



# SLOVENSKI STANDARD

## SIST EN 61174:2004

01-julij-2004

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

Navigationen- und Funkkommunikationsgeräte und -systeme für die Seeschifffahrt - Elektronisches Kartendarstellungs- und Informationssystem (ECDIS) - Betriebs- und Leistungsanforderungen, Prüfverfahren und geforderte Prüfergebnisse

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Matériels et systèmes de navigation et de radiocommunications maritimes - Systèmes de visualisation des cartes électroniques et d'information (ECDIS) - Exigences d'exploitation et de fonctionnement, méthodes d'essai et résultats d'essai exigés

**Ta slovenski standard je istoveten z: EN 61174:2001**

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**ICS:**

47.020.70

Navigacijska in krmilna oprema

Navigation and control equipment

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EUROPEAN STANDARD

**EN 61174**

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2001

ICS 47.020.70

Supersedes EN 61174:1998

English version

**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 61174:2001)**

Matériels et systèmes de navigation  
et de radiocommunications maritimes -  
Systèmes de visualisation des cartes  
électroniques et d'information (ECDIS) -  
Exigences d'exploitation  
et de fonctionnement, méthodes d'essai  
et résultats d'essai exigés  
(CEI 61174:2001)

Navigations- und  
Funkkommunikationsgeräte  
und -systeme für die Seeschifffahrt -  
Elektronisches Kartendarstellungs-  
und Informationssystem (ECDIS) -  
Betriebs- und Leistungsanforderungen,  
Prüfverfahren und geforderte  
Prüfergebnisse  
(IEC 61174:2001)

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This European Standard was approved by CENELEC on 2001-12-01. 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 three official versions (English, French, 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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

EN 61174:2001

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### Foreword

The text of document 80/308/FDIS, future edition 2 of IEC 61174, 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 61174 on 2001-12-01.

This European Standard supersedes EN 61174:1998.

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) 2002-09-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2004-12-01

Annexes designated "normative" are part of the body of the standard. In this standard, annexes A, B, C, D, E, F, G, H, I, J and ZA are normative. Annex ZA has been added by CENELEC.

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### Endorsement notice

The text of the International Standard IEC 61174:2001 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

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

NOTE When 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 60872-1	- <sup>1)</sup>	Maritime navigation and radiocommunication equipment and systems - Radar plotting aids Part 1: Automatic radar plotting aids (ARPA) - Methods of testing and required test results	EN 60872-1	1998 <sup>2)</sup>
IEC 60945	- <sup>1)</sup>	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	1997 <sup>2)</sup>
IEC 61162	Series	Series Maritime navigation and radiocommunication equipment and systems - Digital interfaces	EN 61162	Series
ISO 9000	Series	Quality management and quality assurance standards	EN ISO 9000	Series
IMO SOLAS	1997	IMO International Convention for the Safety of Life at Sea (SOLAS)	-	-
IMO A.424	1979	Performance standards for gyro-compasses	-	-
IMO A.694	1991	General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids	-	-
IMO A.817	1995	Performance standards for electronic chart display and information systems (ECDIS)	-	-

1) Undated reference.

2) Valid edition at time of issue.

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<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IMO A.821	1995	Performance standards for gyro-compasses for high-speed craft	-	-
IMO A.823	1995	Performance standards for automatic radar plotting aids (ARPAs)	-	-
IMO A.824	1995	Performance standards for devices to indicate speed and distance	-	-
IMO MSC.64(67) Annex 4	1996	Performance standards for radar equipment	-	-
IMO MSC.64(67) Annex 5	1996	Amendments to IMO A.817	-	-
IMO MSC.86(70) Annex 4	1998	Amendments to IMO A.817	-	-
IHO S-52	1996	Specifications for chart content and display aspects of ECDIS	-	-
IHO S-52 appendix 1	1996	Guidance on updating the electronic navigational chart	-	-
IHO S-52 appendix 2	1997	Colour and symbol specifications for ECDIS	-	-
IHO S-52 appendix 3	1997	Necessary of ECDIS - Related terms	-	-
IHO S-52 appendix 4	1997	Test data set for use with IEC 61174	-	-
IHO S-57	1996	Transfer standard for digital hydrographic data	-	-
IHO S-61	1999	Product specification for raster navigational charts (RNC)	-	-

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# INTERNATIONAL STANDARD

# IEC 61174

Second edition  
2001-10

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**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**

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61174 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

This second edition of IEC 61174 cancels and replaces the first edition published in 1998, of which it constitutes a technical revision.

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

FDIS	Report on voting
80/308/FDIS	80/316/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 3.

Annexes A, B, C, D, E, F, G, H, I and J form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until June 2004. At this date, the publication will be

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

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## INTRODUCTION

For this second edition of this International Standard, the maintenance team completed the following tasks:

- a) developed minimum operational and performance requirements for the RCDS mode of operation in accordance with appendix 7 of the IMO performance standards as amended by IMO resolution MSC.86, importing much of the text from appendix 7 to produce an unambiguous and user-friendly annex H to this standard;
- b) developed separate tests for back-up arrangements as defined by appendix 6 of the IMO performance standards (see annex G);
- c) clarified the colour tolerance requirements and created allowances for the separate testing of monitors;
- d) performed an extensive review of the standard to ensure proper referencing and language throughout.

Technical committee 80 recognizes that there is further work to be accomplished in this standard, and a future revision is anticipated within 12 to 18 months, to incorporate some critical hydrographic considerations including the RNC test data set, several S-57 definitions and tests and harmonisation of the navigation related symbols.

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## 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

#### 1 Scope

This International Standard specifies the performance requirements, methods of testing and required test results of equipment conforming to performance standards not inferior to those adopted by the IMO in resolution A.817 as amended by annex 5 to IMO resolution MSC.64 and annex 4 to IMO resolution MSC.86.

This standard is based upon the performance standards of IMO resolution A.817, and is also associated with IMO resolution A.694 and IEC 60945. Reference is made, where appropriate, to IMO resolution A.817, and all subclauses whose wording is identical to that in the resolution are printed in italics.

In association with the above IMO resolution A.817, are the International Hydrographic Organization (IHO) special publications S-52, S-57 and S-61. This standard has included extracts from the above publications where they are applicable to this equipment. Where reference is made, all subclauses whose wording is identical to that in the publications, are printed in italics.

The requirements of this standard are not intended to prevent the use of new techniques in equipment and systems, provided the facilities offered are not inferior to those stated.

#### 2 Normative references

The following normative documents contain provisions, which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60872-1: *Maritime navigation and radiocommunication equipment and systems – Radar plotting aids – Part 1: Automatic radar plotting aids (ARPA) – Methods of testing and required test results*

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

IEC 61162 (all parts), *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*

ISO 9000 (all parts), *Quality management and quality assurance standards*

IMO Convention for safety of life at sea (SOLAS) 1997 (as amended)

IMO A.424:1979, *Performance standards for gyro-compasses*

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

IMO A.817:1995, *Performance standards for electronic chart display and information systems (ECDIS)*

IMO A.821:1995, *Performance standards for gyro-compasses for high-speed craft*

IMO A.823:1995, *Performance standards for automatic radar plotting aids (ARPAs)*

IMO A.824:1995, *Performance standards for devices to indicate speed and distance*

IMO MSC.64(67):1996, Annex 4 – *Performance standards for radar equipment*

IMO MSC.64(67):1996, Annex 5 – *Amendment to IMO A.817*

IMO MSC.86(70):1998, Annex 4 – *Amendments to IMO A.817*

IHO S-52:1996, *Specifications for chart content and display aspects of ECDIS*

IHO S-52, appendix 1:1996, *Guidance on updating the electronic navigational chart*

IHO S-52, appendix 2:1997 (as amended), *Colour and symbol specifications for ECDIS*

IHO S-52, appendix 3:1997, *Glossary of ECDIS-related terms*

IHO S-52, appendix 4: *Test data set for use with IEC 61174*

IHO S-57:1996 (as amended), *Transfer standard for digital hydrographic data*

IHO S-61:1999, *Product specification for raster navigational charts (RNC)*

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### 3 Definitions and abbreviations

Definitions of ECDIS related terms pertaining to IMO performance standards for ECDIS are listed in 4.2. A glossary of ECDIS related terms is included in S-52, appendix 3.

For the purpose of this International Standard the following definitions and abbreviations apply.

#### 3.1 Definitions

##### 3.1.1

##### **CIE colour calibration**

procedure to confirm that the colour specified in S-52, appendix 2 is correctly reproduced on the ECDIS display

##### 3.1.2

##### **common reference system**

sensor input data, providing identical and obligatory reference pertaining to position, course, heading, bearing, speed, velocity, etc. and horizontal datum to different subsystems within an integrated navigation system

##### 3.1.3

##### **compilation scale**

scale with which the chart information meets the IHO requirements for chart accuracy. It is established by the producing hydrographic office and encoded in the ENC

##### 3.1.4

##### **corrupted data**

ENC data produced according to the S-57 ENC product specification, but altered or modified during production, transmission, or retrieval

##### 3.1.5

##### **degrade**

reduce the quantity or quality of information content