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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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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS –

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

This third edition of IEC 61174 cancels and replaces the second edition published in 2001, of which it constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

- this edition incorporates revised performance standards for ECDIS adopted by the IMO as resolution MSC.232(82) in December 2006;
- the test methods have been updated accordingly and new tests added for encrypted ENC data;

- the revised IMO performance standards refer to performance standards for displays adopted by the IMO as resolution MSC.191(79) and these have been incorporated by reference to IEC 62288;
- Annex E of the previous edition which defined navigation symbols has been deleted as this information is now in IEC 62288.
- five new annexes have been added.

IMO changed the order of the performance standards in MSC.232(82) compared with the previous standards in resolution A.817(19). Annex N gives a cross-referencing of clause numbering.

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

FDIS	Report on voting
80/535/FDIS	80/542/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- withdrawn,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 publication may be issued at a later date.

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 MSC.232(82).

This standard is based upon the performance standards of IMO resolution MSC.232(82), and is also associated with IMO resolution A.694(17) and IEC 60945. Reference is made, where appropriate, to IMO resolution MSC.232(82), and all subclauses whose wording is identical to that in the resolution are printed in italics.

In association with the above IMO resolution MSC.232(82), are the International Hydrographic Organization (IHO) special publications S-32, S-52, S-57, S-61, S-63 and S-64. 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.

(232/A2.1) *These performance standards should apply to all ECDIS equipment carried on all ships as follows:*

– *dedicated standalone workstation.*

– *a multifunction workstation as part of an INS.*

(232/A2.2) *These performance standards apply to ECDIS mode of operation, ECDIS in RCDS mode of operation as specified in* Annex G *and ECDIS backup arrangements as specified in* Annex F*.*

(232/A2.3) *Requirements for structure and format of the chart data, encryption of chart data as well as the presentation of chart data are within the scope of relevant IHO standards, including those listed in* the normative references*.*

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

IEC 62288, *Maritime navigation and radiocommunication equipment and systems – Presentation of navigation-related information on shipborne navigational displays – General requirements – Methods of testing and required test results*

IEC 62388, *Maritime navigation and radiocommunication equipment and systems – Shipborne Radar – Performance requirements – Methods of testing and required test results*

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

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

IMO 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 A.821(19):1995, *Performance standards for gyro-compasses for high-speed craft*

IMO A.823(19):1995, *Performance standards for automatic radar plotting aids*

IMO A.824(19):1995, *Performance standards for devices to indicate speed and distance*

IMO A.830(19):1995, Code on Alarms and Indicators

IMO MSC.191(79), *Performance standards for the presentation of navigation-related information on shipborne navigational displays*

IMO MSC.192(79), *Revised performance standards for radar equipment*

IMO MSC.232(82):2006, *Revised Performance standards for electronic chart display and information systems (ECDIS)*

IMO MSC/Circ.982 (2000), *Guidelines on ergonomic criteria for bridge equipment and layout*

IMO SN/Circ.243 (2004), *Guidelines for the Presentation of Navigation-related Symbols, Terms and Abbreviations*

IMO SN.1/Circ.266 (2007), *Maintenance of electronic chart display and information system (ECDIS) software*

IHO M-3:2007, *Resolutions of the IHO, Chapter A, Section 3, Technical Resolution 3.11*

IHO S-32, appendix 1, *Hydrographic dictionary – Glossary of ECDIS related terms*

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 2:2004 *Colour and symbol specifications for ECDIS*

IHO S-57, appendix B.1: 2000, *ENC product specification*

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

IHO S-63:2008, *IHO data protection scheme*

IHO S-64, *Test data sets for ECDIS*