IEC 62288

Edition 2.0 2014-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

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

Matériels et systèmes de navigation et de radiocommunication maritimes – Présentation des informations relatives à la navigation sur des affichages de navigation de bord – Exigences générales, méthodes d'essai et résultats d'essai exigés

IEC 62288:2014-07(en-fr)

IEC Central Office
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
info@iec.ch
www.iec.ch

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INTERNATIONAL
ELECTROTECHNICAL
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COMMISSION
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INTERNATIONALE

ICS 47.020.70

ISBN 978-2-8322-4514-9

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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.

This second edition cancels and replaces the first edition published in 2008 and constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- References to IBS have been removed as IMO has revoked MSC.64(67) Annex 1:1996, Performance standards for integrated bridge systems (IBS).

- Subclause 4.9 (Alerts and indicators) has been revised to align the requirements with the IMO resolutions MSC.252(83), MSC.302(87) and A.1021(26) published since MSC.191(79), together with a new Annex F for alert related icons.
- Clause 5 (Presentation of operational information) has been revised with a new requirement added for merging AIS targets from multiple sources.
- Test methods have been reviewed and further guidance on testing added to Annex D. A new normative Annex G has been added for testing of colours, intensity and flicker.
- Annex A (Presentation of colours and symbols) has been revised with AIS AtoN symbols, AIS-SART symbol and wheel over position symbol redefined, and new symbols added for AIS SAR aircraft, AIS SAR vessel, MSI and AIS application specific messages.

This bilingual version (2017-06) corresponds to the English version, published in 2014-07.

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

FDIS	Report on voting
80/733/FDIS	80/738/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.

The French version of this standard has not been voted upon.

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.).

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 stability 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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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 resolutions MSC.191(79) and MSC.302(87).

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 testing and required test results*

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, *Multimedia systems and equipment – Colour measurement and management – Part 4: Equipment using liquid crystal display panels*

IEC 62065, *Maritime navigation and radiocommunication equipment and systems – Track control systems – Operational and performance 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*

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

IHO S-52 Annex A, *IHO ECDIS presentation library*

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.1/Circ.243/Rev.1:2014, *Guidelines for the presentation of navigation related symbols, terms and abbreviations*

IMO MSC.252(83):2007, *Performance standards for integrated navigation systems (INS)*

IMO MSC.302(87):2010, *Performance standards for bridge alert management (BAM)*

IMO A.1021(26):2009, *Code on Alerts and Indications*

VESA-2001-6, *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*

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
alarm
(MSC.302/A) *a high-priority alert. Condition requiring immediate attention and action by the bridge team, to maintain the safe navigation of the ship*

3.5
alert
(MSC.302/A) *announcement of abnormal situations and conditions requiring attention. Alerts are divided in four priorities: emergency alarms, alarms, warnings and cautions. An alert provides information about a defined state change in connection with information about how to announce this event in a defined way to the system and the operator*

3.6
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*

3.7
brilliance
adjustment of luminance of a display for ambient light

EXAMPLE Control of backlight for LCD (liquid cristal display).

3.8
caution
(MSC.302/A) *lowest priority of an alert. Awareness of a condition which does not warrant an alarm or warning condition, but still requires attention out of the ordinary consideration of the situation or of given information*

3.9
consistent common reference point
CCRP
(MSC191/A) *location on own ship, to which all horizontal measurements such as* own ship position, heading, 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

Note 1 to entry: 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.

3.10
composite presentation
integrated presentation that is derived from the simultaneous display of information from two or more navigational systems or from other pieces of equipment

3.11
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*

3.12
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

3.13
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*

3.14
display equipment
device capable of representing information visually

3.15
doubtful integrity
state when integrity cannot be verified

3.16
electronic chart display and information system
ECDIS
system which complies with the requirements set forth in IMO Resolution MSC.232(82)

3.17
electronic chart information
one or more electronic chart databases

EXAMPLE ENC.

3.18
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*

3.19
emergency alarm
(MSC.302/A) *highest priority of an alert. Alarms which indicate immediate danger to human life or to the ship and its machinery exits and require immediate action*

3.20
estimated position
EP
position extrapolated from the last accepted position update, based on present course and speed (STW), including effects of wind, tide, current, and updated on a time interval selected by the operator

3.21
fix
position of own ship determined, without reference to any former position, by the common intersection of two or more LOPs

3.22
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*

3.23
icon
graphical symbol with a particular meaning used to convey information independent of language

Note 1 to entry: 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.

3.24
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*

Note 1 to entry: The important indication is not part of alert classification.

3.25
indication
display of regular information and conditions, not part of alert management

3.26
integrated navigation system
INS
system which complies with the requirements set forth in IMO Resolution MSC.252(83)

3.27
integrity
property of information as being within the specified accuracy in a timely, complete and unambiguous manner

3.28
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

3.29
lost target
(MSC191/A) tracked radar or reported AIS *target* for which the system is no longer receiving *valid position* data

Note 1 to entry: The target is *represented* by a “lost target” symbol.

3.30
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

3.31
multifunction display
single visual display unit that can present, either simultaneously or through a series of selectable pages, information from multiple systems or equipment

Note 1 to entry: A multifunction display may typically be part of an INS (for example, providing dedicated presentation modes conforming to both radar and ECDIS presentation requirements), and may replace their individual display units.

3.32
operational display area
(MSC191/A) *area of the display used to graphically present* electronic *chart and*/or *radar information, excluding the user dialogue area. On the chart display this is the area of the chart presentation. On the radar display this is the area encompassing the radar* video *image*

3.33
past positions
(MSC191/A) *time-spaced marks* on the past track *of* own ship, or *a tracked* radar *or reported* AIS *target*

3.34
permanent
property of information as existing for a long time (or forever) without change

3.35
persistent
property of information as existing continuously

3.36
radar
system which complies with the requirements set forth in IMO Resolution MSC.192(79)

3.37
radar echo
returned radar signal (i.e. "paint") appearing in the radar video image

3.38
radar video image
set of displayed information constructed from radar echoes processed by anti-clutter means and other tools

Note 1 to entry: For example, scan-to-scan correlation.

3.39
readily available
property of information as being directly accessible

Note 1 to entry: For example, in a top-level menu, from a screen function, or an icon, etc.