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INTERNATIONAL STANDARD

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

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

FOREWORD

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International Standard IEC 62288 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

This standard supports the performance standards for the presentation of navigation-related information on shipborne navigational displays, adopted by the IMO in resolution MSC.191(79) in December 2004.

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

FDIS	Report on voting
80/527/FDIS	80/540/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- withdrawn,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 –

Presentation of navigation-related information on shipborne navigational displays – General requirements, methods of testing and required test results

1 Scope

This International Standard specifies the general requirements, methods of testing, and required test results, for the presentation of navigation-related information on shipborne navigational displays in support of IMO resolution MSC.191(79).

(MSC191/1) IMO resolution MSC.191(79) *harmonizes the requirements for the presentation of navigation-related information on the bridge of a ship to ensure that all navigational displays adopt a consistent human machine interface philosophy and implementation.*

(MSC191/1) IMO resolution MSC.191(79) *supplements and, in the case of a conflict, takes priority over, the presentation requirements of the individual performance standards adopted by the* IMO *for relevant navigational systems and equipment and covers the presentation of navigation-related information by equipment for which Performance Standards have not been adopted* by *the* IMO.

This standard also addresses the guidelines for the presentation of navigation-related symbols, terms and abbreviations in Safety of Navigation circular SN/Circ.243 together with some requirements published in resolution MSC.192(79) on radar; resolution MSC.232(82) on ECDIS; and ergonomic criteria published in circular MSC/Circ.982.

The symbols from SN/Circ.243 are reproduced and expanded upon in Annex A. The terms and abbreviations from SN/Circ.243 are reproduced and expanded upon in Annex B. Additional guidance on display and dialogue design from MSC/Circ.982 is listed by reference in Annex C.

Some requirements set forth in MSC.191(79) duplicate requirements set forth in other IMO documents (for example, Resolutions A.694(17), MSC.192(79), MSC.232(82), etc.) or in the IEC standards further specifying the methods of test and required test results for those requirements (for example, IEC 60945, IEC 61174, IEC 62388, etc.). Where a requirement in this standard duplicates a requirement in another standard, the method(s) of test for that requirement may refer to the other standard.

NOTE Manufactures may offer relevant test data from compliance tests to other standards such as IEC 60945, IEC 61174, IEC 62388, etc. as evidence of compliance with appropriate tests of this standard.

This standard is organized so that each group of requirements is immediately followed by a clause identifying the method(s) of test. The methods of test are derived from ISO 9241-12 on the presentation of information on visual displays. Guidance on testing is provided in Annex D.

NOTE All text in this standard whose wording is identical to text contained in an IMO document is printed in *italics*. Reference to the document is noted at the beginning of the paragraph. The notation contains a prefix referring to the document and a suffix with the paragraph number from the document (for example, (MSC191/1); (SN243/1), etc.).

1.1 Purpose

(MSC191/2) This standard *specifies the presentation of navigational information on the bridge of a ship, including the consistent use of navigational terms, abbreviations, colours and symbols, as well as other presentation characteristics.*

(MSC191/2) This standard *also addresses the presentation of information related to specific navigational tasks by recognising user selected presentations in addition to presentations required by the* relevant *individual performance standards adopted by the* IMO.

1.2 Application

(MSC191/3) This standard *is applicable to any display equipment associated with the navigational systems and equipment for which individual performance standards have been adopted by the* IMO. It addresses the stand-alone displays for radar and ECDIS, the multifunction displays used in IBS and INS and composite presentations that integrate information derived from two or more systems. This standard *also addresses display equipment associated with navigational systems and equipment for which individual performance standards have not been adopted* by the IMO.

NOTE Some IEC standards may individually include display requirements in conformity with IMO resolution MSC.191(79).

(MSC191/3) *The general principles* and the physical characteristics specified in Clauses 4 and 7, respectively, of this standard *are applicable* to *all displays on the bridge of a ship.*

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 tests of testing and required test results*

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

IEC 61174, *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 61966-4:2000, *Multimedia systems and equipment – Colour measurement and management – Part 4: Equipment using liquid crystal display panels*

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

IEC 62388:2007, *Maritime navigation and radiocommunication equipment and systems – Shipborne radar – Performance requirements, methods of testing and required test results*

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*

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 MSC.191(79):2004, *Performance standards for the presentation of navigation related information on shipborne navigational displays*

IMO MSC.192(79):2004, *Performance standards for radar equipment*

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

IMO SN/Circ.243:2004, *Guidelines for the presentation of navigation related symbols, terms and abbreviations*

ISO 13406-2: 2001, *Ergonomic requirements for work with visual displays based on flat panels – Part 2: Ergonomic requirements for flat panel displays*

ISO 80416-4:2005, *Basic principles for graphical symbols for use on equipment – Part 4: Guidelines for the adaptation of graphical symbols for use on screens and displays (icons)*

VESA-2001-6:2001, *Flat Panel Display Measurements (FPDM)*