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

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CONTENTS

FOREWORD ....................................................................................................................... 6

1 Scope ............................................................................................................................. 8

2 Normative references ................................................................................................. 9

3 Terms and definitions .............................................................................................. 10

4 General requirements for all displays ...................................................................... 14
   4.1 Application of IEC 60945 ....................................................................................... 15
      4.1.1 General requirements ....................................................................................... 15
   4.2 Arrangement of information ................................................................................ 15
      4.2.1 Consistency of layout ....................................................................................... 15
      4.2.2 Consistent presentation of information ............................................................... 15
      4.2.3 Separation of operational display area ................................................................. 16
   4.3 Readability ............................................................................................................. 16
      4.3.1 Readability under all ambient light conditions ..................................................... 16
      4.3.2 Legibility of alphanumeric data and text .............................................................. 17
      4.3.3 Presentation of text ............................................................................................ 18
      4.3.4 Icons .................................................................................................................. 18
   4.4 Colours and intensity ............................................................................................ 18
      4.4.1 Discrimination of colours .................................................................................. 18
   4.5 Symbols ................................................................................................................. 19
      4.5.1 Operational information .................................................................................... 19
      4.5.2 Electronic chart information .............................................................................. 20
   4.6 Colour coding of information ............................................................................... 20
      4.6.1 Colour coding for discrimination ...................................................................... 20
      4.6.2 Colour coding of information ............................................................................. 21
      4.6.3 Colour coding in combination with other attributes .......................................... 21
      4.6.4 Flashing of information ...................................................................................... 21
   4.7 Integrity marking .................................................................................................... 21
      4.7.1 Indication of source, validity and integrity status ............................................... 21
      4.7.2 Colour coding of validity and integrity ................................................................. 22
      4.7.3 Indication of presentation failure ....................................................................... 22
   4.8 Alarms and indications .......................................................................................... 22
      4.8.1 Operational status .............................................................................................. 22
      4.8.2 List of alarms ...................................................................................................... 23
      4.8.3 Alarm related information from multiple sources .............................................. 23
   4.9 Presentation mode .................................................................................................. 23
      4.9.1 Indication of presentation mode in use ................................................................. 23
   4.10 Manuals ................................................................................................................ 24
      4.10.1 User manuals, instructions and reference guides ............................................... 24
5 Presentation of operational information .................................................................... 24
   5.1 Presentation of own ship information ................................................................. 24
      5.1.1 Graphical representation of own ship ................................................................. 24
   5.2 Presentation of chart information ......................................................................... 25
      5.2.1 Alteration of chart information ......................................................................... 25
      5.2.2 Colours and symbols for charted information .................................................... 25
   5.3 Presentation of radar information ........................................................................ 26
      5.3.1 Radar video images ........................................................................................... 26
5.3.2 Target trails ........................................................................................................ 27

5.4 Presentation of target information ........................................................................ 27
5.4.1 Providing target information ........................................................................... 27
5.4.2 Consistent user interface for target information .............................................. 28
5.4.3 Indication of exceeding target capacity ............................................................ 29
5.4.4 Filtering sleeping AIS targets ........................................................................... 29
5.4.5 Activation of AIS targets .................................................................................. 30
5.4.6 Graphical presentation of targets ..................................................................... 30
5.4.7 Target selection .................................................................................................. 31
5.4.8 Indication of target derivation .......................................................................... 32
5.4.9 Presentation of tracked radar target information .............................................. 32
5.4.10 Presentation of reported AIS target information ............................................. 32
5.4.11 Continual update of target information .......................................................... 33
5.4.12 Own ship’s AIS information .......................................................................... 34
5.4.13 Obscuring the operational display area ........................................................... 34

5.5 Operational alarms ................................................................................................. 34
5.5.1 Alarm status ....................................................................................................... 34
5.5.2 CPA/TCPA alarms ............................................................................................ 34
5.5.3 Acquisition/activation zones ............................................................................. 34
5.5.4 Lost target alarms ............................................................................................. 35

5.6 AIS and radar target association ............................................................................ 36
5.6.1 Target association .............................................................................................. 36
5.6.2 AIS presentation status ..................................................................................... 36
5.6.3 Trial manoeuvre ................................................................................................ 37

5.7 Measurement ........................................................................................................... 38
5.7.1 Measurement from own ship ........................................................................... 38
5.7.2 Bearing and range measurements .................................................................... 38

5.8 Navigation Tools .................................................................................................... 38
5.8.1 Range rings ....................................................................................................... 39
5.8.2 Variable range marker (VRM) .......................................................................... 39
5.8.3 Bearing scale ..................................................................................................... 40
5.8.4 Electronic bearing line (EBL) .......................................................................... 41
5.8.5 Parallel index lines (PI) .................................................................................... 42
5.8.6 Offset measurement of range and bearing ....................................................... 42
5.8.7 User cursor ....................................................................................................... 43

6 Radar and chart displays .......................................................................................... 44
6.1 General .................................................................................................................. 44
6.1.1 Multifunction displays ..................................................................................... 44
6.1.2 Simultaneous display of radar and chart data .................................................. 45
6.1.3 Range scales ..................................................................................................... 45
6.1.4 Range ring scale ............................................................................................... 45
6.1.5 Operational display area ................................................................................... 46
6.1.6 Motion display modes ....................................................................................... 46
6.1.7 Orientation modes ............................................................................................ 47
6.1.8 Off-centring ..................................................................................................... 47
6.1.9 Stabilisation modes ........................................................................................... 48

6.2 Radar displays ........................................................................................................ 48
6.2.1 Radar video image ............................................................................................ 48
6.2.2 Brightness of radar information ....................................................................... 49
6.2.3 Display of chart information on radar ............................................................ 49
6.2.4 Priority of radar information ........................................................................ 50
6.2.5 Display of map graphics ................................................................................ 50
6.3 Chart displays .................................................................................................... 51
6.3.1 Display of chart information ......................................................................... 51
6.3.2 IMO display categories .................................................................................. 52
6.3.3 Adding or removing information from the display ....................................... 52
6.3.4 Safety contour ................................................................................................ 53
6.3.5 Safety depth .................................................................................................. 53
6.3.6 Chart scale .................................................................................................... 53
6.3.7 Display of radar and target information ....................................................... 53
6.3.8 Display of additional navigation-related information ................................... 54
6.4 Composite task-oriented presentations ............................................................ 54
6.4.1 User-configured presentations ...................................................................... 54
6.4.2 Information associated with the task-at-hand .............................................. 54

7 Physical requirements ....................................................................................... 55
7.1 General ............................................................................................................. 55
7.2 Display adjustment ........................................................................................... 55
7.2.1 Contrast and brightness ................................................................................ 55
7.2.2 Magnetic interference ................................................................................... 56
7.2.3 Temporal stability ........................................................................................ 56
7.2.4 Physical controls and status indicators ....................................................... 56
7.3 Screen size ....................................................................................................... 57
7.3.1 Requirement .................................................................................................. 57
7.3.2 Method of test and required results ............................................................ 57
7.4 Multicoloured display equipment ..................................................................... 57
7.4.1 Requirement .................................................................................................. 57
7.4.2 Method of test and required results ............................................................ 58
7.5 Screen resolution .............................................................................................. 58
7.5.1 Requirement .................................................................................................. 58
7.5.2 Method of test and required results ............................................................ 58
7.6 Screen viewing angle ....................................................................................... 58
7.6.1 Requirement .................................................................................................. 58
7.6.2 Methods of test and required results ............................................................ 58

Annex A (normative) Presentation colours and symbols ....................................... 59
Annex B (normative) Guidelines for the presentation of navigation-related terminology and abbreviations .......................................................... 82
Annex C (informative) Guidance on display and dialogue design in MSC/Circ.982 .......................................................... 89
Annex D (informative) Guidance on testing ............................................................ 91
Annex E (normative) Operational controls ............................................................. 96

Bibliography .......................................................................................................... 100

Table 1 – Ambient light conditions ......................................................................... 16
Table 2 – Operational status .................................................................................. 22
Table 3 – Minimum number of tracked radar targets to be displayed ..................... 28
Table 4 – Minimum number of AIS targets to be displayed .................................... 28
Table 5 – AIS status .............................................................................................. 36
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:

<table>
<thead>
<tr>
<th>FDIS</th>
<th>Report on voting</th>
</tr>
</thead>
<tbody>
<tr>
<td>80/527/FDIS</td>
<td>80/540/RVD</td>
</tr>
</tbody>
</table>

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.
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)

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