

INTERNATIONAL STANDARD

**Global maritime distress and safety system (GMDSS) –
Part 3: Digital selective calling (DSC) equipment – Operational and performance
requirements, methods of testing and required testing results**





THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2017 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

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

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

About the IEC

The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications

The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee,...). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished

Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing 20 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary

65 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC Customer Service Centre - webstore.iec.ch/csc

If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: csc@iec.ch.



IEC 61097-3

Edition 2.0 2017-10

INTERNATIONAL STANDARD

**Global maritime distress and safety system (GMDSS) –
Part 3: Digital selective calling (DSC) equipment – Operational and performance
requirements, methods of testing and required testing results**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.060.20; 47.020.70

ISBN 978-2-8322-4901-7

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	10
1 Scope.....	12
2 Normative references	12
3 Terms, definitions and abbreviated terms	14
3.1 Terms and definitions.....	14
3.2 Abbreviated terms.....	17
4 Performance requirements.....	18
4.1 Object.....	18
4.2 Test requirements.....	18
4.2.1 General	18
4.2.2 Test site	18
4.2.3 Environment tests.....	18
4.2.4 Environmental test procedure	19
4.2.5 Performance checks	19
4.2.6 Normal test conditions	21
4.2.7 Extreme test conditions	21
4.2.8 Unspecified test conditions	22
4.2.9 General conditions of measurement.....	22
4.2.10 Artificial antennas	22
4.2.11 Standard test signals	23
4.2.12 Measurement uncertainty.....	24
4.2.13 Reference bandwidths for spurious measurements	25
4.2.14 Interpretation of measurement results.....	25
4.2.15 Testing method terminology.....	26
4.3 Functional requirements.....	26
4.3.1 Display of information	26
4.3.2 User interface	26
4.3.3 Categories of calls.....	26
4.3.4 General purpose equipment characteristics	27
4.3.5 Construction	27
4.3.6 Memory	29
4.3.7 Warm-up period.....	30
4.3.8 Protection of the antenna input circuit.....	30
4.3.9 Protection of the transmitter.....	30
4.3.10 Antenna static protection	31
4.3.11 Safety precautions.....	31
4.3.12 Compass safe distance.....	31
4.3.13 Audio interface	31
4.3.14 Activation of transmitter and maximum transmission time	32
4.3.15 Data interface.....	32
4.4 Operational requirements.....	36
4.4.1 Basic requirements	36
4.4.2 Additional requirements	39
4.4.3 Distress alerts	41
4.4.4 Other calls	42
4.4.5 Self-identification.....	44
4.5 Scanning efficiency.....	45

4.5.1	Requirements	45
4.5.2	Method of test and required results.....	45
4.6	Watch and scanning facilities	45
4.6.1	Requirements	45
4.6.2	Method of test and required results.....	46
4.7	Bridge alert management (BAM)	47
4.7.1	Classification of BAM alerts	47
4.7.2	Alert management	48
4.8	Alert source identification and reporting in ALF sentence	49
4.8.1	General requirements	49
4.8.2	Receipt of distress or urgency call	50
4.8.3	Receipt of calls other than distress or urgency.....	52
4.8.4	No position data received by equipment	53
4.9	Software and firmware maintenance	55
4.9.1	Requirements	55
4.9.2	Methods of testing and required test results.....	55
5	Technical characteristics	56
5.1	General.....	56
5.1.1	Frequency	56
5.1.2	Calling sensitivity.....	57
5.1.3	Nominal modulation rate	57
5.1.4	Residual modulation	57
5.2	Technical format of a call sequence	57
5.2.1	Requirements	57
5.2.2	Method of test and required results.....	58
5.3	Expansion sequence	58
5.3.1	Requirements	58
5.3.2	Methods of test and required results	58
5.4	Equipment for the automatic/semi-automatic service.....	58
5.4.1	Requirements	58
5.4.2	Methods of test and required results	59
Annex A (informative)	Digital interface sentence to parameter group number equivalence	60
Annex B (informative)	DSC remote control communication.....	61
B.1	General.....	61
B.2	Use of AUC	61
B.3	Use of AUQ.....	61
B.4	Use of AUS	61
B.5	Use of CUL	62
B.6	Use of OCC	62
B.7	Use of EPV	62
B.8	Methods of testing and required results	63
B.8.1	General	63
B.8.2	Standby information test	63
B.8.3	Creating sending distress automated procedure test.....	64
B.8.4	Receiving distress automated procedure test.....	65
B.8.5	Create sending non-distress automated procedure test	67
B.8.6	Receive non-distress automated procedure tests	68
B.8.7	Communication automated procedure test	69

B.8.8	Multiple automated procedures test	70
Annex C (normative)	Interface and automation requirements, methods of testing and required test results.....	71
C.1	General.....	71
C.2	Naming convention of DSC message types	71
C.3	Test setup.....	71
C.3.1	General	71
C.3.2	Test methods.....	73
C.4	Non automated features.....	73
C.4.1	Non automated features requirements	73
C.4.2	Non automated features tests	77
C.5	Standby	92
C.5.1	Standby requirements.....	92
C.5.2	Standby tests.....	94
C.6	Sending distress automated procedure	95
C.6.1	Sending distress automated procedure requirements.....	95
C.6.2	Sending distress automated procedure tests.....	101
C.7	Receiving distress automated procedure.....	109
C.7.1	Receiving distress automated procedure requirements	109
C.7.2	Receiving distress automated procedure tests	114
C.8	Sending non-distress automated procedure	123
C.8.1	Sending non-distress automated procedure requirements.....	123
C.8.2	Sending non-distress automated procedure tests.....	127
C.9	Receiving non-distress automated procedure.....	131
C.9.1	Receiving non-distress automated procedure requirements	131
C.9.2	Receiving non-distress automated procedure tests	135
C.10	Communications automated procedure	139
C.10.1	Communications automated procedure requirements.....	139
C.10.2	Communications automated procedure tests.....	140
C.11	Multiple automated procedures and parallel event handling	141
C.11.1	Multiple automated procedures and parallel event handling requirements	141
C.11.2	Multiple automated procedures and parallel event handling tests.....	142
C.12	Error handling in the automated procedures.....	152
C.12.1	Error handling requirements	152
C.12.2	Error handling tests	154
Annex D (normative)	DSC message composition	158
D.1	Default values.....	158
D.2	The default DROBOSE.....	160
D.3	Allowable non-distress DSC message parameters	160
Annex E (normative)	Radius-centre point conversion and rounding algorithm	161
E.1	Radius-centre point conversion	161
E.2	Rounding	162
E.3	Special cases for either form of area data entry	162
Annex F (normative)	Automated non-distress channel/frequency selection algorithm	163
F.1	General.....	163
F.2	VHF	163
F.3	HF	163
Annex G (normative)	DSC message detection and decoding.....	164

Annex H (normative) Audible annunciation and BAM alert signalling	166
H.1 Aural alert specifications	166
H.2 Alerting with critical errors	167
H.3 Default aural alert sounds	167
Annex I (normative) Shipborne watchkeeping receivers	169
I.1 General and operational requirements	169
I.1.1 General	169
I.1.2 Construction	169
I.2 Technical requirements	169
I.2.1 Frequency bands and channels	169
I.3 MF and MF/HF watchkeeping receiver	171
I.3.1 Maximum usable sensitivity	171
I.3.2 Adjacent channel selectivity	172
I.3.3 Co-channel rejection	172
I.3.4 RF intermodulation response	173
I.3.5 Spurious response rejection	173
I.3.6 Blocking immunity	174
I.3.7 Dynamic range	175
I.3.8 Conducted spurious emissions into the antenna	175
I.3.9 Protection of receiver antenna input circuits	176
I.3.10 Stop/start of scanning efficiency	176
I.4 VHF watchkeeping receiver	177
I.4.1 Maximum usable sensitivity	177
I.4.2 Adjacent channel selectivity	177
I.4.3 Co-channel rejection ratio	178
I.4.4 Intermodulation response	178
I.4.5 Spurious response rejection	179
I.4.6 Blocking immunity	180
I.4.7 Dynamic range	180
I.4.8 Conducted spurious emissions conveyed to the antenna	181
Annex J (normative) Shipborne VHF radiotelephone transmitter and receiver	182
J.1 General and operational requirements	182
J.1.1 General	182
J.1.2 Composition	182
J.1.3 Frequency bands	182
J.1.4 Multiple watch facilities	182
J.2 Switching time	183
J.2.1 Requirement	183
J.2.2 Method of measurement	183
J.2.3 Results required	183
J.3 Transmitter	184
J.3.1 General	184
J.3.2 Frequency error	184
J.3.3 Carrier power	184
J.3.4 Frequency deviation	185
J.3.5 Limitation characteristics of the modulator	186
J.3.6 Sensitivity of modulator, including microphone	186
J.3.7 Audio frequency response	186
J.3.8 Audio frequency harmonic distortion of the emission	187

J.3.9	Adjacent channel power.....	188
J.3.10	Conducted spurious emissions conveyed to the antenna	189
J.3.11	Residual modulation of the transmitter	189
J.3.12	Transient frequency behaviour of the transmitter	190
J.3.13	Antenna VSWR integrity behaviour and monitor	191
J.4	Transmitter with integrated DSC encoder	191
J.4.1	Frequency error (carrier).....	191
J.4.2	Frequency error (demodulated signal)	192
J.4.3	Carrier power.....	192
J.4.4	Modulation index	193
J.4.5	Modulation rate.....	193
J.4.6	Residual modulation	193
J.4.7	Modulator attack time	194
J.4.8	Adjacent channel power.....	194
J.5	Receiver	195
J.5.1	General	195
J.5.2	Harmonic distortion and rated audio frequency output power	195
J.5.3	Audio frequency response	196
J.5.4	Maximum usable sensitivity	197
J.5.5	Amplitude response of the receiver limiter	198
J.5.6	Co-channel rejection ratio.....	198
J.5.7	Adjacent channel selectivity.....	199
J.5.8	Spurious response rejection	199
J.5.9	Intermodulation response	201
J.5.10	Blocking immunity.....	201
J.5.11	Conducted spurious emissions conveyed to the antenna	202
J.5.12	Receiver hum and noise level	202
J.5.13	Squelch operation.....	203
J.5.14	Squelch hysteresis	203
J.5.15	Scanning characteristics of multiple watch facilities	204
J.6	Receiver with integrated DSC decoder	204
J.7	Duplex operation.....	205
J.7.1	General	205
J.7.2	Acoustic feedback	205
J.7.3	Receiver desensitization with simultaneous transmission and reception (full-duplex operation).....	205
J.7.4	Receiver spurious response rejection	206
J.8	Electromagnetic compatibility.....	206
J.8.1	Conducted spurious emission	206
J.8.2	Radiated spurious emission	206
J.8.3	Immunity to electromagnetic environment	206
J.9	Power measuring receiver specification	206
J.9.1	IF filter	206
J.9.2	Attenuation indicator.....	208
J.9.3	RMS value indicator.....	208
J.9.4	Oscillator and amplifier	208
Annex K (normative)	Shipborne MF and HF transmitters and receivers	209
K.1	General and operational requirements	209
K.1.1	General	209

K.1.2	Composition	209
K.1.3	Frequency indication	209
K.1.4	Control panel priority	209
K.1.5	Labels	210
K.1.6	Classes of emission.....	210
K.1.7	Frequency bands.....	210
K.2	Transmitter	211
K.2.1	General	211
K.2.2	Frequency error for SSB telephony.....	211
K.2.3	Output power and intermodulation products for SSB telephony.....	211
K.2.4	Unwanted frequency modulation	213
K.2.5	Sensitivity of the microphone	213
K.2.6	Sensitivity of the 600 Ω line input for SSB telephony	214
K.2.7	Automatic level control and/or limiter for SSB telephony	214
K.2.8	Audio frequency response using SSB telephony	215
K.2.9	Power of out-of-band emissions of SSB telephony.....	216
K.2.10	Power of conducted spurious emissions of SSB telephony.....	217
K.2.11	Residual hum and noise power for SSB telephony	218
K.2.12	Carrier suppression	218
K.2.13	Continuous operation on SSB telephony.....	219
K.3	Transmitter with DSC encoder and NBDP	220
K.3.1	Frequency error.....	220
K.3.2	Output power.....	220
K.3.3	Power of out-of-band emission of DSC	221
K.3.4	Power of conducted spurious emission of DSC	222
K.3.5	Residual frequency modulation of DSC.....	223
K.3.6	Modulation rate of DSC	224
K.3.7	Switching time for NBDP.....	224
K.4	Receiver	225
K.4.1	Audio frequency output levels.....	225
K.4.2	Frequency error for SSB telephony.....	225
K.4.3	Unwanted frequency modulation	226
K.4.4	Audio frequency pass band.....	226
K.4.5	Maximum usable sensitivity (MUS)	227
K.4.6	Harmonic content in output	228
K.4.7	Adjacent signal selectivity for J3E class of emission	228
K.4.8	Blocking for J3E class of emission.....	229
K.4.9	Intermodulation for J3E class of emission	230
K.4.10	Reciprocal mixing	231
K.4.11	Spurious response rejection ratio.....	231
K.4.12	Audio frequency intermodulation.....	233
K.4.13	Conducted spurious emissions into the antenna	233
K.4.14	Internally generated spurious signals.....	234
K.4.15	AGC efficiency.....	234
K.4.16	AGC time constants (attack and recovery time)	235
K.4.17	Switching time for NBDP.....	236
K.4.18	Protection of input circuits	236
K.5	Receiver with DSC decoder	237
K.5.1	Maximum usable sensitivity	237

K.5.2	Adjacent signal selectivity.....	237
K.5.3	Co-channel rejection.....	238
K.5.4	Intermodulation response	239
K.5.5	Spurious response rejection	239
K.5.6	Blocking immunity.....	241
K.5.7	Dynamic range	241
Annex L (informative) Relationship between bit error rate (BER) input and symbols error rate (SER) output		
L.1	General.....	243
L.2	Measurement of the relationship between BER at the input of a DSC decoder and the symbol error rate at the output of the decoder.....	243
L.3	Conclusion.....	244
Annex M (informative) Delays in equipment and its effect on narrow band direct printing (NBDP)		
M.1	General.....	247
M.2	Short distance.....	247
M.3	Long distance	247
Annex N (informative) Sentence to support DSC remote control.....		
N.1	General.....	249
N.2	AUC – Automated procedure control	249
N.3	AUQ – Automatic procedure query.....	251
N.4	AUS – Automated procedure status	252
N.5	CUL – Cyclic procedure list.....	256
N.6	ECI – Enhanced selective calling information	256
N.7	FSS – Frequency selection set.....	258
N.8	OCC – Occupation control	260
Bibliography.....		
Figure 1 – Interfaces of a DSC.....		
Figure 2 – DSC Interface overview.....		
Figure C.1 – Sending distress procedure		
Figure C.2 – Receiving distress procedure.....		
Figure C.3 – Sending non-distress automated procedure		
Figure C.4 – Receiving non-distress procedure.....		
Figure D.1 – Loading DSC defaults		
Figure E.1 – Circle-radius to lat-lon box		
Figure G.1 – Tests and error checks		
Figure J.1 – Modulation pre-emphasis curve (for a modulation index of 3, +1 dB –3 dB) ...		
Figure J.2 – Transient frequency behaviour test configuration.....		
Figure J.3 – Modulator attack time test configuration		
Figure J.4 – Receiver audio frequency response.....		
Figure J.5 – IF filter specification		
Figure K.1 – Limits for automatic level control.....		
Figure K.2 – Limits for audio frequency response.....		
Figure K.3 – Limits for unwanted emission (MF/HF transmitter)		
Figure L.1 – Symbol error rate (%) versus bit error rate (%) – Individual call.....		
Figure L.2 – Symbol error rate (%) versus bit error rate (%) – Distress call		

Figure L.3 – Symbol error rate (%) versus bit error rate (%) – All ship call	246
Figure L.4 – Symbol error rate (%) versus transmitted calls – Distress call – EUT 1	246
Table 1 – Reference bandwidths applicable for spurious measurement	25
Table 2 – IEC 61162-1 sentences received by the DSC equipment for position information	34
Table 3 – IEC 61162-1 sentences transmitted by the DSC equipment	34
Table 4 – IEC 61162-1 sentences received by the DSC equipment	35
Table 5 – IEC 61162-1 sentences transmitted by the DSC equipment for BNWAS	35
Table 6 – IEC 61162-1 sentences transmitted by the DSC equipment for BAM	35
Table 7 – IEC 61162-1 sentences received by the DSC equipment for BAM	35
Table 8 – Classification of GMDSS equipment alerts for alert management purposes	48
Table 9 – Alert text in ALF sentence for cause Distress	51
Table 10 – Alert text in ALF sentence for cause Urgency	52
Table 11 – Alert text in ALF sentence for received calls other than Distress and Urgency	52
Table 12 – Alert text in ALF sentence for cause No position data received by equipment	53
Table 13 – Alert text in ALF sentence for cause Antenna or Antenna tuner failure	54
Table 14 – Alert text in ALF sentence for cause Transmission power inhibit or failure	55
Table A 1 – Conversion from IEC 61162-1 to IEC 61162-3	60
Table B.1 – Property identifiers	62
Table C.1 – Geographic area tests	84
Table C.2 – DSC messages to send from the EUT	87
Table C.3 – DSC messages to send from the EUT	143
Table C.4 – DSC messages	148
Table C.5 – DSC messages	148
Table C.6 – DSC messages to send from the TE	150
Table D.1 – Default DROBOSE	160
Table D.2 – Allowable parameter combinations	160
Table H.1 – Audible characteristics	166
Table H.2 – Non configurable alert sounds	168
Table H.3 – Recommended alert sounds	168
Table J.1 – Selectivity characteristic	207
Table J.2 – Attenuation points close to carrier	207
Table J.3 – Attenuation points distant from carrier	208
Table K.1 – Distress frequencies	210
Table K.2 – Power of any out-of-band emission	217
Table K.3 – Power of any conducted spurious emission	218
Table K.4 – Power of any conducted spurious emission	223
Table K.5 – Power of any conducted spurious emission	228
Table K.6 – Adjacent signal selectivity	229
Table K.7 – Input level of the test signal	237

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**GLOBAL MARITIME DISTRESS
AND SAFETY SYSTEM (GMDSS) –****Part 3: Digital selective calling (DSC) equipment –
Operational and performance requirements,
methods of testing and required testing results**

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61097-3 has been prepared by IEC technical committee 80: Maritime navigation and radiocommunication equipment and systems.

This second edition cancels and replaces the first edition published in 1994. This edition constitutes a technical revision.

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

- a) changes in the operation of DSC which have been developed by IMO and ITU since the first edition was published;
- b) compliance with bridge alert management (BAM);

- c) optional addition of remote operation of the DSC functionality. This facility can also be used for type approval testing of the performance of the DSC equipment;
- d) incorporation of the radio frequency test methods for MF, MF/HF and VHF transceivers and watch receivers for convenience of testing.

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

FDIS	Report on voting
80/861/FDIS	80/866/RVD

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61097 series, published under the general title *Global maritime distress and safety system (GMDSS)*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://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.

A bilingual version of this publication may be issued at a later date.

GLOBAL MARITIME DISTRESS AND SAFETY SYSTEM (GMDSS) –

Part 3: Digital selective calling (DSC) equipment – Operational and performance requirements, methods of testing and required testing results

1 Scope

This part of IEC 61097 specifies the performance requirements, technical characteristics, operational requirements and methods of testing of shipborne DSC equipment for use with MF, MF/HF and VHF installations in the GMDSS, including those required by Chapter IV of the 1974 International Convention for Safety of Life at Sea (SOLAS) as amended, and is associated with IEC 60945 (Shipborne radio equipment forming part of the global maritime distress and safety system and marine navigational equipment).

This document incorporates applicable parts of the performance standards of IMO Resolutions A.803(19), A.804(19) and A.806(19) (DSC facilities for VHF, MF and MF/HF radio installations), IMO MSC/Circ.862 (describing the operation of the distress button), the provisions of the ITU Radio Regulations, the technical characteristics of DSC equipment and the operational procedures for its use contained in Recommendations ITU-R M.493, M.541, M.689, M.821 and M.1082, and takes into account the general requirements contained in IMO Resolution A.694(17).

Recommendation ITU-R M.493-14 describes classes A, B, D, E, H and M of DSC equipment. This document specifies test procedures for DSC equipment of Class A and B which are applicable to the SOLAS requirements:

Class A, which includes all of the facilities defined in Annex 1, 3 and 4 of Recommendation ITU-R M.493-14 and which will comply with the IMO GMDSS carriage requirements for MF/HF installations and/or VHF installations;

Class B, which provides minimum facilities for equipment on ships not required to use Class A equipment and which will comply with the minimum IMO GMDSS carriage requirements for MF and/or VHF installations.

This document also includes requirements and methods of testing for the RF part of the MF, MF/HF and VHF installations, specified in the annexes of this document for reference.

NOTE All text whose meaning is identical to that in IMO Resolution A.803(19), A.804(19), A.806(19), MSC.68(68), and to that in IMO Circular MSC/Circ.862, and to that in Recommendations ITU-R M.493, M.541, M.689, M.821, and M.1082 is printed in italics and the references indicated in brackets. Text referencing IMO Resolution A.803(19) includes references to A.804(19) and A.806(19) unless otherwise stated.

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, *Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results*

IEC 61162-1, *Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners*