



Commission for
Communications Regulation

General

Draft Interface Requirements for Maritime Radio Services in Ireland

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Important Note:

This document is for information purposes only and has been notified to the European Commission (EC) under Directive 98/34/EC. There is an initial 3 month standstill period from the time that the notification was made and during which time comments may be made on the draft document. Interested parties can provide comments on these draft interface requirements to either the European Commission or to their relevant national authority responsible for administering Directive 98/34/EC in the field of technical regulations (In Ireland, the National Standards Authority of Ireland).

Although ComReg intends to adopt the interface requirements as per this document, any comments made by other Member States or the European Commission during the standstill period will need to be taken into account and subsequent amendments to the document may therefore be necessary. For this reason ComReg stresses that the information contained in the current document should be treated with caution and to avoid any doubt about the applicability of individual requirements please contact ComReg. Final interface requirements will be published after the standstill period has lapsed. Should detailed opinions be received, the standstill period may be extended.

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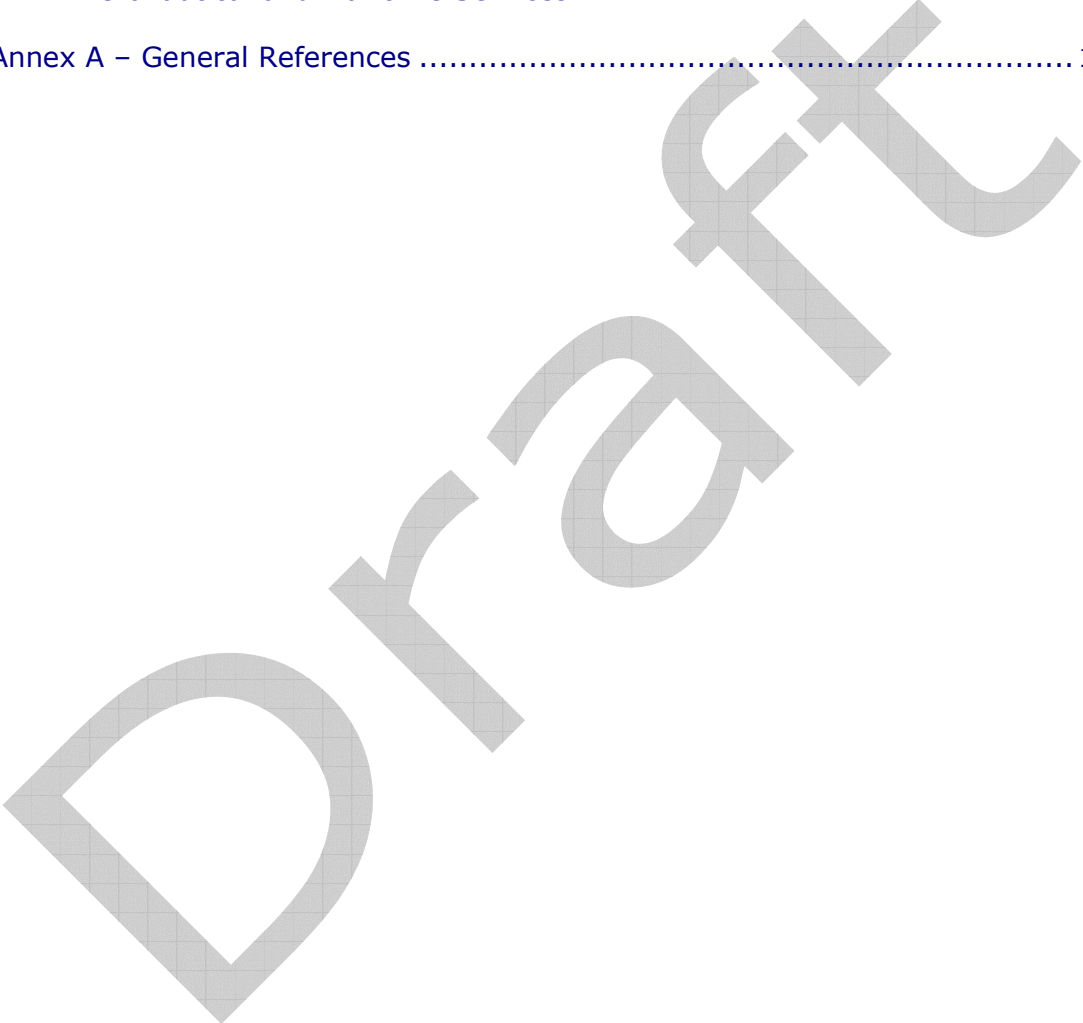
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1 General Information

1. The Radio and Telecommunications Terminal Equipment Directive¹ (R&TTE Directive) was transposed into Irish law by Statutory Instrument (S.I.) 240 of 2001 entitled “European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001”. Regulation 5(6)(a) of S.I. 240 of 2001 transposes Article 4.1 of the R&TTE Directive and requires the Commission for Communications Regulation (ComReg) to notify the European Commission of the regulated interfaces in Ireland.
2. This document sets out the interface requirements for the maritime radio services in Ireland which have been stipulated for the purpose of the efficient and effective use of the radio spectrum.
3. The manner in which the radio spectrum is allocated in Ireland is laid down in the Table of Frequency Allocations for Ireland (ComReg document 04/77R)².
4. This document augments the draft notification made to the European Commission in 2006/476/IRL
5. All radio and telecommunications terminal equipment must comply with the essential requirements and other relevant provisions of the R&TTE Directive³ before being placed on the market or put into service in Ireland. In terms of the usage of maritime radio equipment in Ireland, such radio equipment must operate in accordance with the relevant interface requirements laid down in this document.
6. Under Irish legislation (The Wireless Telegraphy Acts 1926 - 1988), all apparatus for Wireless Telegraphy requires a licence unless that apparatus has been specifically exempted from licensing under Irish legislation by means of an Exemption Order.
7. Detailed information on the licensing policies and procedures for specific radio services in Ireland are available on the ComReg website <http://www.comreg.ie>, generally in the form of guidelines to applicants.
8. All radio equipment should operate so as to optimise the effective and appropriate use of the radio spectrum and so that it does not cause harmful interference to other authorised radio services.
9. Licence conditions attached to Wireless Telegraphy licences, broadcast licences and fixed service licences require that licensees adhere to the International Commission on Non-Ionising Radiation Protection (ICNIRP)⁴ Guidelines on non-ionising radiation emissions.
10. Throughout this document, the reference standards refer to the harmonised standards under the R&TTE Directive, where available. Although the use of harmonised standards is not compulsory, compliance with a given harmonised standard gives a presumption of conformity to the relevant essential requirements of the R&TTE Directive under the scope of that standard. A list of harmonised standards under the

¹ Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity available at <http://europa.eu.int/comm/enterprise/rtte/dir99-5.htm>.

² <http://www.comreg.ie/fileupload/publications/ComReg0477.pdf>

³ Where applicable, EC Decisions under the R&TTE Directive must also be complied with. These Decisions are listed at <http://europa.eu.int/comm/enterprise/rtte/decision/present.htm> and also in Annex B of this document “General References”.

⁴ www.icnirp.de

R&TTE Directive is published in the Official Journal of the European Communities and is published electronically on the European Commission website⁵.

11. Commission Decision 2000/299/EC⁶ established classifications for radio and telecommunications terminal equipment. Radio and telecommunications terminal equipment which can be placed on the market and put into service without restrictions has been designated as Class 1. A list of Class 1 radio and telecommunications terminal equipment is maintained at <http://www.ero.dk/rtte> and <http://europa.eu.int/comm/enterprise/rtte/equip.htm#list> respectively. Class 1 equipment does not need notification under the R&TTE Article 6.4 process. On the other hand, radio equipment which has restrictions placed on it in terms of either placing on the market or putting into service is designated as Class 2 equipment and should accordingly be marked with the alert symbol. Class 2 equipment requires notification to ComReg under the Article 6.4 process.
12. Please note that the New Regulatory Framework⁷ has now been implemented into Irish law⁸. The implementing Regulations for the new Framework and other generally applicable legislation and documentation in Ireland are referenced in Annex B.
13. Wherever possible, CEPT ERC/ECC Decisions and Recommendations apply. A list of these documents and the current status of Ireland's implementation of the CEPT Decisions is available on the ERO website: <http://www.ero.dk>.
14. ComReg may from time to time introduce additional requirements where necessary for the purposes of ensuring the effective and efficient use of the radio spectrum. Such additional requirements may be necessitated by, inter alia, changes to spectrum allocations and/or technological developments. ComReg reserves the right to amend interface requirements where necessary and this document is therefore subject to revision.
15. Contact details for queries relating to this document are provided in Annex E.
16. Web addresses are referenced throughout this document for convenience only. Please note that ComReg is not responsible for the content of external websites.

⁵ <http://europa.eu.int/comm/enterprise/newapproach/standardization/harmstds/reflist/radiotte.html>

⁶ <http://europa.eu.int/comm/enterprise/rtte/decision/class-en.pdf>

⁷ http://europa.eu.int/information_society/topics/telecoms/regulatory/new_rf/index_en.htm

⁸ http://www.comreg.ie/about_us/default.asp?s=2&navid=134

2 Interface Requirements

2.1 Maritime Services

This section outlines the interface requirements for the Aeronautical and Maritime services in Ireland. The interface requirements for these services are detailed in Tables 29 - 39 as follows:

Table 29: Aeronautical Services

Table 30: VHF portable radiotelephone equipment in the maritime mobile service (non-GMDSS applications).

Table 31: VHF radiotelephone equipment for general communications and associated equipment for class “D” Digital Selective Calling.

Table 32: Maritime Emergency Position indicating Radio Beacons (EPIRBs) intended for use on the frequency 121.5 MHz or the frequencies 121.5 MHz and 243 MHz for homing purposes only.

Table 33: Maritime Personal Locator Beacons intended for use with the COSPAS-SARSAT Distress Alert System in the 406 – 406.1 MHz frequency band, with an auxiliary 121.5 MHz transmitter for homing purposes only and optional navigational interface (either internal or external).

Table 34: 9GHz (Non-SOLAS) radar systems in the maritime radionavigation service.

Table 35: Radar Beacons (RACONS) in the maritime mobile service in the 3 GHz and 9 GHz bands.

Table 36: Transmission of differential correction signals of global navigation satellite systems (DGNSS) from maritime radio stations in the frequency bands 162.4375-162.4625 MHz and 163.0125 - 163.03125 MHz.

Table 37: Universal ship borne Automatic Identification System (AIS) using time division multiple access in the VHF band of the maritime mobile service for use at coast station and unmanned maritime buoys.

Table 38: Radio beacons of the maritime radiodetermination service in the frequency band 283.5 – 315 kHz.

Table 39: UHF on-board communications.

The legislation and documentation relevant to these services is listed at the end of this section.

Table 1: Interface requirements for VHF portable radiotelephone equipment in the maritime mobile service (non-GMDSS applications).

Parameter	Description
Mandatory Requirements	
Frequency	156 - 163MHz
Radio Service	Maritime Mobile Service
Application	Portable Ships Radio
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence, see ComReg document 02/13R2 or Business Radio Licence, See ComReg document 00/07R Operator must hold a ships radio operators certificate (see http://www.transport.gov.ie/Maritime+Safety+Directorate/Maritime+Radio)
Maximum EIRP (peak)	6W
Class of emission and Channel spacing	G3E, 25 kHz
Other	Channel plan and parameters must be in accordance with the relevant sections of the ITU Radio Regulations (Articles 5, 19, 30-33, 50-54, 57-58, Appendices 13-16 and Appendix 18)
Information	
Reference standards	EN 301 178-2

Table 2: Interface requirements for VHF radiotelephone equipment for general communications and associated equipment for class “D” Digital Selective Calling.

Parameter	Description
Mandatory Requirements	
Frequency	156 – 163 MHz
Radio Service	Maritime Mobile Service
Application	VHF radiotelephone equipment for general communications and associated equipment for class “D” Digital Selective Calling
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence, see ComReg document 02/13R2 or Business Radio Licence, See ComReg document 00/07R Operator must hold a ships radio operators certificate (see http://www.transport.gov.ie/Maritime+Safety+Directorate/Maritime+Radio)
Maximum EIRP (peak)	25W
Channel spacing and class of emission	25kHz, G3E, G2B (DSC)
Other	Channel plan, parameters, classes of emission and operation must be in accordance with the relevant sections of the ITU Radio Regulations (Articles 5, 19, 30-33, 50-54, 57-58, Appendices 13-16 and Appendix 18).
Information	
Reference standards	EN 300 162, EN 301 025-2 and EN 301 025-3

Table 3: Interface requirements for Maritime Emergency Position indicating Radio Beacons (EPIRBs) intended for use on the frequency 121.5 MHz or the frequencies 121.5 MHz and 243 MHz for homing purposes only.

Parameter	Description
Mandatory Requirements	
Frequency	121.5 MHz or 121.5MHz and 243 MHz
Radio Service	Maritime Mobile Service
Application	EPIRBs
Licensing requirements	Ships Radio Licence, see ComReg document 02/13R2 Operator must hold a ships radio operators certificate (see http://www.transport.gov.ie/Maritime+Safety+Directorate/Maritime+Radio)
Maximum EIRP (peak)	200mW or 70mW for man overboard devices only.
Class of emission	A3X
Minimum Duty Cycle	33% with a minimum depth of modulation of 0.85 at an Effective Radiated Peak Envelope Power (ERPEP) of not less than 75mW for an uninterrupted period of at least 24 hours or an ERPEP of not less than 25mW for an uninterrupted period of at least 6 hours for man overboard devices only.
Other	Equipment shall be operated in accordance with the relevant sections of the ITU Radio Regulations Article 32, Appendices 13 and 15. Other parameters shall be operated in accordance with ITU-R M.690-1.
Information	
Reference standards	EN 300 152-1, EN 300 152-2, EN 300 152-3

Table 4: Interface requirements for Maritime Personal Locator Beacons intended for use with the COSPAS-SARSAT Distress Alert System in the 406 – 406.1 MHz frequency band, with an auxiliary 121.5 MHz transmitter for homing purposes only and optional navigational interface (either internal or external).

Parameter	Description
Mandatory Requirements	
Frequency	406.0 - 406.1 MHz and 121.5 MHz
Radio Service	Maritime Mobile/Maritime Mobile Satellite
Application	Maritime Personal Locator Beacons (PLBs)
Licensing requirements	Ships Radio Licence, see ComReg document 02/13R2. The PLB will only be licensed for use on a vessel.
Maximum EIRP (peak)	Between 406.0 – 406.1 MHz, maximum EIRP is 5W ± 2dB (35-39 dBm). At 121.5MHz maximum EIRP is 100mW
Channelling Modulation	Requirements laid down in COSPAS-SARSAT documents C/S T.001 for 406.0 – 406.1MHz and ITU-R M.690-1 for 121.5 MHz.
Other	The equipment shall meet the relevant sections of C/S G.005 and C/S T.001 and equipment and operation shall be in accordance with the relevant sections of the ITU Radio Regulations (Articles 5, 30, 32, Appendices 13 and 15 and C/S T.007
Additional Essential requirements	Commission Decision 2005/631/EC
Information	
Reference Documents	EN 302 152-1C/S T.001, C/S G.005, C/S T.007

Table 5: Interface Requirements for non-SOLAS radar systems in the maritime radionavigation service

Parameter	Description
Mandatory Requirements	
Frequency	2700 - 3400 MHz 9300 – 9500 MHz
Radio Service	Maritime radionavigation service
Application	Non-SOLAS radar
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence, see ComReg document 02/13R2 or Business Radio Licence, See ComReg document 00/07R
Maximum EIRP (peak)	100MW (80dBW)
Class of emission	PON
Frequency tolerance	1250 in 1E6
Other	The bandwidth occupied by the emissions must be completely maintained in the band allocated to the service.
Information	
Reference Documents	IEC 62252: 2004

Table 6: Interface requirements for Radar Beacons (RACONs) in the maritime mobile service in the 3 GHz and 9 GHz bands.

Parameter	Description
Mandatory Requirements	
Frequency	2900 – 3100 MHz or 9300 – 9500 MHz
Radio Service	Maritime radionavigation service
Application	Radar Beacons (RACONs)
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence (see ComReg document 02/13R2) Business Radio Licence (see ComReg document 00/07R2)
Maximum EIRP (peak)	50W (17dBW)
Class of emission	Q0N
Other	The bandwidth occupied by the emissions must be maintained entirely in the band allocated to the service.
Information	
Reference Documents	ITU-R M.824 IALA Recommendation R-101 on Marine Radar Beacons (RACONs)

Table 7: Interface requirements for the Transmission of differential correction signals of global navigation satellite systems (DGNSS) for maritime use in the frequency bands 162.4375-162.4625 MHz and 163.0125-163.03125 MHz

Parameter	Description
Mandatory Requirements	
Frequency	162.4375-162.4625 MHz and 163.0125-163.03125 MHz
Radio Service	Maritime Radionavigation
Application	Maritime Navigational Aids
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence (see ComReg document 02/13R2) Business Radio Licence (see ComReg document 00/07R2)
Maximum EIRP (peak)	25W
Channel spacing and class of emission	12.5 kHz, F1D, G1D
Information	
Reference standards	N/A

Table 8: Interface requirements for Universal ship borne Automatic Identification System (AIS), Navigational Aids and Radars for maritime use in the VHF band.

Parameter	Description
Mandatory Requirements	
Frequency	156.525 MHz, 161.975 MHz, 162.025 MHz
Radio Service	Maritime mobile
Application	Maritime navigational aids, AIS and radars
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence (see ComReg document 02/13R2) Business Radio Licence (see ComReg document 00/07R2)
Maximum EIRP (peak)	12.5W
Modulation	GMSK/FM,
Class of emission and Channel spacing	G2B (DSC) on 156.525 MHz 25 kHz
Other	Channels, parameters, class of emission and operation must be in accordance with the relevant sections of the ITU Radio Regulations (Articles 5, 19, 30-33, 50-54, 57-58, Appendices 13-16 and 18).
Additional Essential requirements	For radio equipment intending to participate in AIS, Commission Decision 2005/53/EC applies
Frequency planning assumptions	Equipment parameters are assumed to meet ITU-R M.1371
Information	
Reference Documents	IEC 62287-1 (2006-03), ITU-R M.1371

Table 9: Interface requirements for radio beacons of the maritime radiodetermination service in the frequency band 283.5 – 315 kHz

Parameter	Description
Mandatory Requirements	
Frequency	283.5 – 315.0 kHz
Radio Service	Maritime Radiodetermination Service
Application	Maritime navigational aids, AIS and radars
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence (see ComReg document 02/13R2) Business Radio Licence (see ComReg document 00/07R2)
Maximum EIRP (peak)	Minimum necessary to achieve the desired field strength at the service range. It shall not exceed 50µV/m.
Class of emission and channel spacing	A1A, A2A, G1D. Integer multiple of 500 Hz if transmitting GNSS differential correction signals
Additional Essential requirements	For radio equipment intending to participate in AIS, Commission Decision 2005/53/EC applies.
Other	Assignments shall take account of the Master List of DGNSS Reference and Transmitting Stations in the Maritime Radionavigation (Radiobeacon) Band (283.5 – 315 kHz Region 1, 285 – 325 kHz Regions 2 and 3) published by the International Association of Marine Aids to navigation and Lighthouse Authorities.
Information	
Reference Documents	ITU-R M.823 and ITU-R M.588-1

Table 10: Interface requirements for UHF on-board communications

Parameter	Description
Mandatory Requirements	
Frequency	Single frequency simplex channels: 467.525 MHz, 467.550 MHz, 467.575 MHz, 457.525 MHz, 457.550 MHz, 457.575 MHz Two-frequency simplex channels for use with repeater only: 467.525 MHz (transmit) paired with 457.525 MHz (receive), 467.550 MHz (transmit) paired with 457.550 MHz (receive), 467.575 MHz (transmit) paired with 457.575 MHz (receive)
Radio Service	UHF on-board communications
Application	As per radio service
Licensing requirements	Wireless Telegraphy Licence is required Ships Radio Licence (see ComReg document 02/13R2) Business Radio Licence (see ComReg document 00/07R2)
Maximum EIRP (peak)	Carrier power shall not exceed 4 W
Class of emission and channel spacing	Phase modulation, G3E 25 kHz channel spacing
Information	
Reference standards	EN 300 720-2

Annex A – General References

Under Irish national legislation (The Wireless Telegraphy Acts (1926-1988), all apparatus for wireless telegraphy requires a licence unless that apparatus has been exempted from licensing under legislation.

All equipment installed on Irish registered vessels is required to comply with the requirements of the European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001 (S.I.240 of 2001) or the European Communities (Marine Equipment) Regulations 2003 (S.I. No. 38 of 2003), whichever is applicable to a particular Irish vessel.

Relevant Documentation

National Legislation

Primary Legislation

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation

S.I. 414 of 2006: Wireless Telegraphy (Ship Station Radio Licence) Regulations, 2006

EC Directives, Decisions and Recommendations

Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity.

Commission Decision of 25 January 2005 on the application of Article 3(3)(e) of Directive 1999/5/EC of the European Parliament and of the Council to radio equipment intended to participate in the Automatic Identification System (AIS).

Commission Decision of 4 September 2003 on essential requirements relating to marine radio communication equipment which is intended to be used on non-SOLAS vessels and to participate in the Global Maritime Distress and Safety System (GMDSS).

Commission Decision of 22 September 2000 on the application of Article 3(3)(e) of Directive 1999/5/EC to radio equipment covered by the regional arrangements concerning the radiotelephone service on inland waterways.

ComReg/ODTR Documentation

06/44: Ships Radio Licence Transfer Form

02/13R2: Maritime Mobile Radio Station Licence: Application Form and Guidance Notes.

02/01R: Aircraft Radio Licence - Application Form.

Other Documentation

IEC 60936: Maritime navigation and radio communications equipment and systems (radar).

IEC 60945: Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results.

IEC 61993: Maritime navigation and radiocommunication equipment and systems.

IEC 62287: Maritime navigation and radiocommunication equipment and systems - Class B shipborne installation of the universal automatic identification system (AIS) using VHF TDMA techniques.

EN 301 929: Electromagnetic compatibility and Radio spectrum Matters (ERM); VHF transmitters and receivers as Coast Stations for GMDSS and other applications in the maritime mobile service.

EN 300 338: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Technical characteristics and methods of measurement for equipment for generation, transmission and reception of Digital Selective Calling (DSC) in the maritime MF, MF/HF and/or VHF mobile service.

EN 300 152: Electromagnetic compatibility and Radio spectrum Matters (ERM); Maritime Emergency Position Indicating Radio Beacons (EPIRBs) intended for use on the frequency 121,5 MHz or the frequencies 121,5 MHz and 243 MHz for homing purposes only.

EN 300 373: Radio Equipment and Systems (RES); Technical characteristics and methods of measurements for maritime mobile transmitters and receivers for use in the MF and HF bands.

EN 300 720-1: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Ultra-High Frequency (UHF) on-board communications systems and equipment; Part 1: Technical characteristics and methods of measurement.

EN 300 720-2: Electromagnetic compatibility and Radio Spectrum Matters (ERM) Ultra-High Frequency (UHF) on-board communications systems and equipment; Part 2: Harmonised EN under article 3.2 of the R&TTE Directive.

EN 301 025: Electromagnetic compatibility and Radio spectrum Matters (ERM); VHF radiotelephone equipment for general communications and associated equipment for Class "D" Digital Selective Calling (DSC).

EN 301 178: Electromagnetic compatibility and Radio spectrum Matters (ERM); Portable Very High Frequency (VHF) radiotelephone equipment for the maritime mobile service operating in the VHF bands (for non-GMDSS applications only).

Recommendation ITU-R M.493: Digital selective-calling system for use in the maritime mobile service.

Recommendation ITU-R M.690-1: Technical characteristics of emergency position-indicating radio beacons (EPIRBs) operating on the carrier frequencies of 121.5 MHz and 243 MHz.

Recommendation ITU-R M.588-1: Black and white facsimile transmissions over combined metallic and radio circuits in the maritime mobile service and in the maritime mobile-satellite service.

Recommendation ITU-R M.823: Technical characteristics of differential transmissions for Global Navigation Satellite Systems (GNSS) from maritime radio beacons in the frequency band 285-315 kHz (Region 1) and 283.5-325 kHz (Region 2 and 3).

Recommendation ITU-R M.824: Technical parameters of radar beacons (RACONS).

Recommendation ITU-R M.1174: Characteristics of equipment used for on-board communications in the bands between 450 and 470 MHz.

C/S G.005: Cospas-Sarsat Guidelines on 406 MHz Beacon Coding, Registration and Type Approval.

C/S T.001: Specification for Cospas-Sarsat 406 MHz Distress Beacons.

C/S T.007: Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard.

International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Guidelines on the Universal Automatic Identification System.

IALA Recommendation R101 on Maritime Radar Beacons (RACONS).

ITU Radio Regulations

ERC/DEC/(99)01: Harmonised examination syllabi for the General Operator's Certificate (GOC) and the Restricted Operator's Certificate (ROC).

ERC/REC/T/R 20-04 E: Low-power Narrow-Band Telecommand and Telemetry equipment for use outside the ISM frequency bands.

ERC/REC/T/R 31-05: Harmonised examination procedures for maritime radio operators' certificates.

ERC/REC/T/R 61-01 E: CEPT Radio Amateur Licence.

ERC/REC/T/R 61-02: Harmonised amateur radio examination certificates.

Radio Regulations Appendix S16: Documents with which stations on board ships and aircraft shall be provided.

Radio Regulations Appendix S18: Table of transmitting frequencies in the VHF maritime mobile band.

*Please note that all documentation is subject to updates and revision. **Contact Details***

Comments and queries relating to this document should be directed to:

Mr. Conor Conran, Market Framework, Commission for Communications Regulation, Block DEF, Lower Abbey Street, Irish Life Centre, Dublin 1, Ireland
Tel: +353 1 804 9725, Fax: +353 1 804 9665, email: conor.conran@comreg.ie.

Other sources of information relating to the Licensing of Radio systems in Ireland

General queries regarding radio or licensing matters can be directed to:
Maritime Radio Affairs Unit,
Department of Transport, 5th Floor, Leeson Lane. Dublin 2.
Tel: +353 1 670 7444, Fax: +353 1 678 3109, website: www.transport.ie.

Irish Government Publications, including Statutory Instruments, can be purchased from:
Government Publications Sales Office, Sun Alliance House, Molesworth Street, Dublin 2,
Ireland. Tel: +353 1 647 6879

CEPT Documentation, including ERC Decisions and Recommendations, and Publications of the European Radiocommunications Office (ERO) can be obtained from: ERO, Peblingehus, Nansensgade 19, DK 1366 Copenhagen.
Tel: +45 338 963 00, Fax: +45 338 963 30, website: www.ero.dk.

Publications of the European Telecommunications Standards Institute (ETSI) are available from ETSI Secretariat, 650, route des Lucioles, 06921 Sophia-Antipolis Cedex, France
Tel.: +33 (0)4 92 94 42 00, Fax: +33 (0)4 93 65 47 16, website: www.etsi.org.

Irish Equipment Standards (including transposed ETSI standards) can be purchased from the National Standards Authority of Ireland at the address below:
Sales Office, NSAI, Glasnevin, Dublin 9, Ireland.
Tel: +353 1 807 3800, Fax: +353 1 807 3838, website: www.nsai.ie.

EC Directives can be obtained from The European Commission Representation in Ireland, European House, Dawson Street, Dublin 2.
Tel: +353 1 634 1111, Fax: +353 1 634 1112, website:
http://ec.europa.eu/ireland/welcome/index_en.htm.