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

IEC 62923-1:2018

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



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CONTENTS

FOREWORD.....	7
INTRODUCTION.....	9
1 Scope.....	10
2 Normative references	10
3 Terms, definitions and abbreviated terms	11
3.1 Terms and definitions.....	11
3.2 Abbreviated terms.....	16
4 Description	17
4.1 Purpose	17
4.2 EUT function types	17
4.3 Application.....	18
4.4 Implementation of BAM interfaces.....	18
4.5 Clusters	19
5 Test methods.....	20
5.1 Subject of tests	20
5.2 Test set-ups.....	20
5.3 General requirements	20
5.4 Configuration for testing.....	21
6 Module A – Presentation and handling of alerts on the bridge.....	21
6.1 General.....	21
6.1.1 Provisions.....	21
6.1.2 Number of alerts for one situation.....	21
6.1.3 Alert presentation at several locations.....	22
6.1.4 Central alert management HMI	22
6.2 Priorities classification and categories	23
6.2.1 Applicability	23
6.2.2 Requirement.....	23
6.2.3 Methods of test and required results	25
6.3 Presentation and state of alerts	25
6.3.1 Applicability	25
6.3.2 General	25
6.3.3 Emergency alarms.....	29
6.3.4 Alarms	29
6.3.5 Warnings	34
6.3.6 Cautions	39
6.3.7 Alert escalation.....	39
6.4 Presentation of alerts on the bridge	41
6.4.1 Applicability	41
6.4.2 General requirements	41
6.4.3 Aids for decision making.....	45
6.4.4 Audible annunciation	45
6.4.5 Display of icons	48
6.4.6 Functionality to help reduce the number of high-priority alerts	48
6.5 Systems failures, redundancies, back-up and fallback arrangements	49
6.5.1 Applicability	49
6.5.2 Requirement.....	49

6.5.3	Methods of test and required results	50
6.6	Documentation	51
6.6.1	Applicability	51
6.6.2	Requirement	52
6.6.3	Methods of test and required results	52
6.7	Functional alert grouping	52
6.7.1	Applicability	52
6.7.2	Functional alert group source	52
6.7.3	Functional alert group display	55
6.8	Alert aggregation	57
6.8.1	Applicability	57
6.8.2	Alert aggregation source	57
6.8.3	Aggregation display	59
6.9	Responsibility transfer	61
6.9.1	EUT performing revaluation	61
6.9.2	EUT as source of alerts	62
7	Module B – Central alert management system functionality	63
7.1	Applicability	63
7.2	Central alert management human machine interface (CAM-HMI)	63
7.2.1	General requirements	63
7.2.2	Aggregated header alerts	67
7.2.3	Alert history	68
7.3	Functional aspects of a CAM	70
7.3.1	Requirement	70
7.3.2	Methods of test and required results	70
7.4	Back-up and redundancies	71
7.4.1	Requirement	71
7.4.2	Methods of test and required results	71
7.5	System failures and fallback arrangements	71
7.5.1	Requirement	71
7.5.2	Methods of test and required results	72
8	Module C – Interfacing	73
8.1	Interfacing requirements for alert-related communication	73
8.1.1	Communication protocol	73
8.1.2	Alert priority, state and text	74
8.1.3	Time of last change	75
8.1.4	Acknowledgement and silence	75
8.1.5	Aggregation	76
8.1.6	Reconnection	77
8.2	Connection to the ship's power supply	77
8.2.1	Applicability	77
8.2.2	Requirement	77
8.2.3	Methods of test and required results	77
8.3	Function not in operational use	77
8.3.1	Applicability	77
8.3.2	Requirement	78
8.3.3	Methods of test and required results	78
9	Module D – System and equipment documentation for CAM system	78
9.1	Applicability	78

9.2	Manuals	78
9.2.1	Requirement	78
9.2.2	Methods of test and required results	78
9.3	Information regarding system configuration for surveyor	78
9.3.1	Requirement	78
9.3.2	Methods of tests and required results	79
9.4	Failure analysis	79
9.4.1	Requirement	79
9.4.2	Methods of test and required results	79
9.5	Guidance to equipment manufacturers for the provision of on-board familiarization material	79
9.5.1	Requirement	79
9.5.2	Methods of test and required results	79
Annex A (informative)	Test set-ups	80
A.1	Applicability	80
A.2	Purpose	80
A.3	Generic representation	80
A.4	Test set-up 1	82
A.5	Test set-up 2	82
A.6	Test set-up 3	83
A.7	Test set-up 4	84
Annex B (informative)	Guidance to equipment manufacturers for the provision of on-board familiarization material (Appendix 2 of IMO Resolution MSC.302(87))	86
B.1	Applicability	86
B.2	General	86
B.3	On-board familiarization	86
B.4	Familiarization training framework	87
B.4.1	General description	87
B.4.2	Detailed operation	87
Annex C (normative)	Logical interfaces for alert communication	88
C.1	Applicability	88
C.2	Logical interfaces	88
C.3	Alert sentences for exchanging alert information	89
C.4	Alert communication in case of successful revaluation and priority reduction	91
C.5	Alert communication in case of unsuccessful revaluation	92
C.6	Additional requirements for use of BAM sentences on IEC 61162-450	93
C.6.1	Use of ALF	93
C.6.2	Use of ALC	93
C.6.3	Use of ACN	94
C.6.4	Use of ARC	94
C.6.5	Use of AGL	94
C.7	Alert communication in case of inconsistent content of ALF messages	94
Annex D (informative)	Properties of aggregation and functional grouping	95
Annex E (informative)	Guidance on alert management	96
E.1	Applicability	96
E.2	Alert management strategic changes	96
E.3	Alert management tactics	96
E.4	Alert management means and methods	97
E.4.1	Overview	97

E.4.2	Functional alerts	98
E.4.3	Tools	100
E.4.4	Clusters	102
E.4.5	Technical and structural approach	104
Annex F (normative)	Icons for alert management	105
Annex G (normative)	Alert state diagrams	108
Annex H (normative)	Legacy alert handling	111
H.1	Applicability	111
H.2	Introduction to legacy alert sources	111
H.3	Conversion of legacy alerts	112
H.3.1	Requirement	112
H.3.2	Methods of test and required results	112
Annex I (normative)	Alert group list (AGL) message for functional grouping	114
I.1	Applicability	114
I.2	General	114
I.3	AGL – Alert group list	114
Annex J (normative)	TAG block for cluster identification	115
J.1	Applicability	115
J.2	General	115
J.3	Destination cluster identification "x"	115
J.4	Source cluster identification "z"	115
Annex K (informative)	Additional talker identifiers for alert sources	116
Bibliography	117
Figure 1	Interfacing legacy alert sources with BAM compliant equipment	19
Figure 2	Example of cluster-dependent alert management limitations	20
Figure 3	Multiple alerts with audible annunciation existing simultaneously	46
Figure 4	Occurrence of alerts during a temporary silence period	46
Figure 5	Escalation of a warning as warning during a temporary silence period	47
Figure 6	Occurrence of multiple warnings	47
Figure A.1	BAM concept	81
Figure A.2	Test set-up 1: no revaluation of input data	82
Figure A.3	Test set-up 2: with revaluation of input data	83
Figure A.4	Test set-up 3: BAM compliant CAM system	84
Figure A.5	Test set-up 4: BAM/CAM system compliant INS	85
Figure C.1	Logical interfaces	88
Figure C.2	Alert communication showing priority reduction, alert condition rectified	92
Figure C.3	Alert communication in case of no priority reduction, with user acknowledgement	93
Figure E.1	Alert management decision flow	97
Figure E.2	Clusters and their functional relations	103
Figure G.1	State diagram of an alert of priority emergency alarm	108
Figure G.2	State diagram of an alert of priority alarm	109
Figure G.3	State diagram of an alert of priority warning	110
Figure G.4	State diagram of an alert of priority caution	110

IEC 62923-1:2018

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[sources with BAM compliant](https://standards.iteh.ai/catalog/standards/sist/4c44246b-58ff-42ce-8aad-)

Figure H.1 – Division of functional blocks of alert management when BAM compliant alert source is interfaced to CAM	111
Figure H.2 – Division of functional blocks of alert management when legacy alert source is interfaced to CAM	111
Table 1 – Alert states and related conditions	26
Table 2 – Alert state and presentation for emergency alarms	26
Table 3 – Alert state and presentation for alarms	27
Table 4 – Alert state and presentation for warnings	28
Table 5 – Alert state and presentation for cautions	28
Table C.1 – IEC 61162-1 sentences received by BAM compliant equipment	90
Table C.2 – IEC 61162-1 sentences transmitted by BAM compliant equipment	91
Table D.1 – Properties of aggregation and functional grouping	95
Table F.1 – Alert management icons – basic.....	105
Table F.2 – Alert management icons – additional qualifiers.....	107
Table F.3 – Alert management icons – selected display status.....	107
Table K.1 – Talker identifiers for automation equipment.....	116

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**MARITIME NAVIGATION AND RADIOCOMMUNICATION
EQUIPMENT AND SYSTEMS – BRIDGE ALERT MANAGEMENT –****Part 1: Operational and performance requirements,
methods of testing and required test results**

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FDIS	Report on voting
80/892/FDIS	80/897/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 62923 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Bridge alert management*, can be found on the IEC website.

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INTRODUCTION

IEC 62923-1 has been written in pursuit of IMO resolution MSC.302(87), to further detail the technical requirements of bridge alert management and to enable testing of any equipment against the requirements of bridge alert management.

Bridge alert management (BAM) is the IMO defined overall concept for the management, handling and harmonized presentation of alerts on the bridge.

This document has been written in such a way that this form of alert management can be applied ship wide, next to, and in cooperation with, cluster(s) on the bridge.

Individual equipment that applies the BAM principles uses

- harmonized states for its alerts,
- harmonized presentation for presentation of its alerts, and
- harmonized alert communications for
 - communication with other equipment (VDR and equipment with more knowledge, as applicable), and
 - communication with a central alert management (CAM) system, if provided on board.

A CAM system, including its human machine interface(s) (HMI),

- uses harmonized states for its alerts,
- uses harmonized presentation for presentation of all alerts generated on the bridge,
- uses harmonized alert communications for communication with other equipment (VDR, alert source equipment),
- provides the function to silence all audible alerts on the bridge, and
- provides the function to individually acknowledge all alerts generated on the bridge for which additional decision support information is not required;

A CAM system may be standalone or combined with other equipment, for example in the case of an integrated navigation system (INS).

All equipment that applies the BAM principles may provide intelligence to deal with the processing of non-BAM "legacy" alarm communications for harmonized presentation at its HMI.

This document provides the harmonization requirements.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – BRIDGE ALERT MANAGEMENT –

Part 1: Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 62923 specifies the operational and performance requirements, methods of testing, and required test results for the bridge alert management (BAM) in support of IMO resolution MSC.302(87). It is applicable to all alerts presented on and transferred to the bridge.

NOTE All text of this document whose wording is identical to that of IMO resolution MSC.302(87) is printed in italics, and the resolution and associated performance standard paragraph numbers are indicated in brackets.

(MSC.302/2) *To enhance the safety of operation, the Performance standards given in resolution MSC.302(87) provide requirements for the harmonized presentation and treatment of alerts on the bridge and specify a central alert management (CAM) system.*

Annex E provides guidance on design principles that, when applied, will achieve the desired enhancement of safety.

(MSC.302/3) *Module A (Clause 6) of this document describes the general concept of the BAM and the presentation of alerts on the bridge equipment. Modules B (Clause 7) and D (Clause 9) contain requirements for the CAM and the CAM-HMI. Module C (Clause 8) describes the interface requirements for BAM.*

BAM is a concept that imposes requirements on equipment that handles and presents alerts on the bridge, including equipment that provides central alert management (CAM) system functionalities.

- Equipment is BAM compliant if it meets Module A – Presentation and handling of alerts on the bridge and Module C – Interfacing of this document.
- Equipment is CAM system compliant if it is BAM compliant equipment and, in addition, meets Module B – Central alert management system functionality and Module D – System and equipment documentation for CAM system of this document.

To support retrofitting a ship with BAM compliant equipment handling alert related communication with remaining non-BAM compliant equipment (referred to as "legacy alert sources"), this document includes guidance on how to interface BAM compliant equipment with remaining devices that are not BAM compliant (see 4.4 and Annex H).

IEC 62923-2 provides standardized alert and cluster identifiers and other additional features.

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

IEC 61162-450, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Multiple talkers and multiple listeners – Ethernet interconnection*

IEC 61924-2, *Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems – Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results*

IEC 62288, *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*

IEC 62923-2:2018, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 2: Alert and cluster identifiers and other additional features*

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

3 Terms, definitions and abbreviated terms

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1 Terms and definitions

3.1.1

active alert

alert that is not in state "normal"

3.1.2

aggregated header alert

(MSC.302/A) *alert indicating the existence of multiple individual alerts of the same kind, transmitted by the aggregation source with alert state and alert ID determined by the associated aggregation-member alerts, with alert instance 0 and with, in the alert title and/or alert description text, an aggregation header representing the aggregation*

3.1.3

aggregation

(MSC.302/A) *single combination of an aggregated header alert and associated individual aggregation-member alerts that all have the same alert identifier and the same aggregation source, to provide one alert (one aggregated header alert represents plenty of individual aggregation-member alerts)*

3.1.4

aggregation header

title of an aggregation, under which the associated aggregation-member alerts are sorted, indicating the generic part of the aggregation-member alerts, and defined by the aggregation source

Note 1 to entry: The header may contain the current number of aggregation-member alerts in that aggregation (see 8.1.5).

3.1.5

aggregation source

BAM compliant equipment that defines an aggregation of (some of) its alerts

3.1.6

aggregation-member alert

individual alert that is defined by its source as part of an aggregation

3.1.7

alarm

high-priority alert

(MSC.302/A) *condition requiring immediate attention and action by the bridge team, to maintain the safe navigation and safe operation of the ship*

3.1.8

alert

(MSC.302/A) *announcement of abnormal situations and conditions requiring attention*

Note 1 to entry: *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.*

3.1.9

alert announcements

(MSC.302/A) *visual and acoustical presentation of alerts*

3.1.10

alert history list

(MSC.302/A) *accessible list of past alerts*

3.1.11

alert management

(MSC.302/A) *concept for the harmonized regulation of the monitoring, handling, distribution and presentation of alerts on the bridge*

3.1.12

alert source

equipment generating and managing alerts

3.1.13

audible indication

sound from the EUT that is not associated with raising an alert of priority alarm or warning in the list of active alerts of the EUT

EXAMPLE 1 A sound indicating a change of control position.

EXAMPLE 2 Table 7.1.1 of IMO Resolution A.1021(26):2009, "Code on Alerts and Indicators".

3.1.14

bridge alert management

BAM

(MSC.302/A) *overall concept for management, handling and harmonized presentation of alerts on the bridge*

3.1.15

BAM compliant equipment

equipment compliant with Modules A and C of MSC.302(87)

3.1.16**central alert management****CAM**

(MSC.302/A) *functionality for the management of the presentation of alerts on the CAM-HMI, the communication of alert states between CAM-HMI and navigational systems and sensors*

Note 1 to entry: *The functions may be centralized or partly centralized in subsystems and interconnected via a standardized alert-related communication.*

3.1.17**central alert management HMI****CAM-HMI**

(MSC.302/A) *human machine interface for centralized presentation and handling of alerts on the bridge*

3.1.18**central alert management system****CAM system**

combined functionality of CAM and CAM-HMI

3.1.19**category A alert**

(MSC.302/A) *alert for which graphical information at the task station directly assigned to the function generating the alert is necessary, as decision support for the evaluation of the alert related condition*

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(standards.iteh.ai)

3.1.20**category B alert**

(MSC.302/A) *alert where no additional information for decision support is necessary besides the information which can be presented at the central alert management HMI*

<https://standards.iteh.ai/catalog/standards/sist/4c44246b-58ff-42ce-8aad-8cd0f1fbeb01/iec-62923-1-2018>

3.1.21**category C alert**

(MSC.302/A) *alert that cannot be acknowledged on the bridge but for which information is required about the status and treatment of the alert*

Note 1 to entry: If the bridge alert management is applied in another cluster than the bridge (see Annex E), this definition applies mutatis mutandis.

3.1.22**caution****lowest-priority alert**

(MSC.302/A) *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*

3.1.23**cluster**

(MSC.302/A) *group of functions on a high level, e.g., navigation, automation*

Note 1 to entry: For guidance on the use of clusters, see Annex E.

3.1.24**converted alert**

alert resulting from translation of a legacy alert into BAM compliant alert