

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**

Document Preview

IEC 62288:2008

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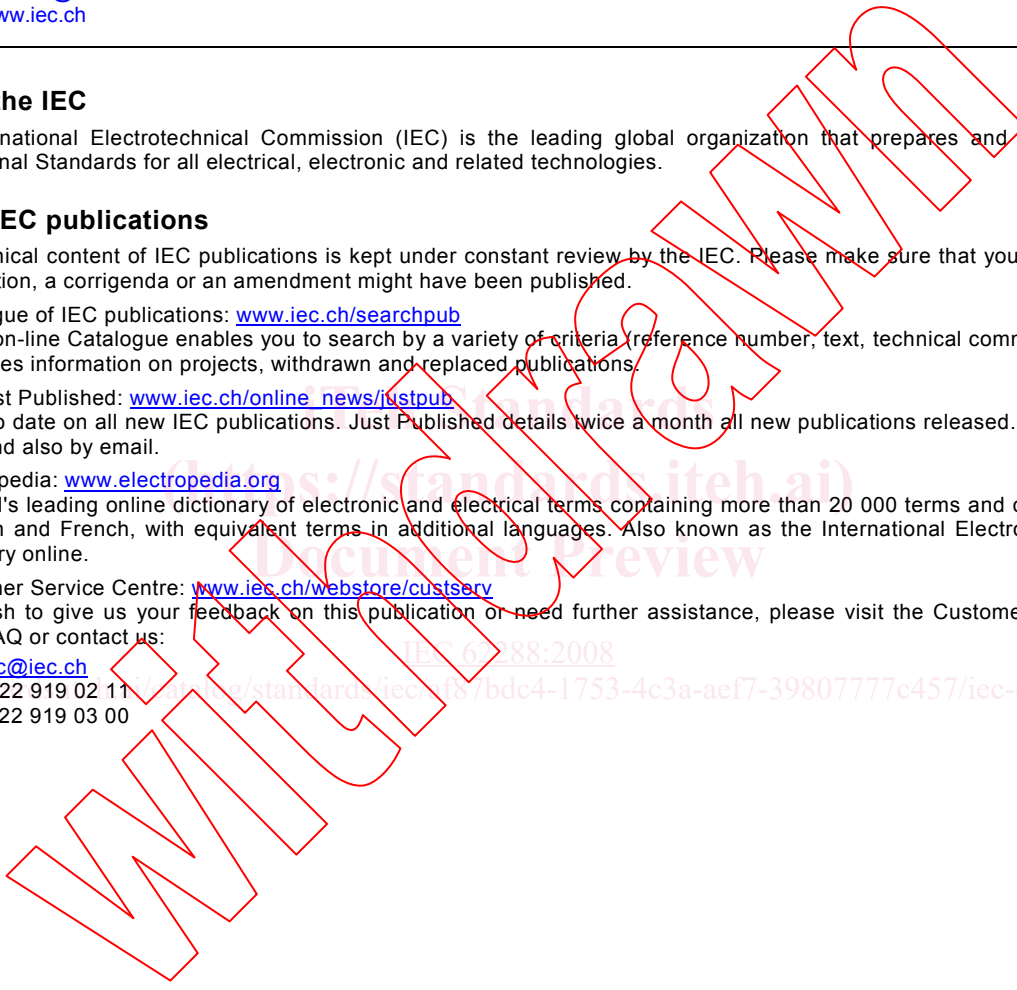
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INTERNATIONAL
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PRICE CODE **XD**

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

Table A.1 – Own ship symbols	60
Table A.2 – Radar and AIS symbols	64
Table A.3 – Navigation symbols	74
Table A.4 – Navigation tools	80
Table A.5 – Other symbols	81
Table B.1 – List of standard terms and abbreviations	84
Table B.2 – List of standard units of measurement and abbreviations	88
Table C.1 – Paragraphs in MSC/Circ.982 associated with IEC 60945 requirements	89
Table C.2 – Other paragraphs in MSC/Circ.982 related to display design	90
Table C.3 – Other paragraphs in MSC/Circ.982 partially related to display design	90
Table E.1 – Top-level grouping of data and control functions for radar applications	96
Table E.2 – Top-level grouping of data and control functions for charting	97
Table E.3 – General control icons	98
Table E.4 – Task-oriented measurement control icons	98
Table E.5 – Radar specific control icons	99

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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

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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.

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WITHDRAWN

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)*

3 Terms and definitions

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

3.1

activated AIS target

(MSC191/A) *target activated for the display of additional graphically presented information (for example, heading line, velocity vector, etc.)*

3.2

automatic identification system

AIS

system which complies with the requirements set forth in Annex 3 to IMO Resolution MSC.74(69)

3.3

AIS target (or reported AIS target)

(MSC191/A) *target generated from an AIS message*

3.4

associated target

(MSC191/A) *target simultaneously representing a tracked radar target and a reported AIS target having similar parameters (for example, position, course, speed, etc.) and which comply with an association algorithm*

3.5

consistent common reference point

CCRP

(MSC191/A) *location on own ship, to which all horizontal measurements such as own ship position, heading, attitude, and target range, bearing, relative course, relative speed, closest point of approach (CPA) or time to closest point of approach (TCPA) are referenced, typically the conning position of the ship. An alternative location (or multiple locations) may be used as necessary where clearly indicated or distinctively obvious, for example, the origin of the reference axis of the ship*

3.6**composite presentation**

integrated presentation that is derived from the simultaneous display of information from two or more navigational systems or equipment

3.7**dangerous target**

(MSC191/A) tracked radar or reported AIS target with a predicted CPA and TCPA that violates values preset by the user. The respective target is marked by a “dangerous target” symbol

3.8**dead-reckoned position****DR**

position extrapolated from the last accepted position update, based on present course and speed, and updated on a time interval selected by the operator

3.9**display base**

(MSC191/A) level of information which cannot be removed from the ECDIS display, consisting of information which is required at all times in all geographic areas and all circumstances. It is not intended to be sufficient for safe navigation

3.10**display equipment**

device capable of representing information visually

3.11**doubtful integrity**

property of information where its accuracy, timeliness or completeness cannot be measured or determined

3.12**electronic chart display and information system****ECDIS**

system which complies with the requirements set forth in IMO Resolution MSC.232(82)

3.13**electronic chart information**

one or more electronic chart databases (for example, ENC)

3.14**electronic navigational chart****ENC**

(MSC191/A) database standardised as to content, structure and format according to IHO S-57 and its Appendix B.1 and issued by, or on the authority of, a Government

3.15**estimated position****EP**

position of own ship determined by the common intersection of two LOPs

3.16**fix**

position of own ship determined, without reference to any former position, by the common intersection of three or more LOPs

3.17

heading

(MSC191/A) horizontal *direction in which the bow of a ship is actually pointing* at any instant, expressed as an angular displacement from north

3.18

human machine interface

interaction interface between humans and machines consisting of all elements used to achieve a particular goal, or the task interface between humans and machines resulting from the allocation of functions to humans and/or machines

3.19

integrated bridge system

IBS

system which complies with the requirements set forth in Annex 1 to IMO Resolution MSC.64(67)

3.20

icon

graphical symbol with a particular meaning used to convey information independent of language. Icons may be used for visual identification or reinforcement of a textual description, to invoke a function, or to open an object when selected with the cursor

3.21

important indication

(MSC191/A) *marking of an operational status of displayed information which needs special attention, for example, information with low integrity or invalid information*

3.22

integrated navigation system

INS

system which complies with the requirements set forth in IMO Resolution MSC.252(83)

3.23

integrity

property of information as being accurate, timely, complete and uncorrupted

3.24

line of position

LOP

plotted line on which own ship is located determined by observation or measurement of the range or bearing to an aid to navigation or other charted element

3.25

lost target

(MSC191/A) tracked radar or reported AIS *target* for which the system is no longer receiving *valid position data*. *The target is represented by a "lost target" symbol*

3.26

menu

area of the display that is allocated to a structured list of options for the selection and entry of operational parameters, data and commands

3.27

multifunction display

single visual display unit that can present, either simultaneously or through a series of selectable pages, information from multiple systems or equipment. A multifunction display