

INTERNATIONAL STANDARD

**Global maritime distress and safety system (GMDSS) –
Part 4: Inmarsat-C ship earth station and Inmarsat enhanced group call (EGC)
equipment – Operational and performance requirements, methods of testing
and required test results**



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IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Performance requirements	7
3.1 Overview.....	7
3.2 Non-operational requirements	8
3.2.1 General	8
3.2.2 Warning of radiation hazard.....	8
3.2.3 Power supply changeover.....	8
3.3 Operational requirements for ship earth stations	8
3.3.1 Capabilities	8
3.3.2 Ship station identity.....	8
3.3.3 Distress alerting	8
3.3.4 Position updating.....	9
3.4 Operational requirements for EGC receivers	9
3.4.1 Capabilities	9
3.4.2 General	10
3.4.3 Position and area code updating.....	10
3.4.4 Indication of receipt of priority message	10
3.4.5 Indication of tuning and synchronisation	10
3.4.6 Printing selection.....	11
3.4.7 Printing device.....	11
3.5 Performance related requirements from IEC 60945	11
3.6 Other requirements	11
3.7 Long-range identification and tracking	12
3.7.1 General	12
3.7.2 Capabilities	12
3.7.3 Functionality.....	13
3.7.4 Communication system.....	14
4 Technical characteristics	14
4.1 Overview.....	14
4.2 Environmental and electromagnetic compatibility requirement.....	14
4.3 Radiated spurious emissions	15
5 Methods of testing and required test results	15
5.1 Overview.....	15
5.1.1 General	15
5.1.2 Performance requirements	15
5.1.3 Technical characteristics	16
5.2 Tests of non-operational requirements	16
5.3 Tests of operational requirements for ship earth stations.....	16
5.3.1 Capabilities	16
5.3.2 Ship station identity.....	16
5.3.3 Distress alerting	16
5.3.4 Position updating.....	16
5.4 Tests of operational requirements for EGC receivers.....	17

5.4.1	Capabilities	17
5.4.2	General	17
5.4.3	Position and area code updating.....	17
5.4.4	Indication of receipt of priority message	17
5.4.5	Indication of tuning and synchronisation	17
5.4.6	Printing selection.....	18
5.4.7	Printing device.....	18
5.5	Tests of performance related requirements from IEC 60945	18
5.6	Tests of other requirements.....	18
5.7	Long-range identification and tracking	18
5.7.1	General	18
5.7.2	Capabilities	18
5.7.3	Functionality.....	19
5.7.4	Communication system.....	19
5.8	Tests of technical characteristics.....	20
5.8.1	Inmarsat tests.....	20
5.8.2	Tests for environmental and electromagnetic compatibility	20
Annex A	(normative) Requirements relating to installation	21
Annex B	(normative) Radiated unwanted emissions	22
Annex C	(informative) Inmarsat RTP schedule of tests.....	25
Bibliography	29
Table 1	– Data to be transmitted from the shipborne equipment.....	14
Table 2	– Environmental conditions	15
Table B.1	– Limits of unwanted emissions up to 1 000 MHz	22
Table B.2	– Limits of unwanted emissions above 1 000 MHz	23
Table B.3	– Limits of unwanted emission within the operating band with carrier-on	24
Table C.1	– Phase I Inmarsat-C schedule of tests.....	25
Table C.2	– Phase I EGC receiver schedule of tests	27
Table C.3	– Phase II schedule of tests	28

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GLOBAL MARITIME DISTRESS
AND SAFETY SYSTEM (GMDSS) –****Part 4: Inmarsat-C ship earth station and
Inmarsat enhanced group call (EGC) equipment –
Operational and performance requirements,
methods of testing and required test results**

FOREWORD

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International Standard IEC 61097-4 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

This third edition cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

The main changes with respect to the previous edition are:

- the IMO references and requirements have been updated to the new performance standards for enhanced group call equipment adopted in 2010 as resolution MSC.306(87). The new performance standards incorporate new requirements for an indication of ship's position which has not been updated (3.4.3) and an alarm for paper low condition (3.4.7).

These two requirements are, however, derived from Inmarsat documentation so there is no technical change to equipment;

- a new subclause has been added (3.7) concerning long-range identification and tracking (LRIT) to support IMO performance standards given in resolution MSC.263(84) adopted in 2008;
- references to Inmarsat documentation have been simplified by moving the content of Tables 1, 2, 4 and 5 into a new Annex C;
- the text has been editorially updated to conform to the ISO/IEC Directives.

The text of this standard is based on the following documents:

FDIS	Report on voting
80/659/FDIS	80/666/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of IEC 61097 series, published under the general title *Global maritime distress and safety system (GMDSS)*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) –

Part 4: Inmarsat-C ship earth station and Inmarsat enhanced group call (EGC) equipment – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61097 specifies the performance requirements and methods of testing for Inmarsat-C ship earth stations (SES) capable of transmitting and receiving direct-printing communications, and for enhanced group call (EGC) receivers, for use in the GMDSS and for use for long-range identification and tracking (LRIT). The available variants are:

- Class 0: An EGC receiver, either stand-alone or an element of a GMDSS installation in accordance with the Inmarsat design and installation guidelines (DIGs) for GMDSS installations.
- Class 1: A basic SES providing shore-to-ship and ship-to-shore message transfer only.
- Class 2: As class 1 but with EGC as an alternative to shore-to-ship transfer using a shared receiver.
- Class 3: As class 1 but with EGC using an independent receiver.

NOTE 1 The 34th session of the IMO Sub-Committee on Radiocommunications decided that class 2 equipment would be adequate to provide sufficient availability for the reception of maritime safety information for the GMDSS.

The standard complies with IMO performance requirements stated in the normative references, Inmarsat technical characteristics and test procedures, and IEC 60945 general requirements except where modifications are explicitly stated in this standard. Technical characteristics essential to GMDSS and LRIT operation as defined by the IMO are identified.

All text of this standard, whose wording is identical to that in IMO SOLAS Convention 1974 as amended in 1988 and Resolutions A.807(19), MSC.263(84) and MSC.306(87) is printed in *italics* and reference made to the Resolution/Recommendation and subclause number.

This standard covers equipment construction and testing. Matters relating to installation may also be found in the Inmarsat Maritime design and installation guidelines (see Bibliography). Those to be found in IMO Resolutions A.807(19), MSC.263(84) and MSC.306(87) are reproduced in Annex A.

Responsibility for type approval of Inmarsat-C and Inmarsat-EGC is vested in Inmarsat by IMO Resolutions A.807(19) and MSC.306(87) (see 3.2.1). Therefore, this standard does not reproduce Inmarsat test procedures in full, but refers to where they are given in Inmarsat documentation cited in the normative references to this standard (Annex C).

NOTE 2 For the purposes of this standard the terms Inmarsat-C, Inmarsat Standard-C, Standard-C refer to the same equipment.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60945:2002, *Maritime navigation and radiocommunication equipment and systems – General requirements – Methods of testing and required test results*

IEC 61108 (all parts), *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS)*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IMO, *International Convention for the safety of life at sea (SOLAS), 1974 as amended*

IMO Resolution A.694(17):1991, *General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids*

IMO Resolution A.807(19):1995, *Performance Standards for INMARSAT-C ship earth stations capable of transmitting and receiving direct-printing communications as amended by Resolution MSC.68(68) Annex 4*

IMO Resolution MSC.263(84):2008, *Revised performance standards and functional requirements for the long-range identification and tracking of ships.*

IMO Resolution MSC.306(87):2010, *Revised performance standards for enhanced group call (EGC) equipment*

Inmarsat, *Inmarsat-C System definition manual (SDM) Volume 2 – Part 2, Application Note 2, Position reporting service*

Inmarsat, *Inmarsat-C System definition manual (SDM) Volume 2 – Part 2, Application Note 3, Application developers guide to data reporting and polling*

Inmarsat, *Inmarsat-C System definition manual (SDM) Volume 3 – Part 2, Chapter 2, Mobile earth station technical requirements*

Inmarsat, *Inmarsat-C System definition manual (SDM) Volume 3 – Part 2, Chapter 5, Ship earth station technical requirements*

Inmarsat, *Inmarsat-C System definition manual (SDM) Volume 3 – Part 2, Chapter 8, Technical requirements for an EGC receiver*

Inmarsat, *Recommended test procedures (RTP) for the type approval of Inmarsat-C mobile earth stations*

3 Performance requirements

3.1 Overview

Subclauses 3.2 through 3.4 of this standard describe performance requirements directly attributable to IMO Resolutions A.807(19) and MSC.306(87) as listed in the normative references. Subclause 3.5 is provided to highlight those requirements of IMO Resolution A.694(17) which are not included in the normal Inmarsat requirements for Inmarsat-C SES type approval. Subclause 3.6 describes other requirements which are required to make the equipment suitable for GMDSS applications. Subclause 3.7 describes performance requirements attributable to IMO Resolution MSC.263(84) for long-range identification and tracking.