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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

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CONTENTS

FOREWORD 9
1 Scope 11
2 Normative references 11
3 Terms, definitions and abbreviated terms 12
3.1 Terms and definitions 12
3.2 Abbreviated terms 19
4 General requirements for all displays on the bridge of a ship 19
4.1 Relationship to IMO standards 19
4.2 Application of IEC 60945 21
4.2.1 Remark 21
4.2.2 General requirements 21
4.3 Arrangement of information 21
4.3.1 Consistency of layout and logical grouping 21
4.3.2 Consistent presentation of information 22
4.3.3 Separation of operational display area 22
4.4 Readability 22
4.4.1 Readability under all ambient light conditions 22
4.4.2 Legibility of alphanumeric data and text 25
4.4.3 Presentation of text and icons 25
~~4.4.4 Icons ..... 25~~
4.5 Colours and intensity 26
4.5.1 Discrimination of colours – Requirement 26
4.5.2 Methods of test and required results 27
4.6 Symbols 27
4.6.1 Operational information 27
4.6.2 Electronic chart information 28
4.7 Colour coding ~~of information~~ 29
4.7.1 Colour coding for discrimination 29
4.7.2 Colour coding of information 29
4.7.3 Colour coding in combination with other attributes 29
4.7.4 Flashing of information 30
4.8 Integrity marking 30
4.8.1 Indication of source, validity and integrity status 30
4.8.2 Colour coding of validity and integrity 30
4.8.3 Indication of presentation failure 31
4.9 Alerts and indications 31
4.9.1 Operational status 31
4.9.2 List of alerts 32
4.9.3 Alert related information from multiple sources 33
4.9.4 Speech output for alarms and warnings 33
4.10 Presentation mode 33
4.10.1 Requirement 34
4.10.2 Methods of test and required results 35
4.11 User manuals, instructions and reference guides 35
4.11.1 Requirement 35
4.11.2 Methods of test and required results 35

5 Presentation of operational information 35
5.1 Application 35
5.2 Presentation of own ship information 35
5.2.1 Graphical representation of own ship – Requirement 35
5.2.2 Methods of test and required results 36
5.3 Presentation of chart information 36
5.3.1 Alteration of chart information 36
5.3.2 Colours and symbols for charted information 36
5.4 Presentation of radar information 37
5.4.1 Radar video images 37
5.4.2 Target trails 38
5.5 Presentation of target information 38
5.5.1 Providing target information 38
5.5.2 Consistent user interface for target information 39
5.5.3 Indication of exceeding target capacity 39
~~5.5.4 Merging AIS targets from multiple source ..... ~~
5.5.4 Presentation of repeated AIS reports 41
5.5.5 Filtering sleeping AIS targets 41
5.5.6 Activation of AIS targets 43
5.5.7 Graphical presentation of targets 43
5.5.8 Target selection 44
5.5.9 Indication of target derivation 45
5.5.10 Presentation of tracked radar target information 45
5.5.11 Presentation of reported AIS target information 46
5.5.12 Continual update of target information 47
5.5.13 Own ship's AIS information 48
5.5.14 Obscuring the operational display area 48
5.6 Operational alerts 48
5.6.1 Alert status 48
5.6.2 CPA/TCPA alarms 49
5.6.3 Acquisition/activation zones warnings 49
5.6.4 Lost target warnings 50
5.7 AIS and radar target association 50
~~5.7.1 Target association ..... ~~
5.7.1 Requirement 50
5.7.2 Methods of test and required results 51
5.8 AIS presentation user selectors and their status indications 51
5.8.1 Requirement 51
5.8.2 Methods of test and required results 52
5.9 Trial manoeuvre 54
5.9.1 Requirement 54
5.9.2 Methods of test and required results 54
5.10 Measurement 54
5.10.1 Measurement from own ship 54
5.10.2 Bearing and range measurements 54
5.11 Navigation tools 55
5.11.1 General requirements 55
5.11.2 Range rings 55

5.11.3 Variable range marker (VRM) 56
5.11.4 Bearing scale 56
5.11.5 Electronic bearing line (EBL) 57
5.11.6 Parallel index lines (PI) 58
5.11.7 Offset measurement of range and bearing 59
5.11.8 User cursor 60
5.12 AIS data link message processing capacity 61
5.12.1 General 61
5.12.2 Requirements 61
5.12.3 Methods of test and required results 61
5.13 AIS data report 61
5.13.1 General 61
5.13.2 AIS data report capacity 61
5.13.3 AIS data report display 62
5.13.4 Graphical presentation of AIS AtoN dimensions 65
5.14 AIS locating device 65
5.14.1 General 65
5.14.2 AIS locating device capacity 66
5.14.3 AIS locating device display 66
5.15 AIS ASM 68
5.15.1 General 68
5.15.2 Categories 69
5.15.3 AIS ASM capacity 71
5.15.4 AIS ASM display 73
5.16 Presentation of AIS synthetic target 75
5.16.1 Requirement 75
5.16.2 Methods of test and required results 76
5.17 Presentation of association of DSC received call with a displayed AIS object 77
5.17.1 Requirement 77
5.17.2 Methods of test and required results 77
5.18 AIS ASM information extending reported AIS target information 78
5.19 Received AIS safety related messages 79
5.19.1 Requirements 79
5.19.2 Methods of test and required results 80
5.20 Sent AIS safety related messages 81
5.20.1 Requirements 81
5.20.2 Methods of test and required results 81
6 INS, radar and chart displays 82
6.1 General 82
6.1.1 Application 82
6.1.2 Multifunction displays 82
6.1.3 Simultaneous display of radar and chart data 82
6.1.4 Range scales 83
6.1.5 Operational display area 83
6.1.6 Motion display modes 83
6.1.7 Orientation modes 84
6.1.8 Off-centring 84
6.1.9 Stabilisation modes 85

6.2 Radar displays 85
6.2.1 Application 85
6.2.2 Radar video image 86
6.2.3 Brightness of radar information 86
6.2.4 Display of chart information on radar 86
6.2.5 Priority of radar information 87
6.2.6 Display of map graphics 88
6.3 Chart displays 88
6.3.1 Application 88
6.3.2 Display of chart information 88
6.3.3 IMO ECDIS display categories 89
6.3.4 Adding or removing information from the display 90
6.3.5 Safety contour 90
6.3.6 Safety depth 90
6.3.7 Chart scale 90
6.3.8 Display of radar and target information 91
6.3.9 Display of additional information 91
6.4 Composite task-oriented presentations 92
6.4.1 User-configured presentations 92
6.4.2 Information associated with the task-at-hand 92
6.5 Single and simple operator actions 92
6.5.1 Applicability 92
6.5.2 Requirement 93
6.5.3 Methods of test and required results 93
6.6 User and default settings 93
6.6.1 General 93
6.6.2 User-settings 93
6.6.3 Default settings 94
7 Physical requirements 94
7.1 General 94
7.2 Display adjustment 94
7.2.1 Contrast and brightness 94
7.2.2 Magnetic interference 95
7.2.3 Temporal stability 95
7.2.4 Physical controls and status indicators 96
7.3 Screen size 97
7.3.1 Requirement 97
7.3.2 Method of test and required results 97
7.4 Multicoloured display equipment 97
7.4.1 Requirement 97
7.4.2 Method of test and required results 98
7.5 Screen resolution 98
7.5.1 Requirement 98
7.5.2 Method of test and required results 98
7.6 Screen viewing angle 99
7.6.1 Requirement 99
7.6.2 Methods of test and required results 99

Annex A (normative) Presentation colours and symbols 100
A.1 Overview 100
A.2 Purpose 100
A.3 ~~Scope~~ Use 100
A.4 Application 100
A.5 Navigation-related symbols 100
Annex B (normative) Guidelines for the presentation of navigation-related terminology and abbreviations 140
B.1 Overview 140
B.2 Purpose 140
B.3 ~~Scope~~ Use of these guidelines 140
B.4 Application 140
B.5 Navigation related terminology and abbreviations 140
Annex C (informative) Guidance on display and dialogue design in IMO MSC/Circ.982 147
C.1 Overview 147
C.2 General 147
C.3 Requirements in IMO MSC/Circ.982 related to the display design 147
Annex D (informative) Guidance on testing 149
D.1 Methods of test ~~derived from ISO 9241-12~~ 149
D.1.1 General 149
D.1.2 Observation 149
D.1.3 Inspection of documented evidence 149
D.1.4 Measurement 150
D.1.5 Analytical evaluation 150
D.2 Application of IEC 60945 150
D.2.1 Display equipment category 150
D.2.2 Technical performance 150
D.2.3 Pre-conditioning for environmental tests 151
D.2.4 Methods of test ~~derived from ISO 9241-12~~ applied for IEC 60945 151
D.3 Compliance with requirements 152
D.4 Simulation 153
D.5 Electronic chart data 153
Annex E (normative) Operational controls and logical groupin 154
E.1 Overview 154
E.2 Logical grouping of data and control functions 154
E.3 Navigation related terminology and icons for common function controls (hot keys and shortcuts) 155
Annex F (normative) Icons for presentation of the state of an alert 173
Annex G (normative) Testing for colours, intensity and flicker 175
G.1 Testing for colours and intensity 175
G.1.1 General 175
G.1.2 Test personnel 176
G.1.3 Method of test 176
G.2 Testing for flicker 177
G.2.1 Overview 177
G.2.2 Analytic model 177
G.2.3 Decision criteria 179

Annex H (normative) Single and simple operator actions 181
H.1 General 181
H.2 Tables for single and simple operator actions 181
Annex I (normative) Default settings 183
I.1 General 183
I.2 ECDIS default settings 183
I.3 Radar default settings 185
Annex J (normative) Implementation details of AIS ASM 186
J.1 General 186
J.2 AIS ASM 186
Annex K (informative) Overview of AIS Messages 195
K.1 General 195
K.2 Use case guidance on AIS ASM 197
Annex L (informative) Overview of the use AIS AtoN status field bits 198
Bibliography 199
List of comments 201

Table 1 – Ambient light conditions 23
Table 2 – Operational status of indications 32
Table 3 – User selectors for AIS presentation 51
Table 4 – AIS status indications 53
Table 5 – AIS data report capacity 62
Table 6 – AIS locating devices capacity 66
Table 7 – AIS ASM object capacity 71
Table 8 – Extended reported AIS target information from AIS ASM 79
Table A.1 – Own ship symbols 101
Table A.2 – Radar and AIS symbols 105
Table A.3 – Navigation symbols 125
Table A.4 – Navigation tools 130
Table A.5 – Other symbols 131
Table A.6 – Example of possible colour scheme 139
Table B.1 – List of standard terms and abbreviations 141
Table B.2 – List of standard units of measurement and abbreviations 146
Table C.1 – Paragraphs in MSC/Circ.982 associated with IEC 60945 requirements 147
Table C.2 – Other paragraphs in MSC/Circ.982 related to display design 148
Table C.3 – Other paragraphs in MSC/Circ.982 partially related to display design 148
Table D.1 – Methods of test applied for IEC 60945 151
~~Table E.1 – Top-level grouping of data and control functions for radar applications .....~~
~~Table E.2 – Top-level grouping of data and control functions for charting .....~~
~~Table E.3 – General control icons .....~~
~~Table E.4 – Task-oriented measurement control icons .....~~
~~Table E.5 – Radar specific control icons .....~~

Table E.1 – Logical grouping for radar, ECDIS and INS applications (based on MSC.1/Circ.1609) 156
Table E.2 – Examples of logical grouping for voluntary implementation 157
Table E.3 – General controls 160
Table E.4 – General navigation functions (based on MSC.1/Circ.1609) 161
Table E.5 – Radar specific controls 164
Table E.6 – Control of chart display functions (based on MSC.1/Circ.1609) 165
Table E.7 – Control of chart functionality (based on MSC.1/Circ.1609) 170
Table E.8 – Database functions (based on MSC.1/Circ.1609) 170
Table E.9 – Route plan and monitoring functions (based on MSC.1/Circ.1609) 171
Table E.10 – Groups of functions (based on MSC.1/Circ.1609) 171
~~Table F.1 – Alert management icons – basic ..... .~~
~~Table F.2 – Alert management icons – additional qualifiers ..... .~~
Table G.1 – Values of predicted energy and special coefficients 180
Table H.1 – Access to functions, as defined before June 2019 (based on MSC.1/Circ.1609) 181
Table H.2 – Access to functions (based on MSC.1/Circ.1609) 182
Table H.3 – Access to group of functions (based on MSC.1/Circ.1609) 182
Table I.1 – ECDIS settings configured in response to "Default" selection (based on MSC.1/Circ.1609) 183
Table I.2 – Radar control settings configured in response to "Default" selection (based on MSC.1/Circ.1609) 185
Table J.1 – Details of AIS ASM 186
Table K.1 – AIS Messages 195
Table K.2 – AIS ASM Messages 196
Table L.1 – AIS AtoN status field 198

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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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This commented version (CMV) of the official standard IEC 62288:2021 edition 3.0 allows the user to identify the changes made to the previous IEC 62288:2014 edition 2.0. Futhermore, comments from IEC TC 80 experts are provided to explain the reasons of the most relevant changes.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

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

This third edition cancels and replaces the second edition published in 2014. This edition constitutes a technical revision.

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

a) Clause 4 has been revised to remove requirements for indications of alerts which are now given in IEC 62923-1;
b) Clause 5 has been extensively revised to add new requirements for AIS, ASM and DSC presentation together with three new supporting annexes, Annex J, Annex K, Annex L;
c) Annex A and Annex B have been revised to incorporate changes to IMO circular SN.1/Circ.243;
d) Annex E has been revised to incorporate changes to IMO resolution MSC.191(79) and renamed as "Operational controls and logical grouping".
e) two new annexes have been added, Annex H on operator actions and Annex I on default settings in support of IMO circular MSC.1/Circ.1609.

The text of this International Standard is based on the following documents:

Draft	Report on voting
80/1013/FDIS	80/1017/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document 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 document 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) as amended by MSC.466(101) in June 2019, and where applicable MSC.302(87). 1

This document also supports the guidelines included in the related IMO Circulars MSC.1/Circ.1609 on the standardization of user interface design for navigation equipment and SN.1/Circ.243 as revised in June 2019 on the presentation of navigation related symbols, terms and abbreviations. 1

This document also specifies the presentation of AIS data reports and the AIS Application Specific Messages defined for international use in IMO SN.1/Circ.289 and intended to be received by a ship for display onboard. 2

NOTE All text in this document 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.).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 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*

IEC 62923-1, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 1: Operational and 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*~~ **3**

IMO, *Seafarers' Training, Certification and Watchkeeping Code (STCW Code)*

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~~Rev.2:2019+Corr.1, *Guidelines for the presentation of navigation related symbols, terms and abbreviations*

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

IMO SN.1/Circ.289:2010, *Guidance on the use of AIS application-specific messages*

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

IMO MSC.1/Circ.1609:2019, *Guidelines for the standardization of user interface design for navigation equipment*

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

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

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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

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 62288:2021-12(en-fr)

CONTENTS

FOREWORD 9
1 Scope 11
2 Normative references 11
3 Terms, definitions and abbreviated terms 12
3.1 Terms and definitions 12
3.2 Abbreviated terms 19
4 General requirements for all displays on the bridge of a ship 19
4.1 Relationship to IMO standards 19
4.2 Application of IEC 60945 21
4.2.1 Remark 21
4.2.2 General requirements 21
4.3 Arrangement of information 21
4.3.1 Consistency of layout and logical grouping 21
4.3.2 Consistent presentation of information 22
4.3.3 Separation of operational display area 22
4.4 Readability 22
4.4.1 Readability under all ambient light conditions 22
4.4.2 Legibility of alphanumeric data and text 25
4.4.3 Presentation of text and icons 25
4.5 Colours and intensity 26
4.5.1 Discrimination of colours – Requirement 26
4.5.2 Methods of test and required results 27
4.6 Symbols 27
4.6.1 Operational information 27
4.6.2 Electronic chart information 28
4.7 Colour coding 29
4.7.1 Colour coding for discrimination 29
4.7.2 Colour coding of information 29
4.7.3 Colour coding in combination with other attributes 29
4.7.4 Flashing of information 29
4.8 Integrity marking 30
4.8.1 Indication of source, validity and integrity status 30
4.8.2 Colour coding of validity and integrity 30
4.8.3 Indication of presentation failure 30
4.9 Alerts and indications 31
4.9.1 Operational status 31
4.9.2 List of alerts 31
4.9.3 Alert related information from multiple sources 31
4.9.4 Speech output for alarms and warnings 31
4.10 Presentation mode 31
4.10.1 Requirement 31
4.10.2 Methods of test and required results 32
4.11 User manuals, instructions and reference guides 32
4.11.1 Requirement 32
4.11.2 Methods of test and required results 32
5 Presentation of operational information 32

5.1 Application 32
5.2 Presentation of own ship information 32
5.2.1 Graphical representation of own ship – Requirement 32
5.2.2 Methods of test and required results 33
5.3 Presentation of chart information 33
5.3.1 Alteration of chart information 33
5.3.2 Colours and symbols for charted information 33
5.4 Presentation of radar information 34
5.4.1 Radar video images 34
5.4.2 Target trails 35
5.5 Presentation of target information 35
5.5.1 Providing target information 35
5.5.2 Consistent user interface for target information 36
5.5.3 Indication of exceeding target capacity 36
5.5.4 Presentation of repeated AIS reports 37
5.5.5 Filtering sleeping AIS targets 38
5.5.6 Activation of AIS targets 38
5.5.7 Graphical presentation of targets 39
5.5.8 Target selection 40
5.5.9 Indication of target derivation 41
5.5.10 Presentation of tracked radar target information 41
5.5.11 Presentation of reported AIS target information 42
5.5.12 Continual update of target information 43
5.5.13 Own ship’s AIS information 43
5.5.14 Obscuring the operational display area 44
5.6 Operational alerts 44
5.6.1 Alert status 44
5.6.2 CPA/TCPA alarms 44
5.6.3 Acquisition/activation zones warnings 45
5.6.4 Lost target warnings 45
5.7 AIS and radar target association 46
5.7.1 Requirement 46
5.7.2 Methods of test and required results 46
5.8 AIS presentation user selectors and their status indications 47
5.8.1 Requirement 47
5.8.2 Methods of test and required results 48
5.9 Trial manoeuvre 49
5.9.1 Requirement 49
5.9.2 Methods of test and required results 49
5.10 Measurement 49
5.10.1 Measurement from own ship 49
5.10.2 Bearing and range measurements 49
5.11 Navigation tools 50
5.11.1 General requirements 50
5.11.2 Range rings 50
5.11.3 Variable range marker (VRM) 50
5.11.4 Bearing scale 51
5.11.5 Electronic bearing line (EBL) 52
5.11.6 Parallel index lines (PI) 53

5.11.7 Offset measurement of range and bearing 54
5.11.8 User cursor 55
5.12 AIS data link message processing capacity 56
5.12.1 General 56
5.12.2 Requirements 56
5.12.3 Methods of test and required results 56
5.13 AIS data report 56
5.13.1 General 56
5.13.2 AIS data report capacity 56
5.13.3 AIS data report display 57
5.13.4 Graphical presentation of AIS AtoN dimensions 60
5.14 AIS locating device 60
5.14.1 General 60
5.14.2 AIS locating device capacity 61
5.14.3 AIS locating device display 61
5.15 AIS ASM 63
5.15.1 General 63
5.15.2 Categories 64
5.15.3 AIS ASM capacity 66
5.15.4 AIS ASM display 68
5.16 Presentation of AIS synthetic target 70
5.16.1 Requirement 70
5.16.2 Methods of test and required results 71
5.17 Presentation of association of DSC received call with a displayed AIS object 72
5.17.1 Requirement 72
5.17.2 Methods of test and required results 72
5.18 AIS ASM information extending reported AIS target information 73
5.19 Received AIS safety related messages 74
5.19.1 Requirements 74
5.19.2 Methods of test and required results 75
5.20 Sent AIS safety related messages 76
5.20.1 Requirements 76
5.20.2 Methods of test and required results 76
6 INS, radar and chart displays 76
6.1 General 76
6.1.1 Application 76
6.1.2 Multifunction displays 76
6.1.3 Simultaneous display of radar and chart data 77
6.1.4 Range scales 77
6.1.5 Operational display area 78
6.1.6 Motion display modes 78
6.1.7 Orientation modes 78
6.1.8 Off-centring 79
6.1.9 Stabilisation modes 79
6.2 Radar displays 80
6.2.1 Application 80
6.2.2 Radar video image 80
6.2.3 Brightness of radar information 81
6.2.4 Display of chart information on radar 81

6.2.5 Priority of radar information 82
6.2.6 Display of map graphics 82
6.3 Chart displays 83
6.3.1 Application 83
6.3.2 Display of chart information 83
6.3.3 IMO ECDIS display categories 84
6.3.4 Adding or removing information from the display 84
6.3.5 Safety contour 85
6.3.6 Safety depth 85
6.3.7 Chart scale 85
6.3.8 Display of radar and target information 86
6.3.9 Display of additional information 86
6.4 Composite task-oriented presentations 87
6.4.1 User-configured presentations 87
6.4.2 Information associated with the task-at-hand 87
6.5 Single and simple operator actions 87
6.5.1 Applicability 87
6.5.2 Requirement 88
6.5.3 Methods of test and required results 88
6.6 User and default settings 88
6.6.1 General 88
6.6.2 User-settings 88
6.6.3 Default settings 89
7 Physical requirements 89
7.1 General 89
7.2 Display adjustment 89
7.2.1 Contrast and brightness 89
7.2.2 Magnetic interference 90
7.2.3 Temporal stability 90
7.2.4 Physical controls and status indicators 91
7.3 Screen size 91
7.3.1 Requirement 91
7.3.2 Method of test and required results 92
7.4 Multicoloured display equipment 92
7.4.1 Requirement 92
7.4.2 Method of test and required results 92
7.5 Screen resolution 93
7.5.1 Requirement 93
7.5.2 Method of test and required results 93
7.6 Screen viewing angle 93
7.6.1 Requirement 93
7.6.2 Methods of test and required results 93
Annex A (normative) Presentation colours and symbols 94
A.1 Overview 94
A.2 Purpose 94
A.3 Use 94
A.4 Application 94
A.5 Navigation-related symbols 94

Annex B (normative) Guidelines for the presentation of navigation-related terminology and abbreviations 130
B.1 Overview 130
B.2 Purpose 130
B.3 Use of these guidelines 130
B.4 Application 130
B.5 Navigation related terminology and abbreviations 130
Annex C (informative) Guidance on display and dialogue design in IMO MSC/Circ.982 137
C.1 Overview 137
C.2 General 137
C.3 Requirements in IMO MSC/Circ.982 related to the display design 137
Annex D (informative) Guidance on testing 139
D.1 Methods of test 139
D.1.1 General 139
D.1.2 Observation 139
D.1.3 Inspection of documented evidence 139
D.1.4 Measurement 140
D.1.5 Analytical evaluation 140
D.2 Application of IEC 60945 140
D.2.1 Display equipment category 140
D.2.2 Technical performance 140
D.2.3 Pre-conditioning for environmental tests 141
D.2.4 Methods of test applied for IEC 60945 141
D.3 Compliance with requirements 142
D.4 Simulation 143
D.5 Electronic chart data 143
Annex E (normative) Operational controls and logical grouping 144
E.1 Overview 144
E.2 Logical grouping of data and control functions 144
E.3 Navigation related terminology and icons for common function controls (hot keys and shortcuts) 146
Annex F (normative) Icons for presentation of the state of an alert 160
Annex G (normative) Testing for colours, intensity and flicker 161
G.1 Testing for colours and intensity 161
G.1.1 General 161
G.1.2 Test personnel 162
G.1.3 Method of test 162
G.2 Testing for flicker 163
G.2.1 Overview 163
G.2.2 Analytic model 163
G.2.3 Decision criteria 165
Annex H (normative) Single and simple operator actions 167
H.1 General 167
H.2 Tables for single and simple operator actions 167
Annex I (normative) Default settings 169
I.1 General 169
I.2 ECDIS default settings 169
I.3 Radar default settings 171

Annex J (normative) Implementation details of AIS ASM 172
J.1 General 172
J.2 AIS ASM 172
Annex K (informative) Overview of AIS Messages 181
K.1 General 181
K.2 Use case guidance on AIS ASM 183
Annex L (informative) Overview of the use AIS AtoN status field bits 184
Bibliography 185

Table 1 – Ambient light conditions 23
Table 2 – Operational status of indications 31
Table 3 – User selectors for AIS presentation 47
Table 4 – AIS status indications 48
Table 5 – AIS data report capacity 57
Table 6 – AIS locating devices capacity 61
Table 7 – AIS ASM object capacity 66
Table 8 – Extended reported AIS target information from AIS ASM 73
Table A.1 – Own ship symbols 95
Table A.2 – Radar and AIS symbols 99
Table A.3 – Navigation symbols 115
Table A.4 – Navigation tools 120
Table A.5 – Other symbols 121
Table A.6 – Example of possible colour scheme 129
Table B.1 – List of standard terms and abbreviations 131
Table B.2 – List of standard units of measurement and abbreviations 136
Table C.1 – Paragraphs in MSC/Circ.982 associated with IEC 60945 requirements 137
Table C.2 – Other paragraphs in MSC/Circ.982 related to display design 138
Table C.3 – Other paragraphs in MSC/Circ.982 partially related to display design 138
Table D.1 – Methods of test applied for IEC 60945 141
Table E.1 – Logical grouping for radar, ECDIS and INS applications (based on MSC.1/Circ.1609) 145
Table E.2 – Examples of logical grouping for voluntary implementation 146
Table E.3 – General controls 147
Table E.4 – General navigation functions (based on MSC.1/Circ.1609) 148
Table E.5 – Radar specific controls 151
Table E.6 – Control of chart display functions (based on MSC.1/Circ.1609) 152
Table E.7 – Control of chart functionality (based on MSC.1/Circ.1609) 157
Table E.8 – Database functions (based on MSC.1/Circ.1609) 157
Table E.9 – Route plan and monitoring functions (based on MSC.1/Circ.1609) 158
Table E.10 – Groups of functions (based on MSC.1/Circ.1609) 158
Table G.1 – Values of predicted energy and special coefficients 166
Table H.1 – Access to functions, as defined before June 2019 (based on MSC.1/Circ.1609) 167
Table H.2 – Access to functions (based on MSC.1/Circ.1609) 168

Table H.3 – Access to group of functions (based on MSC.1/Circ.1609) 168
Table I.1 – ECDIS settings configured in response to "Default" selection (based on MSC.1/Circ.1609) 169
Table I.2 – Radar control settings configured in response to "Default" selection (based on MSC.1/Circ.1609) 171
Table J.1 – Details of AIS ASM 172
Table K.1 – AIS Messages 181
Table K.2 – AIS ASM Messages 182
Table L.1 – AIS AtoN status field 184

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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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

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

This third edition cancels and replaces the second edition published in 2014. This edition constitutes a technical revision.

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

a) Clause 4 has been revised to remove requirements for indications of alerts which are now given in IEC 62923-1;
b) Clause 5 has been extensively revised to add new requirements for AIS, ASM and DSC presentation together with three new supporting annexes, Annex J, Annex K, Annex L;
c) Annex A and Annex B have been revised to incorporate changes to IMO circular SN.1/Circ.243;

d) Annex E has been revised to incorporate changes to IMO resolution MSC.191(79) and renamed as "Operational controls and logical grouping".

e) two new annexes have been added, Annex H on operator actions and Annex I on default settings in support of IMO circular MSC.1/Circ.1609.

The text of this International Standard is based on the following documents:

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

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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 document 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) as amended by MSC.466(101) in June 2019, and where applicable MSC.302(87).

This document also supports the guidelines included in the related IMO Circulars MSC.1/Circ.1609 on the standardization of user interface design for navigation equipment and SN.1/Circ.243 as revised in June 2019 on the presentation of navigation related symbols, terms and abbreviations.

This document also specifies the presentation of AIS data reports and the AIS Application Specific Messages defined for international use in IMO SN.1/Circ.289 and intended to be received by a ship for display onboard.

NOTE All text in this document 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.).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 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 62388, *Maritime navigation and radiocommunication equipment and systems – Shipborne radar – Performance requirements, methods of testing and required test results*

IEC 62923-1, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 1: Operational and performance requirements, methods of testing and required test results*

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

IMO, *Seafarers' Training, Certification and Watchkeeping Code (STCW Code)*

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.2:2019+Corr.1, *Guidelines for the presentation of navigation related symbols, terms and abbreviations*

IMO SN.1/Circ.289:2010, *Guidance on the use of AIS application-specific messages*

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

IMO MSC.1/Circ.1609:2019, *Guidelines for the standardization of user interface design for navigation equipment*

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

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

SOMMAIRE

AVANT-PROPOS 195
1 Domaine d’application 197
2 Références normatives 197
3 Termes, définitions et abréviations 198
3.1 Termes et définitions 198
3.2 Abréviations 205
4 Exigences générales applicables à tous les affichages sur la passerelle d'un navire 205
4.1 Relations avec les normes de l'OMI 205
4.2 Application de l'IEC 60945 207
4.2.1 Remarque 207
4.2.2 Exigences générales 207
4.3 Disposition des informations 208
4.3.1 Cohérence de la présentation et regroupement logique 208
4.3.2 Présentation cohérente des informations 209
4.3.3 Séparation de la zone d'affichage opérationnel 209
4.4 Lisibilité 209
4.4.1 Lisibilité dans toutes les conditions d'éclairage ambiant 209
4.4.2 Lisibilité des données alphanumériques et du texte 212
4.4.3 Présentation du texte et des icônes 212
4.5 Couleurs et intensité 213
4.5.1 Distinction des couleurs – Exigences 213
4.5.2 Méthodes d'essai et résultats exigés 214
4.6 Symboles 214
4.6.1 Informations opérationnelles 214
4.6.2 Informations relatives aux cartes électroniques 215
4.7 Codage couleur 216
4.7.1 Codage couleur pour la discrimination 216
4.7.2 Codage couleur des informations 216
4.7.3 Codage couleur en combinaison avec d'autres attributs 217
4.7.4 Clignotement des informations 217
4.8 Indication d'intégrité 217
4.8.1 Indication du statut de la source, de la validité et de l'intégrité 217
4.8.2 Codage couleur de la validité et de l'intégrité 218
4.8.3 Indication de défaillance de la présentation 218
4.9 Alertes et indications 218
4.9.1 Statut opérationnel 218
4.9.2 Liste des alertes 219
4.9.3 Informations relatives aux alertes provenant de plusieurs sources 219
4.9.4 Données vocales en sortie pour les alarmes et les mises en garde 219
4.10 Mode de présentation 219
4.10.1 Exigence 219
4.10.2 Méthodes d'essai et résultats exigés 219
4.11 Manuels de l'utilisateur, instructions et guides de référence 219
4.11.1 Exigence 219
4.11.2 Méthodes d'essai et résultats exigés 219

5 Présentation des informations opérationnelles 220
5.1 Application 220
5.2 Présentation des informations sur le navire porteur 220
5.2.1 Représentation graphique du navire porteur – Exigences 220
5.2.2 Méthodes d'essai et résultats exigés 220
5.3 Présentation des informations cartographiques 221
5.3.1 Altération des informations cartographiques 221
5.3.2 Couleurs et symboles pour informations cartographiques 221
5.4 Présentation des informations radar 222
5.4.1 Images vidéo radar 222
5.4.2 Sillages de cibles 223
5.5 Présentation des informations relatives à la cible 223
5.5.1 Fourniture d'informations relatives à la cible 223
5.5.2 Interface utilisateur cohérente pour les informations relatives à la cible 224
5.5.3 Indication de dépassement de capacité de cibles 224
5.5.4 Présentation de comptes rendus répétés 226
5.5.5 Filtrage de cibles AIS en veille 226
5.5.6 Activation de cibles AIS 227
5.5.7 Présentation graphique des cibles 227
5.5.8 Sélection de cible 229
5.5.9 Indication de dérivation de cible 229
5.5.10 Présentation des informations relatives aux cibles poursuivies par radar 229
5.5.11 Présentation des informations relatives aux cibles AIS signalées 230
5.5.12 Mise à jour continue des informations relatives à la cible 232
5.5.13 Informations AIS du navire porteur 232
5.5.14 Obscurcissement de la zone d'affichage opérationnel 232
5.6 Alertes opérationnelles 233
5.6.1 Statut des alertes 233
5.6.2 Alarmes relatives à CPA/TCPA 233
5.6.3 Mises en garde relatives aux zones d'acquisition/activation 234
5.6.4 Mises en garde relatives aux cibles perdues 234
5.7 Association de cibles AIS et de cibles radar 235
5.7.1 Exigence 235
5.7.2 Méthodes d'essai et résultats exigés 235
5.8 Sélecteurs d'utilisateur pour la présentation AIS et leurs indications de statut 236
5.8.1 Exigence 236
5.8.2 Méthodes d'essai et résultats exigés 237
5.9 Simulation de manœuvre 238
5.9.1 Exigence 238
5.9.2 Méthodes d'essai et résultats exigés 238
5.10 Mesure 238
5.10.1 Mesure à partir du navire porteur 238
5.10.2 Mesures de relèvement et de distance 239
5.11 Outils de navigation 239
5.11.1 Exigences générales 239
5.11.2 Cercles de distance 239
5.11.3 Marqueur de distance variable (VRM) 240
5.11.4 Echelle de relèvement 241
5.11.5 Alidade électronique (EBL) 242

5.11.6 Alidades mécaniques (PI) 243
5.11.7 Mesure de décalage de la distance et du relèvement 244
5.11.8 Curseur utilisateur 245
5.12 Capacité de traitement des messages AIS de liaison de données 245
5.12.1 Généralités 245
5.12.2 Exigences 246
5.12.3 Méthodes d'essai et résultats exigés 246
5.13 compte rendu de données AIS 246
5.13.1 Généralités 246
5.13.2 Capacité des comptes rendus de données AIS 246
5.13.3 Affichage des comptes rendus de données AIS 247
5.13.4 Présentation graphique des dimensions des AIS AtoN 250
5.14 Dispositif de localisation AIS 251
5.14.1 Généralités 251
5.14.2 Capacité des dispositifs de localisation AIS 251
5.14.3 Affichage des dispositifs de localisation AIS 251
5.15 AIS ASM 254
5.15.1 Généralités 254
5.15.2 Catégories 255
5.15.3 Capacité des AIS ASM 257
5.15.4 Affichage des AIS ASM 258
5.16 Présentation des cibles AIS synthétiques 261
5.16.1 Exigence 261
5.16.2 Méthodes d'essai et résultats exigés 262
5.17 Présentation des associations d'appels DSC reçus à un objet AIS affiché 263
5.17.1 Exigence 263
5.17.2 Méthodes d'essai et résultats exigés 264
5.18 Informations relatives aux AIS ASM complétant les informations relatives aux cibles AIS signalées 264
5.19 Messages AIS reçus liés à la sécurité 265
5.19.1 Exigences 265
5.19.2 Méthodes d'essai et résultats exigés 266
5.20 Messages AIS envoyés liés à la sécurité 267
5.20.1 Exigences 267
5.20.2 Méthodes d'essai et résultats exigés 268
6 Affichages INS, radar et cartographiques 268
6.1 Généralités 268
6.1.1 Application 268
6.1.2 Affichages multifonctions 268
6.1.3 Affichage simultané de données radar et cartographiques 268
6.1.4 Echelles de distance 269
6.1.5 Zone d'affichage opérationnel 269
6.1.6 Modes d'affichage du mouvement 270
6.1.7 Modes d'orientation 270
6.1.8 Excentrement 271
6.1.9 Modes de stabilisation 271
6.2 Affichages radar 272
6.2.1 Application 272
6.2.2 Image vidéo radar 272

6.2.3 Luminosité des informations radar 272
6.2.4 Affichage d'informations cartographiques sur le radar 273
6.2.5 Priorité des informations radar 274
6.2.6 Affichage de graphiques de cartes 275
6.3 Affichages cartographiques 275
6.3.1 Application 275
6.3.2 Affichage des informations relatives aux cartes électroniques 275
6.3.3 Catégories d'affichage ECDIS de l'OMI 276
6.3.4 Ajout ou retrait d'informations de l'affichage 277
6.3.5 Isobathe de sécurité 277
6.3.6 Profondeur de sécurité 277
6.3.7 Echelle de carte 278
6.3.8 Affichage des informations radar et des informations relatives aux cibles 278
6.3.9 Affichage d'informations supplémentaires 279
6.4 Présentations composites orientées tâches 279
6.4.1 Présentations configurées par l'utilisateur 279
6.4.2 Informations associées à la tâche à accomplir 280
6.5 Actions uniques et simples de l'opérateur 280
6.5.1 Applicabilité 280
6.5.2 Exigence 280
6.5.3 Méthodes d'essai et résultats exigés 281
6.6 Paramètres de l'utilisateur et paramètres par défaut 281
6.6.1 Généralités 281
6.6.2 Paramètres de l'utilisateur 281
6.6.3 Default settings 281
7 Exigences physiques 282
7.1 Généralités 282
7.2 Réglage de l'affichage 282
7.2.1 Contraste et luminosité 282
7.2.2 Interférences magnétiques 283
7.2.3 Stabilité temporelle 283
7.2.4 Commandes physiques et indicateurs de statut 284
7.3 Taille d'écran 284
7.3.1 Exigence 284
7.3.2 Méthode d'essai et résultats exigés 285
7.4 Matériel d'affichage multicolore 285
7.4.1 Exigence 285
7.4.2 Méthode d'essai et résultats exigés 285
7.5 Résolution d'écran 285
7.5.1 Exigence 285
7.5.2 Méthode d'essai et résultats exigés 286
7.6 Angle d'observation de l'écran 286
7.6.1 Exigence 286
7.6.2 Méthodes d'essai et résultats exigés 286
Annexe A (normative) Couleurs et symboles de présentation 287
A.1 Vue d'ensemble 287
A.2 Objet 287
A.3 Utilisation 287

A.4 Application 287
A.5 Symboles utilisés pour la navigation 287
Annexe B (normative) Lignes directrices pour la présentation de la terminologie et des abréviations utilisés pour la navigation 323
B.1 Vue d'ensemble 323
B.2 Objet 323
B.3 Utilisation de ces lignes directrices 323
B.4 Application 323
B.5 Terminologie et abréviations relatives à la navigation 323
Annexe C (informative) Recommandations de la MSC/Circ. 982 de l'OMI concernant la conception de l'affichage et des dialogues 332
C.1 Vue d'ensemble 332
C.2 Généralités 332
C.3 Exigences de la MSC/Circ.982 de l'OMI relatives à la conception des affichages 332
Annexe D (informative) Recommandations pour les essais 334
D.1 Méthodes d'essai 334
D.1.1 Généralités 334
D.1.2 Observation 334
D.1.3 Examen de preuve documentée 334
D.1.4 Mesure 335
D.1.5 Evaluation analytique 335
D.2 Application de l'IEC 60945 335
D.2.1 Catégorie de matériel d'affichage 335
D.2.2 Qualités techniques de fonctionnement 335
D.2.3 Préconditionnement pour les essais d'environnement 336
D.2.4 Méthodes d'essai appliquées pour l'IEC 60945 336
D.3 Conformité aux exigences 338
D.4 Simulation 338
D.5 Informations relatives aux cartes électroniques 338
Annexe E (normative) Commandes opérationnelles et regroupement logique 339
E.1 Vue d'ensemble 339
E.2 Regroupement logique des données et des fonctions de commande 339
E.3 Terminologie relative à la navigation et icône des commandes de fonction courantes (touches rapides et raccourcis) 341
Annexe F (normative) Icônes pour la présentation de l'état d'une alerte 355
Annexe G (normative) Essais relatifs aux couleurs, à l'intensité et au scintillement 356
G.1 Essais relatifs aux couleurs et à l'intensité 356
G.1.1 Généralités 356
G.1.2 Personnel en charge des essais 357
G.1.3 Méthode d'essai 357
G.2 Essais de scintillement 358
G.2.1 Vue d'ensemble 358
G.2.2 Modèle analytique 358
G.2.3 Critères de décision 361
Annexe H (normative) Actions uniques et simples de l'opérateur 363
H.1 Généralités 363
H.2 Tableaux des actions uniques et simples de l'opérateur 363
Annexe I (normative) Default settings 366

I.1 Généralités 366
I.2 Paramètres par défaut des ECDIS 366
I.3 Paramètres par défaut des radars 368
Annexe J (normative) Détails de la mise en œuvre des messages AIS propres aux applications 369
J.1 Généralités 369
J.2 AIS ASM 369
Annexe K (informative) Vue d'ensemble des messages AIS 378
K.1 Généralités 378
K.2 Recommandations concernant les cas d'utilisation des AIS ASM 380
Annexe L (informative) Vue d'ensemble de l'utilisation des bits du champ d'état AIS AtoN 382
Bibliographie 383

Tableau 1 – Conditions d'éclairage ambiant 210
Tableau 2 – Statut opérationnel des indications 218
Tableau 3 – Sélecteurs d'utilisateur pour la présentation AIS 236
Tableau 4 – Indications de statut AIS 237
Tableau 5 – Capacité des comptes rendus de données AIS 246
Tableau 6 – Capacité des dispositifs de localisation AIS 251
Tableau 7 – Capacité des objets AIS ASM 257
Tableau 8 – Informations étendues relatives aux cibles AIS signalées provenant de l'AIS ASM 265
Tableau A.1 – Symboles représentant le navire porteur 288
Tableau A.2 – Symboles représentant les cibles radar et les cibles AIS 292
Tableau A.3 – Symboles de navigation 308
Tableau A.4 – Outils de navigation on 313
Tableau A.5 – Autres symboles 314
Tableau A.6 – Exemple de combinaisons de couleurs possibles 322
Tableau B.1 – Liste des termes et abréviations types 324
Tableau B.2 – Liste des unités de mesure normalisées et des abréviations types 331
Tableau C.1 – Paragraphes de la MSC/Circ.982 associés à des exigences de l'IEC 60945 332
Tableau C.2 – Autres paragraphes de la MSC/Circ.982 liés à la conception des affichages 333
Tableau C.3 – Autres paragraphes de la MSC/Circ.982 en partie liés à la conception des affichages 333
Tableau D.1 – Méthodes d'essai appliquées pour l'IEC 60945 336
Tableau E.1 – Regroupement logique pour les applications radar, ECDIS et INS (basé sur la MSC.1/Circ.1609) 340
Tableau E.2 – Exemples de regroupement logique pour une mise en œuvre volontaire 341
Tableau E.3 – Commandes générales 342
Tableau E.4 – Fonctions de navigation générales (basées sur la MSC.1/Circ.1609) 343
Tableau E.5 – Commandes spécifiques au radar 346
Tableau E.6 – Commande des fonctions d'affichage cartographique (basée sur la MSC.1/Circ.1609) 347

Tableau E.7 – Commande de la fonctionnalité cartographique (basée sur la MSC.1/Circ.1609) 352
Tableau E.8 – Fonctions de base (basées sur la MSC.1/Circ.1609) 352
Tableau E.9 – Plan de route et fonctions d'affichage (basée sur la MSC.1/Circ.1609) 353
Tableau E.10 – Groupes de fonctions (basés sur la MSC.1/Circ.1609) 353
Tableau G.1 – Valeurs des coefficients d'énergie prédite et des coefficients spéciaux 361
Tableau H.1 – Accès aux fonctions, tel que défini avant juin 2019 (sur la base de la MSC.1/Circ.1609) 363
Tableau H.2 – Accès aux fonctions (sur la base de la MSC.1/Circ.1609) 364
Tableau H.3 – Accès au groupe de fonctions (sur la base de la MSC.1/Circ.1609) 365
Tableau I.1 – Paramètres d'ECDIS configurés en réponse à la sélection "Default" (sur la base de la MSC.1/Circ.1609) 366
Tableau I.2 – Paramètres des radars configurés en réponse à la sélection "Default" (sur la base de la MSC.1/Circ.1609) 368
Tableau J.1 – Détails des AIS ASM 369
Tableau K.1 – Messages AIS 378
Tableau K.2 – Messages AIS ASM 379
Tableau L.1 – Champ d'état AIS AtoN 382

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

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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

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L'IEC 62288 a été établie par le comité d'études 80 de l'IEC: Matériels et systèmes de navigation et de radiocommunication maritimes. Il s'agit d'une Norme internationale.

Cette troisième édition annule et remplace la deuxième édition parue en 2014. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

a) l'Article 4 a été révisé pour supprimer les exigences relatives aux indications d'alertes qui sont maintenant spécifiées dans l'IEC 62923-1;

b) l'Article 5 a fait l'objet d'une révision approfondie afin d'ajouter de nouvelles exigences relatives à la présentation des AIS, ASM et DSC, ainsi que trois nouvelles annexes, l'Annexe J, l'Annexe K et l'Annexe L;

c) l'Annexe A et l'Annexe B ont été révisées afin d'intégrer les modifications apportées à la circulaire SN.1/Circ.243 de l'OMI;

d) l'Annexe E a été révisée afin d'intégrer les modifications apportées à la résolution MSC.191(79) de l'OMI et renommée "Commandes opérationnelles et regroupement logique";

e) deux nouvelles annexes ont été ajoutées : l'Annexe H relative aux actions de l'opérateur et l'Annexe I relative aux paramètres par défaut et venant à l'appui de la circulaire MSC.1/Circ.1609 de l'OMI.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
80/1013/FDIS	80/1017/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La version française de la norme n'a pas été soumise au vote.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Le présent document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous http://www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

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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

1 Domaine d'application

Le présent document spécifie les exigences générales, les méthodes d'essai et les résultats d'essai exigés pour la présentation des informations relatives à la navigation sur des affichages de navigation de bord, et vient à l'appui de la résolution MSC.191(79) de l'OMI amendée par la MSC.466(101) de juin 2019, et la résolution MSC.302(87) lorsqu'elle est applicable.

Le présent document vient également à l'appui des lignes directrices exposées dans la circulaire associée MSC.1/Circ.1609 de l'OMI relative à la normalisation de la conception de l'interface utilisateur pour les matériels de navigation, ainsi que dans la circulaire SN.1/Circ.243 dans sa version révisée de juin 2019 concernant la présentation des symboles, termes et abréviations liés à la navigation.

Le présent document spécifie également la présentation des comptes rendus de données AIS et les messages spécifiques à l'application de l'AIS définis pour un usage international dans la circulaire SN.1/Circ.289 de l'OMI et destinés à être reçus pour un affichage à bord d'un navire.

NOTE Tout texte du présent document dont la formulation est identique au texte contenu dans un document de l'OMI est imprimé en *italique*. Le document de référence est indiqué au début du paragraphe. La notation contient un préfixe renvoyant au document et un suffixe se rapportant au numéro de paragraphe du document (par exemple, (MSC.191/1); (SN243/1), etc.).

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60945:2002, *Matériels et systèmes de navigation et de radiocommunication maritimes – Spécifications générales – Méthodes d'essai et résultats exigibles*

IEC 61174, *Matériels et systèmes de navigation et de radiocommunication maritimes – Système de visualisation des cartes électroniques et d'information (ECDIS) – Exigences opérationnelles et de fonctionnement, méthodes d'essai et résultats d'essai exigés*

IEC 61966-4, *Systèmes et appareils multimédia – Mesure et gestion de la couleur – Partie 4: Appareils utilisant des afficheurs à cristaux liquides*

IEC 62388, *Matériels et systèmes de navigation et de radiocommunication maritimes – Radar de bord – Exigences de performance, méthodes d'essai et résultats exigés*

IEC 62923-1, *Matériels et systèmes de navigation et de radiocommunication maritimes – Gestion des alertes à la passerelle – Partie 1: Exigences opérationnelles et de fonctionnement, méthodes d'essai et résultats d'essai exigés*

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

IMO, *Seafarers' Training, Certification and Watchkeeping Code (STCW Code)*

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.2:2019+Corr.1, *Guidelines for the presentation of navigation related symbols, terms and abbreviations*

IMO SN.1/Circ.289:2010, *Guidance on the use of AIS application-specific messages*

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

IMO MSC.1/Circ.1609:2019, *Guidelines for the standardization of user interface design for navigation equipment*

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

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