
Pomorska navigacijska in radiokomunikacijska oprema in sistemi – Globalni satelitski navigacijski sistemi (GNSS) – 4. del: Ladijska pomorska oprema sistemov DGPS in DGLONASS za sprejem radijskih svetilnikov – Zahteve za lastnosti, metode preskušanja in zahtevani preskus (IEC 61108-4:2004)

Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 4: Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment – Performance requirements, methods of testing and required test (IEC 61108-4:2004)

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English version

**Maritime navigation and radiocommunication equipment and systems –
Global navigation satellite systems (GNSS)
Part 4: Shipborne DGPS and DGLONASS maritime
radio beacon receiver equipment –
Performance requirements, methods of testing and required test results
(IEC 61108-4:2004)**

Matériels et systèmes de navigation
et de radiocommunication maritimes –
Système mondial de navigation
par satellite (GNSS)

Partie 4: Equipement pour récepteur de
balises radioélectriques DGLONASS et
DGPS embarqués –

Exigences d'exploitation et de
fonctionnement, méthodes d'essai et
résultats d'essai exigés

(CEI 61108-4:2004)

Navigations- und Funkkommunikations-
geräte und -systeme für die Seeschifffahrt –
Weltweite Navigations-Satellitensysteme
(GNSS)

Teil 4: DGPS- und DGLONASS-
Seefunkbaken-Empfangsanlagen –
Leistungsanforderungen, Prüfverfahren
und geforderte Prüfergebnisse

(IEC 61108-4:2004)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 80/394/FDIS, future edition 1 of 61108-4, prepared by IEC TC 80, Maritime navigation and radiocommunication equipment and systems, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61108-4 on 2004-10-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2005-07-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2007-10-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61108-4:2004 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

**Normative references to international publications
with their corresponding European publications**

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

NOTE Where an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60945	- ¹⁾	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	2002 ²⁾
IEC 61162-1	- ¹⁾	Maritime navigation and radiocommunication equipment and systems - Digital interfaces Part 1: Single talker and multiple listeners	EN 61162-1	2000 ²⁾
IEC 61162-2	- ¹⁾	Part 2: Single talker and multiple listeners, high-speed transmission	EN 61162-2	1998 ²⁾
IMO Resolution MSC.114(73)	- ¹⁾	Performance standards for shipborne DGPS and DGLONASS maritime radio beacon receiver equipment	-	-
IMO Resolution A.694(17)	- ¹⁾	General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids	-	-
ITU-R M.823-2	- ¹⁾	Technical characteristics of differential transmissions for global navigation satellite systems (GNSS) from maritime radio beacons in the frequency band 285 kHz-325 kHz (283,5 kHz-315 kHz in Region 1)	-	-

1) Undated reference.

2) Valid edition at date of issue.

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INTERNATIONAL STANDARD

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First edition
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Part 4:

Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment – Performance requirements, methods of testing and required test results

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MARITIME NAVIGATION AND RADIOCOMMUNICATION
EQUIPMENT AND SYSTEMS –
GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) –**

**Part 4: Shipborne DGPS and DGLONASS maritime
radio beacon receiver equipment –
Performance requirements, methods of testing
and required test results**

FOREWORD

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International Standard IEC 61108-4 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

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

FDIS	Report on voting
80/394/FDIS	80/398/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.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

IEC 61108 consists of the following parts, under the general title *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS)*:

Part 1: Global positioning system (GPS) – Receiver equipment – Performance standards, methods of testing and required test results

Part 2: Global navigation satellite system (GLONASS) – Receiver equipment – Performance standards, methods of testing and required test results

Part 3: (To be used at a later date)

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

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**MARITIME NAVIGATION AND RADIOCOMMUNICATION
EQUIPMENT AND SYSTEMS –
GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS) –**

**Part 4: Shipborne DGPS and DGLONASS maritime
radio beacon receiver equipment –
Performance requirements, methods of testing
and required test results**

1 Scope

This part of IEC 61108 specifies the minimum operational and performance requirements, methods of testing and required test results conforming to performance standards not inferior to those adopted by the IMO in resolution MSC.114(73). In addition, it takes account of IMO resolution A.694(17) and is associated with IEC 60945. When a requirement of this standard is different from IEC 60945, the requirement in this standard shall take precedence.

This standard may be satisfied by equipment integral with GNSS equipment.

This standard is applicable to HSC.

All text of this standard, whose wording is identical to that in IMO resolution MSC.114(73) and ITU-R M.823 is printed in *italics* and the resolution (abbreviated to – 114 and M.823 respectively) and paragraph numbers are indicated in brackets i.e. (114/3.3 or M.823/3.3).

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2 Normative references

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

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

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

IEC 61162-2, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 2: Single talker and multiple listeners, high speed transmission*

IMO Resolution MSC.114(73), *Revised recommendation on performance standards for shipborne DGPS and DGLONASS maritime radio beacon receiver equipment*

IMO Resolution A.694(17), *General requirements for shipborne radio equipment forming part of the Global Maritime Distress and Safety System (GMDSS) and for electronic navigational aids*

ITU-R M.823-2, *Technical characteristics of differential transmissions for Global Navigation Satellite Systems (GNSS) from maritime radio beacons in the frequency band 283,5 – 315 kHz in Region 1 and 285 – 325 kHz in Regions 2 and 3*

3 Terms, definitions and abbreviations

For the purposes of this standard the following definitions and abbreviations apply.

3.1 Definitions

3.1.1

Eurofix

the Eurofix datalink is a scheme for modulation of the Loran-C and Chayka signals to establish a broadcast capability that can be used for distribution of GNSS corrections, integrity data and other information. Similar developments in the US are referred to as LORAN-COMM

3.1.2

global navigation satellite system (GNSS)

is a world-wide position, time and velocity radio determination system comprising space, ground and user segments

3.1.3

integrity

is the ability to provide users with warnings within a specified time when the system should not be used for navigation

3.2 Abbreviations

BER	Bit error rate
bps	Bits per second
DGLONASS	Differential GLONASS
DGNSS	Differential GNSS
DGPS	Differential GPS
EGNOS	European Geo-stationary Navigational Overlay System
EPFS	Electronic position fixing system
EUT	Equipment under test
MSAS	Multi-Satellite Augmentation System
MSK	Minimum shift keying
RTK	Real-Time Kinematics
SNR	Signal to noise ratio
UDRE	User defined range error
VTS	Vessel Tracking Services
WAAS	Wide-Area Augmentation System
WER	Word error rate

4 Performance requirements

4.1 Introduction

Differential services broadcast information for augmenting Global Positioning System (GPS) and the Global Navigation Satellite System (GLONASS) to provide the accuracy and integrity required for entrances and harbour approaches and other waters in which the freedom to manoeuvre is limited. Various service providers are broadcasting differential information applicable to localised areas. Different services provide information for augmenting GPS, GLONASS, or both.(114/1.1)