spectrum;
  - have regard to policy statements, published by or on behalf of the Government or a Minister of the Government and notified to ComReg, in relation to the economic and social development of the State; and
  - comply with policy directions given to ComReg by the Minister as he or she considers appropriate to be followed by the Commission in the exercise of its functions.

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<sup>2</sup> In relation to broadcasting ComReg's role primarily relates to spectrum management and assignment issues. ComReg also has responsibility for regulation of broadcasting networks, Broadcast policy is decided by the Minister for Communications, Energy and Natural Resources and content issues are regulated by the BAI.

<sup>3</sup> European Communities (Electronic Communications Networks and Services)(Framework) Regulations 2011, S.I. No. 333 of 2011 ("the Framework Regulations")

<sup>4</sup> European Communities (Electronic Communications Networks and Services)(Authorisation) Regulations 2011, S.I. No. 335 of 2011 ("the Authorisation Regulations")

6. As radio frequencies naturally extend beyond national borders, spectrum management requires an in-depth knowledge of, and involvement in, European and global spectrum management developments. Much of the radio spectrum requires international planning and, in some cases, this constrains how specific frequencies or frequency bands may be used. This is particularly so in the aeronautical and maritime sectors, where, because of the global nature of these services, ships and aircraft must use specific frequencies for navigation and communication purposes. In addition, there are a number of internationally harmonised frequencies for other radio systems including mobile phones and the TV and radio broadcasting bands. The international harmonisation of frequencies facilitates co-ordination between neighbouring countries and the development of consumer markets.
7. The global regulation of the radio spectrum is primarily within the remit of the International Telecommunication Union ("ITU"), while regional regulatory functions lie with the European Union ("EU") and the European Conference of Postal and Telecommunications Administrations ("CEPT"). These bodies<sup>5</sup> not only define the broad framework within which all spectrum users must operate, but also develop harmonised approaches to spectrum use in order to facilitate international services, open markets and minimise the risk of interference between users.
8. ComReg plays an active role, along with the Department of Communications, Energy and Natural Resources ("DCENR"), in international fora to ensure that as far as possible the international allocation of spectrum and regulatory framework accommodates Ireland's specific requirements. ComReg also participates in technical compatibility studies and in the development of technical standards to support more efficient and flexible use of the spectrum.
9. ComReg also gives due consideration to the DCENR Spectrum Policy Statement, last published in 2010<sup>6</sup>. The current statement requires that, in accordance with its functions under the 2002 Act and with due regard to the objective of ensuring the efficient management and use of the radio frequency spectrum, ComReg will manage the national radio spectrum resource in accordance with three core policy objectives and nine policy principles as detailed in that statement.

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<sup>5</sup> The role of these international bodies and further details on the national framework for spectrum management is described in more detail in Appendix A of ComReg Consultation Document "Review of the period 2008 to 2010 & Proposed Strategy for Managing the Radio Spectrum 2011 to 2013", ComReg document No. 11/28, dated 12 April 2011.

<sup>6</sup> Spectrum Policy Statement, Department of Communications, Energy and Natural Resources, September 2010.

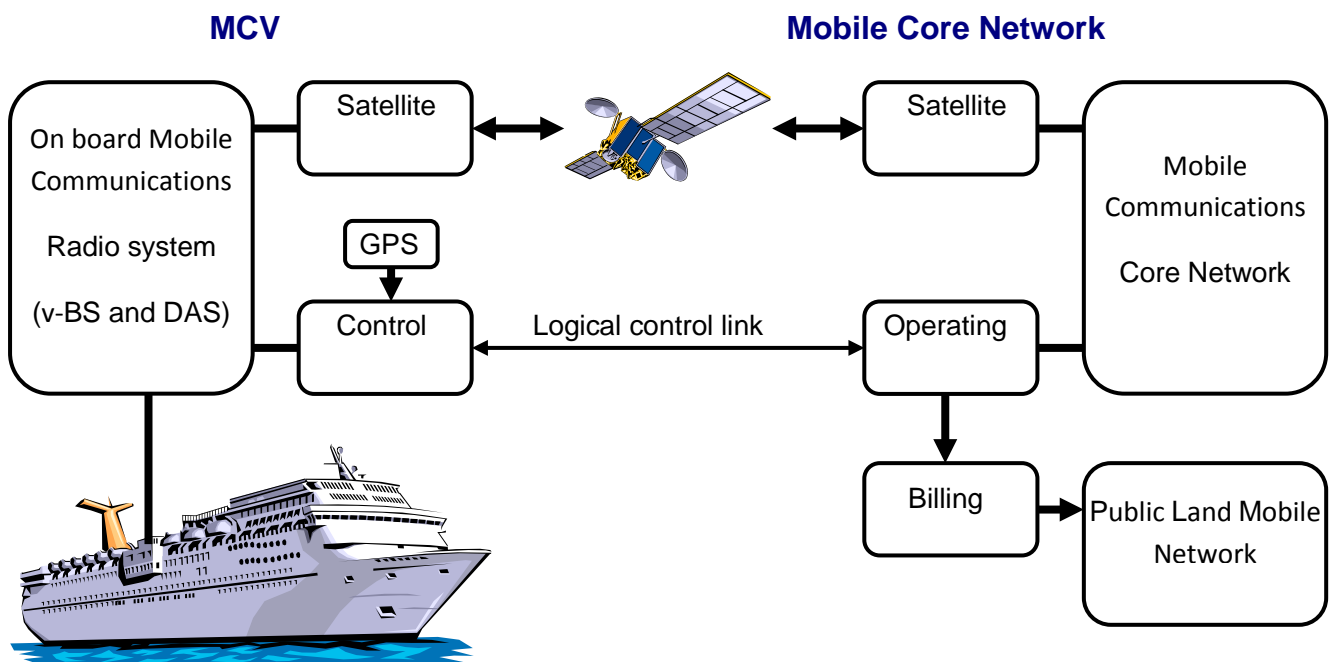
# 3 Background to MCV Regulation

## 3.1 MCV System Description

10. MCV systems are intended to operate primarily onboard commercial vessels (e.g. cruise liners, ferries, cargo ships) in the following frequency bands using GSM in the "900MHz Band") and the "1800MHz Band" thereby enabling the onboard use of mobile terminals which would normally be beyond the reach of the coastal coverage of land-based mobile networks.

11. In an MCV system, the base station located onboard the vessel ("v-BS") serves any roaming mobile stations (handsets) located onboard that vessel ("v-MS"). Typically, these are carried by passengers or crew, who desire connectivity to Mobile Communication Services similar to those provided by land based systems<sup>7</sup>.

12. The following diagram (Figure 2) shows a typical MCV system including a satellite backhaul<sup>8</sup> link which, it should be noted, is not encompassed by this Exemption Order.



**Figure 1: MCV system**

<sup>7</sup> Typically MCV systems operate in the 900 and 1800MHz bands.

<sup>8</sup> See the following Exemption Order;

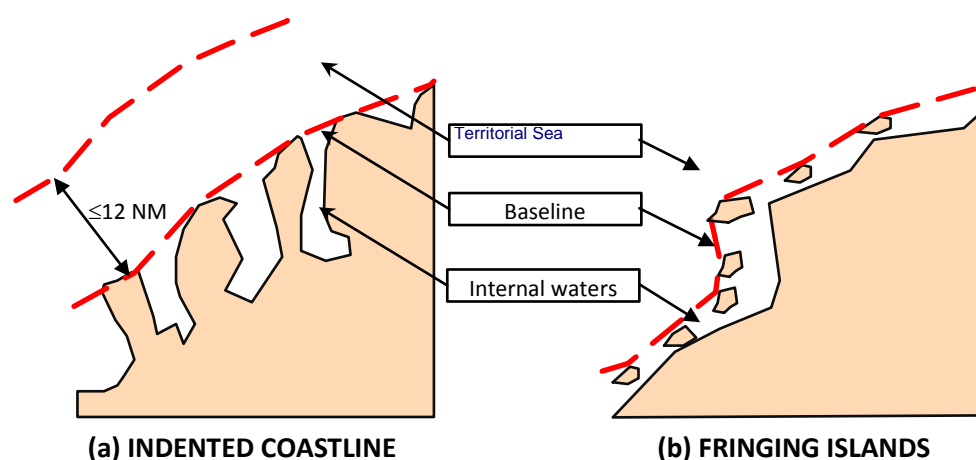
[http://www.comreg.ie/publications/si\\_343\\_of\\_2008\\_wireless\\_telegraphy\\_act\\_exemption\\_of\\_low\\_power\\_earth\\_stations\\_on\\_board\\_vessels\\_regulations\\_\\_2008.505.103173.p.html](http://www.comreg.ie/publications/si_343_of_2008_wireless_telegraphy_act_exemption_of_low_power_earth_stations_on_board_vessels_regulations__2008.505.103173.p.html)

13. The MCV related equipment installed on board a vessel typically consists of the following main parts: the control system, the satellite transceiver and modem, the Base Station (v-BS), the GPS receiver and an antenna system (which includes; cabling, couplers, filters and the antenna(s)).
14. Depending on the size of vessel a distributed antenna system ("DAS"), employing a number of low power antennas, may be used to distribute the radio signal from one or several v-BS throughout the ship to ensure the availability of coverage. Such a system allows for the independent control of antennas on a physically zoned basis. Hence, when the control system is linked with the GPS receiver the powers and sensitivities of the v-BS and v-MS can be adjusted in order to comply with the technical and regulatory requirements of the 2010 Decision. This allows external (decks)ide) antennas to be disabled within Territorial Seas. By means of the satellite backhaul, the system connects to and from the desired service provider's Mobile Core Network, and subsequently to and from other publicly available telecoms networks in the normal manner.

### Approach to regulating MCV

15. This Information notice describes ComReg's proposed approach to regulating MCV and associated apparatus, ComReg is making available the entire 900 MHz and 1800 MHz frequency bands for systems providing MCV services allowing its use on a non-protected and non-interference basis, i.e. not to claim protection from other authorised systems and not to cause interference to these other systems within the territorial seas of Ireland, as illustrated in Figure 1 below.

Fig. 2 Illustration of baseline between internal waters and the territorial sea, distances are measured



in Nautical Miles ("NM")



16.: Territorial seas, internal waters and baseline have the meanings assigned to those terms by Part 3 of the Sea-Fisheries and Maritime Jurisdiction Act 2006.

17. Maritime safety aspects (both technical and human factors related) are outside of the scope of this Information Notice and the Exemption Order, and fall under the responsibilities of the relevant maritime authorities within each administration.

### 3.2 EU Decisions and Associated Reports

18. As indicated above, this Information Notice indicates how ComReg is ensuring Ireland's compliance with the 2010 Decision..

19. Other relevant reports and decisions include:

- ERC Report 81<sup>9</sup> which considered the basic principles for spectrum sharing between the GSM and RSBN (short range aeronautical radio navigation) systems, particularly taking into account the E-GSM band.

- CEPT Report 28<sup>10</sup> presented the conclusions of technical studies undertaken by CEPT under the European Commission Mandate<sup>11</sup>. It is noted that the 2010 Decision is based on those studies and incorporated the Report's technical and operational requirements in its Annex.

20. It should be noted that CEPT Report 28 followed on from European Communications Committee (ECC) Report 122<sup>12</sup> ("ECC Report") which was approved in September 2008 and a subsequent decision of the ECC of CEPT (dated October 2008)<sup>13</sup> ("the ECC Decision"). The ECC Report studied the compatibility between MCV systems and conventional Land Based Mobile Communications networks operating in the same band as well as RSBN (short-range aeronautical radionavigation) systems operating in adjacent bands.

21. All relevant decisions and reports have been comprehensively reviewed by ComReg and taken into account in drafting the Exemption Order.

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<sup>9</sup> <http://www.erodocdb.dk/Docs/doc98/official/pdf/REP081.PDF>

<sup>10</sup> Final Report from CEPT to the European Commission in response to the EC Mandate on mobile communication services on board vessels (MCV), 1 July 2009

<sup>11</sup> European Commission Mandate to CEPT on Mobile Communications Services on Vessels 08 July 2008.

<sup>12</sup> ECC Report 122 of 22 September 2008, on the compatibility between GSM use onboard vessels and land-based networks. <http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCREP122.PDF>

<sup>13</sup> ECC DEC/(08)/08, ECC Decision of 31 October 2008 on the harmonised use of GSM system on board vessels in the frequency bands 880-915/925-960 MHz and 1710-1785/1805-1880MHz <http://www.erodocdb.dk/Docs/doc98/official/pdf/ECCDEC0808.PDF>.<sup>15</sup> As defined in Regulation 2 of the Authorisation Regulations

22. Furthermore, the on-board Base Station (v-BS) and its associated antennas, are assumed to be in compliance with the relevant ETSI standard for both the Handsets and Base Stations and as such, when operating correctly, the MCV system will comply with the standard band-edge masks for this band.
23. In relation to specific systems in adjacent bands ERC Report 81<sup>14</sup> covers the basic principle of sharing between the GSM-900 and RSBN (short-range aeronautical radionavigation) systems which operate in the 862 – 960 MHz band, including the necessary geographical separation distances between GSM Base Station and the RSBN receiver, for the different RSBN operating modes. ERC Report 81 concludes that, assuming the Handsets and Base Stations comply with the relevant ETSI standards, an MCV system is not expected to interfere with RSBN systems.
24. It should be noted, that while the compatibility with RSBN systems has been studied the results are not currently relevant to Ireland as these systems are not used here or in immediately adjacent countries.

### **3.3 Compliance in other Member States**

25. To date twelve countries have made the requisite spectrum available to ensure compliance with the 2010 Decision. These are as follows;
- Austria, Germany, Denmark, Estonia, Finland, Italy, Lithuania, Romania, the Russian Federation, Sweden, Slovenia and Montenegro.

ComReg notes that this has been fulfilled either by an Exemption order process, or where appropriate by direct inclusion in that country's table of radio frequency allocations.

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<sup>15</sup> As defined in Regulation 2 of the Authorisation Regulations

## 4 Summary of Legal Basis

26. The legal basis in Ireland for the provision of Electronic Communications Networks and Services ("ECN" and "ECS" respectively) is contained inter alia in the Framework and Authorisation Regulations, and the Act of 1926. An undertaking is entitled to provide ECN or ECS, subject to compliance with conditions set out in a general authorisation<sup>15</sup>. However, before providing networks or services to third parties, an undertaking is required to submit a notification to ComReg of its intention to provide such a network or service.
27. Where the operation of an ECN or provision of an ECS involves spectrum use, an operator must either obtain an appropriate licence from ComReg to keep and have possession of apparatus for wireless telegraphy<sup>16</sup>, or use apparatus for wireless telegraphy which is exempted from licensing under Section 3(6)(a) of the Act of 1926.
28. Radiocommunications apparatus providing an ECN or ECS on board any Irish registered vessel are subject to the aforementioned requirements. In deciding whether to license or exempt such apparatus, ComReg took into account its obligations pursuant to Regulation 17 of the Framework Regulations and in particular Regulation 17(1)c of the Framework Regulations, which states that ComReg must ensure the 'harmonisation of the use of radio frequency spectrum across the European Union is promoted, consistent with the need to ensure its effective and efficient use and in pursuit of benefits for the consumer such as economies of scale and interoperability of services, having regard to all decisions and measures adopted by the European Commission in accordance with the Radio Spectrum Decision'. Furthermore under Regulation 17(3) of the Framework Regulations ComReg may provide for proportionate and non-discriminatory restrictions to the types of radio network or wireless access technology used for electronic communications services where this is necessary to, amongst other things, "avoid harmful interference", "ensure maximisation of radio frequency sharing" and "safeguard the efficient use of spectrum".
29. Article 3 of the 2010 Decision, provides that "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 MHz and/or 1800 MHz bands for systems providing MCV services on a non-interference and non-protected basis in their territorial seas, and ensure that these systems comply with the conditions set out in the Annex to this Decision"<sup>17</sup>.

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<sup>15</sup> As defined in Regulation 2 of the Authorisation Regulations

<sup>16</sup> Section 5 of the Act of 1926.

<sup>17</sup> It is noted that Mobile Terminals are already licence exempt; see Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Mobile Telephones)(Amendment) Order, 2003: S.I. No. 158 of 2003;

30. ComReg believes that the appropriate method to ensure compliance with Article 3 of the 2010 Decision is to exempt apparatus for wireless telegraphy providing MCV services from licensing under Section 3 of the Act of 1926. Only apparatus compliant with the conditions as detailed in the Annex to the 2010 Decision will be entitled to an exemption from licensing under the Exemption Order. In coming to this view, it notes:

- Its obligations pursuant to Regulation 17 of the Framework Regulations, as specified in Paragraph 28 above,
- Its obligations pursuant to Regulation 12 of the Authorisation Regulations,
- The results of the compatibility studies<sup>18</sup> which informed the Annex of the 2010 Decision,
- The conditions contained in the Annex to the 2010 Decision provide sufficient protection to primary services operating in the bands concerned, and
- That the 2010 Decision is successfully complied with in a number of European Member States without any findings being reported to the European Commission under Article 5 of the 2010 Decision.

31. Failure to comply with the conditions set out in the Annex to the 2010 Decision, will render the apparatus for provision of the MCV system concerned unlicensed. Those in possession of unlicensed wireless telegraphy apparatus may be subject to prosecution under the Act of 1926.

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[http://www.comreg.ie/\\_fileupload/publications/SI158of2003.pdf](http://www.comreg.ie/_fileupload/publications/SI158of2003.pdf)

<sup>18</sup> As detailed in Chapter 3.2 of this document.

## 5 Conclusions

32. As outlined above, following a review of the various decisions and reports referenced in this Information Notice and for the reasons given therein, ComReg is ensuring Ireland's compliance with the 2010 Decision by exempting MCV systems from licensing under the Act of 1926, which:
- a. Operates in the frequency bands defined in Article 2 of the 2010 Decision on a Non-interference and Non-Protected Basis;
  - b. Meets the conditions laid down in the Annex to the 2010 Decision; and
  - c. Meets the essential requirements set out in Regulation 4 of the European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations 2011, S.I. No. 240 of 2001.
33. As it is intended that the MCV System will operate on a non-protected, non-interference basis in Irish Territorial Seas, then it follows that the operation of the MCV system in Irish inland or internal waters, harbours and ports, is prohibited and not exempted by the Exemption Order.
34. The Exemption Order does not exempt the MCV system or its associated apparatus from any seaworthiness approval, inspections, operational provisions or licensing, as required by law.
35. It does not exempt any Apparatus for MCV from licensing under the Act of 1926, where the Apparatus for MCV is used for the purposes of the Global Maritime Distress and Safety System ("GMDSS"), or for any other distress and safety communications purposes.
36. The MCV system and its associated apparatus must comply with the 2010 Decision, in particular the Annex which sets out how the system may be used. The main points of which are summarised below;
- The system shall not be used at distances closer than 2NM of the baseline<sup>19</sup>;
  - Between 2 to 12NM only indoor v-BS may be used;
  - v-MS (handsets) are restricted to a power of 5dBm and 0dBm in the 900 and 1800MHz Bands respectively;
  - v-BS (base stations) may not produce a measurable maximum power density in external areas of the vessel over -80dBm/200kHz; and

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<sup>19</sup> As shown in Figure 2, in Chapter 3 of this Document.

- Receiver sensitivity, of both the v-MS (handsets) and v-BS (base stations), is restricted at distances between 2 to 12 nm of the baseline.

# Annex: 1 Draft MCV Exemption Order

## STATUTORY INSTRUMENTS

S.I. No.                      of 2013

WIRELESS TELEGRAPHY ACT 1926 (SECTION 3) (EXEMPTION OF APPARATUS  
FOR MOBILE COMMUNICATIONS SERVICES ON BOARD VESSELS) ORDER 2013

(Pm. /                      )

**S.I. No.            of 2013**

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**WIRELESS TELEGRAPHY ACT 1926 (SECTION 3) (EXEMPTION OF APPARATUS FOR MOBILE COMMUNICATIONS SERVICES ON BOARD VESSELS) ORDER 2013**

The Commission for Communications Regulation, in exercise of the powers conferred on it by section 3(6)(a) of the Wireless Telegraphy Act 1926, (No. 45 of 1926) (inserted by section 11(c) of the Wireless Telegraphy Act, 1972 (No. 5 of 1972)) for the purpose of giving effect to Commission Decision 2010/166/EU of 19 March 2010 hereby makes the following Order:



*Citation*

1. This Order may be cited as the Wireless Telegraphy Act 1926 (Section 3) (Exemption of Apparatus for Mobile Communications Services On Board Vessels) Order 2013.

*Interpretation and Definitions*

## 2. (1) In this Order; –

“Act of 1926” means Wireless Telegraphy Act 1926 (No. 45 of 1926);

“Apparatus for MCV services” means apparatus for wireless telegraphy capable of providing MCV services ;

“Decision of 2010” means the European Commission Decision 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, 2010/166/EU OJ L72/38 20.03.2010;

“Framework Regulations” means the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2011 (S.I. No. 333 of 2011);

“Harmful Interference” means interference which endangers the functioning of a Radionavigation Service or other safety services or which otherwise seriously degrades, obstructs or repeatedly interrupts a Radiocommunication Service operating in accordance with a requirement under the International Telecommunication Union Radio Regulations, a regulation of an institution of the European Union, or legislation giving effect to an act, or provisions of an act, adopted by an institution of the European Union relating to the provision of an electronic communications service, electronic communications network or an associated facility or the radio frequency spectrum, or regulations made under the Act of 1926;

“Mobile Communication services on board vessels (MCV services)” means electronic communications services provided by an undertaking to enable persons on

board a vessel to communicate via public communication networks without establishing direct connections with land-based mobile networks;

“Non-Interference and Non-Protected Basis” means that no harmful interference may be caused to any Radiocommunication Service and, that no claim may be made for the protection of these services, against harmful interference originating from other Radiocommunication Services;

“Operator” has the meaning as set out in the Framework Regulations;

“Radiocommunication Service” means a service as defined in the Radio Regulations of the International Telecommunication Union involving the transmission, emission or reception of radio waves for specific telecommunication purposes;

“Radionavigation Service” means a service involving the determination of the position, velocity and/or other characteristics of an object, or the obtaining of information related to its parameters, by means of the propagation properties of radio waves and used for the purposes of navigation, including obstruction warning;

“Territorial Sea” has the meaning assigned to it by Part 3 of the Sea Fisheries and Maritime Jurisdiction Act 2006.

(2) In this Order;

- (a) A word or expression that is used in this Order and that is also used in the Framework Regulations 2011 (S.I. No. 333 of 2011). has, unless the context otherwise requires, the same meaning in this Order as it has in those Regulations;

*Applicability*

3. The following classes of apparatus for wireless telegraphy are hereby declared to be classes of apparatus for wireless telegraphy to which Section 3 of the Act of 1926 does not apply, namely:

(1) Apparatus for MCV services which:

- (a) operates in the frequency bands defined in Article 2 of the Decision of 2010 on a Non-Interference and Non-Protected Basis;
- (b) meets the conditions laid down in the Annex to the Decision of 2010; and
- (c) meets the essential requirements set out in Regulation 4 of the European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations 2001, S.I. No. 240 of 2001.

4. In addition to Article 3 of this Order, Operators must comply with the following conditions:

- (1) The operation of the Apparatus for MCV services must be immediately terminated should any malfunction or other such situation occur;
- (2) In the event of a malfunction, the Apparatus for MCV services must be disabled for the remainder of the vessels time in the Territorial Sea and may not be used again until it is fully certified as being conformant with the Decision of 2010 and otherwise operating correctly; and
- (3) The Commission for Communications Regulation is to be permitted to inspect the Apparatus for MCV services installation thereof at the Operator's own expense prior to, and during operation if necessary.

5. This Order does not;

- (1) exempt any Apparatus for MCV services from any seaworthiness approval, inspections, operational provisions or licensing, as required by law; or
- (2) exempt any Apparatus for MCV services from licensing under the Act of 1926 where such apparatus is used for the purposes of the Global Maritime Distress and Safety System, or for any other distress and safety communications purposes.

6. This Order only applies within the jurisdiction of the State and its Territorial Sea.



GIVEN under the official seal of the Commission for Communications Regulation this  
day of

Chairperson

EXPLANATORY NOTE

(This note is not part of the Instrument and does not purport to be a legal interpretation.)

This Order provides for the exemption of Apparatus for the provision of Mobile Communications Services on Board Vessels from the requirement to be licensed under the Wireless Telegraphy Act, 1926.

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