

ELECTRONIC COMMUNICATIONS COMMITTEE

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 1710-1785/1805-1880 MHz

(ECC/DEC/(08)08)



EXPLANATORY MEMORANDUM

1 INTRODUCTION

There is increasing demand to use mobile electronic communications from wherever you are located, including the use of GSM terminals on board vessels. However, to ensure successful operation of systems which will facilitate this there is a need to establish a basis for the harmonised use of GSM system on board vessels within Europe and to provide access to the required spectrum and to ensure that all maritime safety issues have been addressed.

2 BACKGROUND

This decision covers the radio regulatory aspects of operation of GSM systems on board vessels (GSMOBV) in the “territorial sea”, as defined in the UN Convention on the Law of the Sea (UNCLOS, 1982), excluding internal waters, harbours, and ports.

The territorial sea is understood as being on the waterway side of the baseline, as illustrated below in Fig. 1¹.

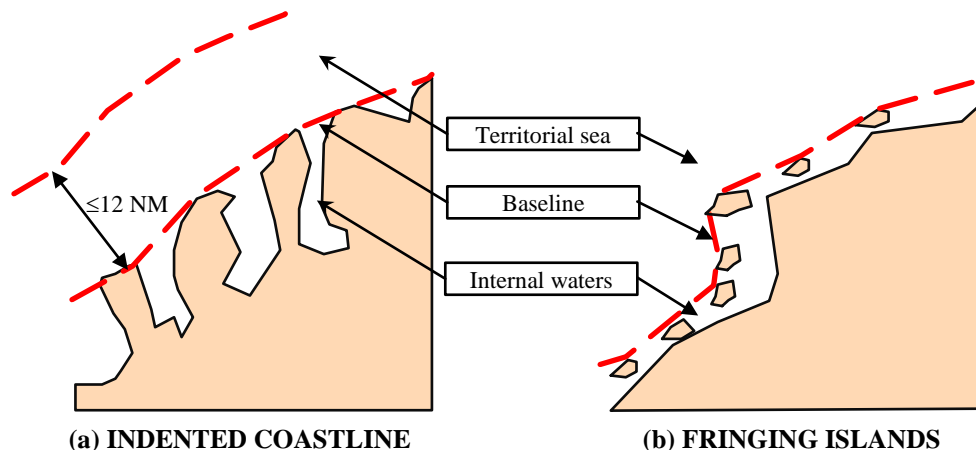


Fig. 1. Illustration of baseline between internal waters and territorial sea (NM – nautical miles)

Maritime safety aspects (both technical and human factors related) are out of the scope of this Decision and fall under the responsibilities of the relevant maritime authorities.

The system under consideration in this Decision, (i.e. the equipment necessary to establish a GSM-900 and/or GSM-1800 MHz pico-cell² system on board a vessel, “the System”), is intended to provide an interface to on board GSM terminals providing the full range of services normally provided on a GSM network. The link between the System and other networks is out of the scope of this Decision.

There is a need for a harmonised approach to the System together with its harmonised use to ensure the provision of service whilst vessels cross territorial sea borders of various countries and to reduce the regulatory requirements placed on administrations, land-based network operators and vessels operators.

An agreed regulatory approach is required to ensure that the spectrum utilised by the System can be used in any territorial sea that the vessel is crossing, provided that the System conforms to agreed limits in order to prevent harmful interference.

¹ The breadth of the territorial sea of a state may vary and be less than 12 NM.

² Pico cells are cells, predominantly used indoors and in this case on the vessel.

For the purposes of this Decision only it is assumed that the responsibility for the authorisation of the spectrum utilised on board a vessel as part of the System should be that of the vessel flag state.

Seaworthiness certification of the System is the separate responsibility of the relevant maritime authorities for the vessel flag state.

3 REQUIREMENT FOR AN ECC DECISION

There is a need for an ECC Decision to allow for the harmonised use of the System in, and to permit access to, the frequency bands 880-915 / 925-960 MHz and 1710-1785 / 1805-1880 MHz.

**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 / 1805-1880 MHz**

(ECC/DEC/(08)08)

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that every state has sovereignty over its territorial sea, including the radio spectrum;
- b) that the frequency bands 880-915 / 925-960 MHz and 1710-1785 / 1805-1880 MHz are allocated to the mobile service on a primary basis with other services in Region 1 in the ITU Radio Regulations;
- c) that a system (i.e. the equipment necessary to establish a GSM-900 and/or GSM-1800 MHz pico-cell system on board a vessel, “the System”) will be able to provide GSM services onboard vessels;
- d) that within CEPT the frequency bands 880-915 / 925-960 MHz and 1710-1785 / 1805-1880 MHz have been also designated for GSM;
- e) that in some European countries the frequency band 862-960 MHz is also allocated to aeronautical radionavigation services on a primary basis under RR 5.323;
- f) that, provided the System is operated in accordance with the conditions set out in the Annex, it is not possible to connect to the System from a land based GSM terminal;
- g) that, provided the System is operated in accordance with the conditions set out in the Annex, it is possible to ensure that there is no harmful interference to any other authorised system;
- h) that the effect of the System can be confined to the vessel;
- i) that, without prejudice to the requirements set out in the Annex, and taking into account the other authorised uses of spectrum, administrations may place additional geographic restrictions on the operation of the System in their territorial sea;
- j) that for the purposes of this Decision the vessel is considered to be subject to the control of the vessel flag state and the System will only be used on board the vessel;
- k) that accordingly responsibility for the authorisation of the spectrum utilised on board a vessel by the System will be that of the vessel flag state, in accordance with the authorisation regime of that state;
- l) that the use of the relevant frequencies will be authorised by one administration but those frequencies could also be used within the territorial sea, excluding internal waters, ports and harbours, of other countries;
- m) that the installation and use of the System on the vessel will be subject to regulation by the relevant national maritime authorities of the vessel flag state, and the System cannot be put into operation until it complies with these requirements, and in particular with those ensuring the proper operation of the safety systems on board the vessel;
- n) that both the GSM terminals and the communication link between the System and other networks are outside the scope of this Decision;
- o) that all necessary measures should be taken to monitor that the System and its installation conform to the relevant technical parameters given in the Annex;

- p) that, despite measures to ensure avoidance of harmful interference referred to in considering f), g), h), i) and o), it may remain necessary for administrations to assist each other with the resolution of reports of interference in a timely manner, in accordance with appropriate ITU procedures;
- q) that, ECC Report 122 addresses the compatibility between GSM use on board vessels and land-based networks;
- r) that this Decision shall not impede EU/EFTA countries from fulfilling their obligations according to Community laws;
- s) that the Decision is without prejudice to the right of “innocent passage”, as defined in the UN Convention on the Law of the Sea (UNCLOS, 1982);
- t) that in EU/EFTA countries the radio equipment that is under the scope of this Decision shall comply with the R&TTE Directive. Conformity with the essential requirements of the R&TTE Directive may be demonstrated by compliance with the applicable harmonised European standard(s) or by using the other conformity assessment procedures set out in the R&TTE Directive.

DECIDES

1. that administrations shall allow the use of the System on board vessels within their territorial sea, excluding internal waters, harbours and ports in the frequency bands 880-915 / 925-960 MHz and 1710-1785 / 1805-1880 MHz, provided that the System operator is authorised to operate the System (including the right to use the necessary spectrum) by the vessel flag state in accordance with that state’s authorisation regime and in accordance with the restrictions referred to in considering i);
2. that the System shall not cause harmful interference to, or claim protection from, any other authorised system;
3. that the use of the System shall comply with the technical and operational requirements set out in the Annex, otherwise it shall be switched off;
4. that this Decision enters into force on 31 October 2008;
5. that the preferred date for implementation of the Decision shall be 1 May 2009;
6. that CEPT administrations shall communicate the national measures implementing this Decision to the ECC Chairman and the Office when the Decision is nationally implemented;
7. that CEPT administrations shall communicate to the Office any additional measures supplementing this Decision in accordance with considering (i), which shall be made publicly available on the Office web site (<http://www.ero.dk>).

Note:

Please check the Office web site (<http://www.ero.dk>) for the up to date position on the implementation of this and other ECC Decisions.

ANNEX

**TECHNICAL AND OPERATIONAL REQUIREMENTS FOR
GSM SYSTEMS ONBOARD VESSELS****A.1 DESCRIPTION OF THE GSM SYSTEM ONBOARD VESSELS (GSMOBV)**

The GSM system onboard vessels (e.g. cruise liners, ferries, cargo ships), hereinafter referred to as “the System”, enables onboard use of GSM terminals (v-MS) within the territorial sea as illustrated in the Background section of the Decision. GSM access onboard a vessel is to be provided by one or more pico-cell BTS (v-BS).

The System operates in the GSM-900 or GSM-1800 frequency band. The land-based GSM and UMTS networks to be protected are those operating in frequency bands:

- 880-915 MHz (uplink) / 925-960 MHz (downlink);
- 1710-1785 MHz (uplink) / 1805-1880 MHz (downlink).

A.2 TECHNICAL AND OPERATIONAL REQUIREMENTS FOR THE SYSTEM

Any operation of the System within territorial sea shall comply with the following:

- the System shall not be used closer than 2 NM from the baseline;
- only indoor v-BS antenna(s) shall be used between 2 and 12 NM from the baseline³;
- DTX⁴ has to be activated on the System uplink;
- the timing advance⁵ value of v-BS must be set to minimum;
- all v-MS shall be controlled to use the minimum output power (5 dBm in 900 MHz and 0 dBm in 1800 MHz bands);
- Within 2-3 NM from the baseline the v-MS receiver sensitivity and the disconnection threshold (ACCMIN⁶ & min RXLEV⁷ level) shall be ≥ -70 dBm/200 kHz;
- Within 3-12 NM from the baseline the v-MS receiver sensitivity and the disconnection threshold (ACCMIN & min RXLEV level) shall be ≥ -75 dBm/200 kHz;
- the v-BS emissions measured anywhere external to the vessel (i.e. at ship perimeter or on its open deck areas) shall not exceed -80 dBm/200 kHz (assuming a 0 dBi measurement antenna gain);

Note: For information on implementation of the technical measures described in this section, see ECC Report 122.

³ See Background section of this Decision.

⁴ DTX (discontinuous transmission, as described in GSM standard 3GPP TS 148.008)

⁵ Timing advance (as described in GSM standard 3GPP TS 144.018)

⁶ ACCMIN (RX_LEV_ACCESS_MIN, as described in GSM standard 3GPP TS 144.018)

⁷ RXLEV (RXLEV-FULL-SERVING-CELL, as described in GSM standard 3GPP TS 148.008)