SLOVENSKI STANDARD

SIST EN 61924:2007

januar 2007

Pomorska navigacijska in radiokomunikacijska oprema in sistemi - Integrirani navigacijski sistemi - Zahteve za delovanje in lastnosti, preskusne metode in zahtevani rezultat preskušanja (IEC 61924:2006)

(istoveten EN 61924:2006)

Maritime navigation and radiocommunication equipment and systems - Integrated navigation systems - Operational and performance requirements, methods of testing and required test result (IEC 61924:2006)

ICS 47.020.70

Referenčna številka
SIST EN 61924:2007(en)

EUROPEAN STANDARD

NORME EUROPÉENNE

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EN 61924

June 2006

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English version

Maritime navigation and radiocommunication equipment and systems - Integrated navigation systems - Operational and performance requirements, methods of testing and required test results

(IEC 61924:2006)

Matériels et systèmes de navigation et de radiocommunication - Systèmes de navigation intégrés - Exigences opérationnelles et de fonctionnement, méthodes d'essai et résultats exigibles (CEI 61924:2006)

Navigations- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt - Integrierte Navigationssysteme - Betriebs- und Leistungsanforderungen, Prüfverfahren und geforderte Prüfergebnisse (IEC 61924:2006)

This European Standard was approved by CENELEC on 2006-06-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in two official versions (English and German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

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

Ref. No. EN 61924:2006 E

Foreword

The text of document 80/433/FDIS, future edition 1 of IEC 61924, 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 61924 on 2006-06-01.

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)	2007-03-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2009-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61924:2006 was approved by CENELEC as a European Standard without any modification.

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

Publication	Year	Title	EN/HD	Year
IEC 60945	2002	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	2002
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)]	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 2: Single talker and multiple listeners, high-speed transmission	EN 61162-2	1998[2)]
IEC 61174	2001	Maritime navigation and radiocommunication equipment and systems - Electronic chart display and information system (ECDIS) - Operational and performance requirements, methods of testing and required test results	EN 61174	2001
IEC 61209	1999	Maritime navigation and radiocommunication equipment and systems - Integrated bridge systems (IBS) - Operational and performance requirements, methods of testing and required test results	EN 61209	1999
IEC 62065	2002	Maritime navigation and radiocommunication equipment and systems - Track control systems - Operational and performance requirements, methods of testing and required test results	EN 62065	2002
IMO A.224(VII)	-[1)]	Performance standards for echo-sounding equipment	-	-
IMO A.424(XI)	-[1)]	Performance standards for gyro-compasses	-	-
IMO A.529(XIII)	-[1)]	Accuracy standards for navigation	-	-

[1)] Undated reference.

[2)] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IMO 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	-	-
IMO A.815(19)	-[1)]	Worldwide radionavigation system	-	-
IMO A.821(19)	-[1)]	Performance standards for gyro-compasses for high-speed craft	-	-
IMO A.823(19)	-[1)]	Performance standards for automatic radar plotting aids (ARPAs)	-	-
IMO A.824(19)	-[1)]	Performance standards for devices to indicate speed and distance	-	-
IMO A.830(19)	-[1)]	Code on alarms and indicators	-	-
IMO A.893(21)	-[1)]	Guidelines for voyage planning	-	-
IMO	1974	International Convention for the Safety of Life at Sea (SOLAS)	-	-
IMO MSC.64(67) Annex 1	-[1)]	Recommendation on performance standards for integrated bridge systems (IBS)	-	-
IMO MSC.64(67) Annex 4	-[1)]	Recommendation on performance standards for radar equipment	-	-
IMO MSC.86(70) Annex 3	-[1)]	Performance standards for an integrated navigation system (INS)	-	-
ISO 11674	2000	Ships and marine technology - Heading control systems	-	-

INTERNATIONAL STANDARD

IEC 61924

First edition
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Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems – Operational and performance requirements, methods of testing and required test results

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS – OPERATIONAL AND PERFORMANCE REQUIREMENTS, METHODS OF TESTING AND REQUIRED TEST RESULTS

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.

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International Standard IEC 61924 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
80/433/FDIS	80/440/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.

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

INTRODUCTION

International Standard IEC 61924 has been developed by IEC Technical Committee 80 to clarify the IMO Resolution MSC 86(70) Annex 3 Recommendation on Performance Standards for an Integrated Navigation System (INS). This standard provides adequate requirements, methods of tests and required test results to facilitate type approval.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS – OPERATIONAL AND PERFORMANCE REQUIREMENTS, METHODS OF TESTING AND REQUIRED TEST RESULTS

1 Scope

This International Standard specifies the minimum requirements for the design, manufacture, integration, methods of testing and required test results for an integrated navigation system (INS) to comply with the International Maritime Organization (IMO) requirements of Resolution MSC 86(70) Annex 3. (See Annex A).

This standard aims to resolve conflicts that may occur from the differences in the requirements of the relevant IMO Performance Standards for individual navigational aids when forming part of the INS.

All text of this standard, whose meaning is identical to that in IMO Resolution MSC 86(70) Annex 3 will be printed in *italics* and the Resolution and paragraph number indicated between brackets.

This standard is applicable to an INS, that is any *combination of navigational aids that provides functions beyond the general intent defined in the respective performance standards adopted by the Organization for individual equipment* (MSC 86(70) Annex 3, 2.1).

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 60945:2002, *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*

IEC 61174:2001, *Maritime navigation and radiocommunication equipment and systems – Electronic chart display and information system (ECDIS) – Operational and performance requirements, methods of testing and required test results*

IEC 61209:1997, *Maritime navigation and radiocommunication equipment and systems – Integrated bridge systems (IBS) – Operational and performance requirements, methods of testing and required test results*

IEC 62065:2002, *Maritime navigation and radiocommunication equipment and systems – Track control systems – Operational and performance requirements, methods of testing and required test results*

IMO A.224(VII) as amended by MSC.74(69) Annex 4, *Performance standards for echo-sounding equipment*

IMO A.424 (XI), *Performance standards for gyro-compasses*

IMO A.529 (XIII), *Accuracy standards for navigation*

IMO 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*

IMO A.815(19), *World-wide radionavigation system*

IMO A.821(19), *Performance standards for gyro-compasses for high speed craft*

IMO A.823(19), *Performance standards for automatic radar plotting aids*

IMO A.824(19), *Performance standards for devices to indicate speed and distance*

IMO A.830(19), *Code on alarms and indicators*

IMO A.893(21), *Guidelines for voyage planning*

IMO 1974, *International Convention for the Safety of Life at Sea (SOLAS), as amended*

IMO MSC.64 (67) Annex 1, *Recommendation on performance standards for integrated bridge systems (IBS)*

IMO MSC.64 (67) Annex 4, *Recommendation on performance standards for radar equipment*

IMO MSC 86(70) Annex 3, *Performance standards for an integrated navigation system (INS)*

ISO 11674: 2000, *Ships and marine technology – Heading control systems*

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1
accuracy
degree of conformance between the estimated or measured parameter value at a given time and its true parameter value at that time

3.1.2
added value
functionality and information, which are provided by the INS, in addition to the requirements of the performance standard for the individual equipment

3.1.3
aid to navigation
any device or system external to a vessel intended to assist a navigator to determine position or safe course, or to warn of hazards to navigation

3.1.4
alarm
audible signal or audible and visual signal announcing a condition requiring immediate attention or user action

3.1.5
alarm management
functions provided by an INS for harmonising, processing, monitoring and distributing audible and visual announcements and their acknowledgement, silencing and cancelling operations

NOTE The alarm management function administers different levels of announcements: alarms, warnings and indications.

3.1.6
announcement
visual or audible signal issued to the user by the system

3.1.7
automatic control system
control system that may include a heading, track or speed control system

3.1.8
conning position
place on the bridge with a commanding view and which is used by navigators when commanding, manoeuvring and controlling a ship

3.1.9
consistent common reference point
location in a ship to which all measurements such as own ship's position, target range, bearing, relative course, relative speed, pitch and yaw are referred. Typically, this is the conning position on the bridge, but may, for example be the origin of the reference axes of the ship

3.1.10
consistent common reference system
CCRS
sub-system (or function) of an INS for acquisition, processing, storage and distribution of data and information, providing identical and obligatory reference to sub-systems within an INS. The CCRS is the means to ensure that all parts of the INS use the same source and values for a specific type of system data and essential information, for example own ship position, speed through water, heading, time, etc.

3.1.11
detected hazard
hazard identified by a sensor (for example, radar or echo sounder) or reported by a communication device (for example AIS or NAVTEX) and which is available to the INS

3.1.12
entry field
location on a display for the input of data by the operator. The requested information is usually alphanumeric

3.1.13
essential information
information required for the fundamental functions of the INS. This includes as a minimum position, speed, heading and time