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REDLINE VERSION

Marin navigerings- och kommunikationsutrustning – Integrerade navigationssystem – Del 2: Modulär uppbyggnad av INS – Tekniska och operationella fordringar, provningsmetoder och erforderliga provningsresultat

*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*

En så kallad ”Redline version” (RLV) innehåller både den fastställda IEC-standarden och en ändringsmarkerad standard. Alla tillägg och borttagningar sedan den tidigare utgåvan är markerade med färg. Med en RLV sparar du mycket tid när du ska identifiera och bedöma aktuella ändringar i standarden. SEK Svensk Elstandard kan bara ge ut en RLV i de fall den finns tillgänglig från IEC.



IEC 61924-2

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REDLINE VERSION

INTERNATIONAL STANDARD



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

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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CONTENTS

FOREWORD	8
1 Scope	10
2 Normative references	10
3 Terms, definitions and abbreviated terms	11
3.1 Terms and definitions.....	11
3.2 Abbreviated terms.....	20
4 MSC IMO resolutions.....	21
4.1 General.....	21
4.2 Purpose of integrated navigation systems	22
4.3 Application	23
5 Test requirements and results	25
5.1 General.....	25
5.2 Exceptions for tests previously performed.....	25
5.3 Test site.....	26
5.4 Methods of test	26
6 Module A – Requirements for integration of navigational information	26
6.1 Interfacing and data exchange	26
6.1.1 Combination, processing and evaluation of data	26
6.1.2 Availability, validity and integrity	26
6.1.3 Failure of data exchange	27
6.1.4 Interfaces in general	27
6.1.5 Interface to alert management	27
6.2 Accuracy.....	27
6.2.1 Requirement.....	27
6.2.2 Methods of test and required results	28
6.3 Validity, plausibility, latency	28
6.3.1 Validity	28
6.3.2 Plausibility.....	29
6.3.3 Latency.....	30
6.4 Consistent common reference system (CCRS).....	30
6.4.1 Consistency of data	30
6.4.2 Consistent common reference point (CCRP).....	31
6.4.3 Consistency of thresholds.....	32
6.5 Integrity monitoring	33
6.5.1 Requirement.....	33
6.5.2 Methods of test and required results	34
6.6 Marking of-data	35
6.6.1 Requirement.....	35
6.6.2 Methods of tests and required results	36
6.7 Selection of sensors and sources.....	36
6.7.1 Requirement.....	36
6.7.2 Methods of test and required results	37
7 Module B – Task related requirements for integrated navigation systems	37
7.1 Description	37
7.2 Task and functional requirements for an INS.....	37

7.2.1	General	37
7.2.2	Task "Route planning"	38
7.2.3	Task "Route monitoring"	40
7.2.4	Task "Collision avoidance".....	44
7.2.5	Task "Navigation control data".....	48
7.2.6	Task "Alert management"	50
7.2.7	Task "Status and data display"	50
7.3	Functional requirements for INS task stations	52
7.3.1	Number of task stations	52
7.3.2	Track control	53
7.3.3	Automatic control functions.....	54
7.4	Functional requirements for displays of INS	55
7.4.1	General	55
7.4.2	Default display configurations and operational modes.....	58
7.4.3	Mode and status awareness	59
7.4.4	Information display	60
7.5	Human machine interface	61
7.5.1	General	61
7.5.2	System Equipmen design	62
7.5.3	Display	62
7.5.4	Input.....	62
7.6	INS back-up requirements and redundancies	63
7.6.1	General	63
7.6.2	Hardware redundancies (back-up)	65
7.7	System failures and fallback arrangement.....	65
7.7.1	General description	65
7.7.2	Restored operation	65
7.7.3	Failure or change of sensor for automatic control function	66
7.7.4	Failure of sensor.....	66
7.7.5	Storage of system related parameters	67
7.7.6	Safe response to malfunction.....	67
7.7.7	Alert management	68
7.7.8	Fallback for navigational information failure	69
7.8	Technical requirements.....	70
7.8.1	General	70
7.8.2	Hardware and/or processors	71
7.8.3	Power supply.....	71
7.8.4	Power interruptions and shutdown	72
7.8.5	Data communication interface and protocols.....	73
7.8.6	Installation.....	73
8	Module C – Alert management.....	74
8.1	Description	74
8.1.1	Purpose of alert management	74
8.1.2	Scope of alert management	74
8.1.3	Application of alert management.....	74
8.2	General requirements	74
8.2.1	Provisions.....	74
8.2.2	Number of alerts for one situation	74

8.2.3	Alerts to be handled by the alert management	
8.2.4	Logical architecture of the alert management	
8.2.5	Alert management HMI	
8.2.6	Audible announcements	
8.2.7	Display at several locations	
8.3	Priorities and categories	
8.3.1	Priorities of alerts	
8.3.2	Criteria for classification of alerts	
8.3.3	Categories of alerts	
8.4	State of alerts	
8.4.1	General	
8.4.2	Alarms	
8.4.3	Warnings	
8.4.4	Cautions	
8.4.5	Alert escalation	
8.5	Consistent presentation of alerts within the INS	
8.5.1	Requirement	
8.5.2	Methods of test and required results	
8.6	Central alert management HMI	
8.6.1	General requirements	
8.6.2	Silencing of audible alerts	
8.6.3	Category A and B alert history list	
8.7	Acknowledgement location	
8.7.1	Requirement	
8.7.2	Methods of test and required results	
8.8	Self-monitoring of alert management	
8.8.1	Monitoring of system communication	
8.8.2	Testing of alerts	
8.8.3	Failures	
8.9	Interface requirements for alert related communication	
8.9.1	Communication concept	
8.9.2	Alert priorities, states, etc	
8.9.3	Alert source identity	
8.9.4	Acknowledge and silence	
8.9.5	Fault tolerance of alert communication	
8.10	Integration of systems in alert management	
8.10.1	Overall alert management	
8.10.2	Inclusion of other equipment	
8.10.3	Connection of other equipment	
8.1	Description	106
8.1.1	Purpose of alert management	106
8.1.2	Scope of alert management	106
8.2	General requirements	107
8.2.1	Provisions	107
8.2.2	Requirement	107
8.2.3	Methods of test and required results	107
8.3	Transfer to BNWAS	107
8.3.1	Requirement	107

8.3.2	Methods of test and required results	108
8.4	Testing of alerts	108
8.4.1	Requirement	108
8.4.2	Methods of test and required results	108
8.5	Failures	108
8.5.1	Requirement	108
8.5.2	Methods of test and required results	109
9	Module D – Documentation requirements	109
9.1	Manuals	109
9.1.1	Requirement	109
9.1.2	Methods of tests and required results	110
9.2	Information regarding the system configuration	110
9.2.1	Requirement	110
9.2.2	Methods of tests and required results	110
9.3	Failure analysis	110
9.3.1	Requirement	110
9.3.2	Methods of test and required results	110
9.4	Onboard familiarization material	111
9.4.1	Requirement	111
9.4.2	Methods of test and required results	111
Annex A (informative)	Modular structure for IMO performance standards	112
A.1	Modular structure for radar performance standards	112
A.2	Modular structure for track control performance standards	114
Annex B (informative)	Guidance to equipment manufacturers for the provision of on-board familiarization material	115
B.1	General	115
B.2	On-board familiarization training for INS	115
B.3	Familiarization training framework	116
B.3.1	General description	116
B.3.2	Detailed operation (normal conditions)	116
Annex C (normative)	Classification of alerts	118
Annex D (normative)	Default display configurations	121
Annex E (informative)	Data flow diagram/consistent common reference system (CCRS)	123
Annex F (normative)	IEC 61162 Interfaces	125
Annex G (informative)	Guidance for testing	133
G.1	Methods of test derived from ISO 9241-12	133
G.2	Observation	133
G.3	Inspection of documented evidence	133
G.4	Measurement	134
G.5	Analytical evaluation	134
Annex H (normative)	Verification of CCRP calculations	135
H.1	Scenario for verification of CCRP calculations	135
H.2	Stationary scenario	135
H.3	Dynamic scenario	136
Annex I (normative)	Sentence for integrity and plausibility	137
Annex J (normative)	INS alert related communication	139

J.1	Overview.....	139
J.2	Use of ALR for BNWAS.....	139
J.3	Use of ALR and ACK for legacy simple sensors	151
J.4	Use of HBT, ALF, ALC, ACN, AGL and ARC	151
J.5	INS standardized alert identifiers	151
J.6	Alert state transition diagram	151
Annex K	(normative informative) Sentences for advanced alert related communication.....	152
Annex L (normative) Alert communication with ALR and ACK
Annex M (normative) Icons for alert management
Bibliography.....		162
Figure E.1	– Data flow diagram/consistent common reference system (CCRS)	124
Figure F.1	– INS logical interfaces	125
Figure J.1 – Legacy sensor communication showing priority reduction
Figure J.2 – Legacy sensor communication in case priority reduction is not possible
Figure J.3 – Alerts' communication showing priority reduction
Figure J.4 – Alerts with communication in case priority reduction is not possible
Figure J.5 – Alert state diagram
Figure L.1 – State diagram
Table 1	– Applicable modules of performance standards of stand alone equipment.....	24
Table 2	– Applicable modules of other standards for INS to substitute for individual equipment.....	24
Table 3	– Marking of data	36
Table 4 – Announcement states and related conditions
Table 5 – Announcement state and presentation for Alarms
Table 6 – Announcement state and presentation for Warnings
Table 7 – Announcement state and presentation for Cautions
Table A.1	– Modular structure for radar performance standards	112
Table A.2	– Modular structure for track control performance standards	114
Table C.1	– Classification of INS alerts as specified in these performance standards	118
Table C.2	– Classification for INS for alerts specified in the individual equipment performance standards	119
Table D.1	– Task "Route monitoring"	121
Table D.2	– Task "Collision avoidance"	122
Table F.1	– IEC 61162-1 sentences transmitted by the INS	126
Table F.2	– IEC 61162-1 sentences received by the INS.....	129
Table H.1	– Required results	135
Table H.2	– Required results	136
Table H.3	– Required results for dynamic scenario	136
Table H.4	– Required resolution for test.....	136
Table J.1 – Conversion from ALR to ALF
Table J.2 – Conversion from ACN to ACK

~~Table J.3 – Unique alert identifier at alert source~~

~~Table M.1 – Alert management icons – Basic~~

~~Table M.2 – Alert management icons – Additional qualifiers~~

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS (INS) –

Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results

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International Standard IEC 61924-2 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 2012, of which it constitutes a technical revision.

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

- a) addition of a requirement for INS to provide capability for Maritime Safety Information to comply with requirements of the International Maritime Organization;
- b) modification of Clause 8 (Alert management) and associated annexes to align it with IEC 62923-1 concerning bridge management;
- c) modifications to Annex D to incorporate newer recommendations of the International Maritime Organization.

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

FDIS	Report on voting
80/977/FDIS	80/970/RVC

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 61924 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems (INS)*, 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.

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS (INS) –

Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61924 specifies the minimum requirements for the design, manufacture, integration, methods of testing and required test results for an integrated navigation system (INS) to comply with the International Maritime Organization (IMO) requirements of Resolution MSC.252(83), as amended by Resolution MSC.452(99). In addition, it takes account of IMO Resolution A.694(17) to which IEC 60945 is associated. When a requirement in this document is different from IEC 60945, the requirement of this document takes precedence.

~~NOTE 1 IEC 61924:2006 specifies the minimum requirements for the design, manufacture, integration, methods of testing and required test results for an integrated navigation system to comply with the earlier IMO requirements of Resolution MSC 86(70), Annex 3. Integrated navigation systems in accordance with IEC 61924:2006 are not suitable for installation after 1 January 2011.~~

For bridge alert management, IMO Resolution MSC.302(87) supersedes IMO Resolution MSC.252(83). Accordingly, this document incorporates references to IEC 62923-1 and IEC 62923-2 which are associated with Resolution MSC.302(87) for requirements and tests, where applicable. This document indicates which requirements and associated tests of MSC.252(83) have been superseded by MSC.302(87).

NOTE All text of this document whose wording is identical to that in IMO Resolution MSC.252(83), as amended by MSC.452(99), ~~will be~~ is printed in *italics* and the Resolution and paragraph number indicated between brackets.

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 (all parts), *Maritime navigation and radiocommunication equipment and systems – Digital interfaces*~~

IEC 61162-1:2010/2016, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 61162-2, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 2: Single talker and multiple listeners, high-speed transmission*

~~IEC 61162-3, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 3: Serial data instrument network*~~

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

IEC 61174:~~2008~~2015, *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 62065:~~2002~~2014, *Maritime navigation and radiocommunication equipment and systems – Track control systems – Operational and performance requirements, methods of testing and required test results*

IEC 62288:~~2008~~, *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 62388:~~2007~~2013, *Maritime navigation and radiocommunication equipment and systems – Shipborne radar – Performance requirements, methods of testing and required test results*

IEC 62616:~~2010~~, *Maritime navigation and radiocommunication equipment and systems – Bridge navigational watch alarm system (BNWAS)*

IEC 62923-1:2018, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 1: Operational and performance requirements, methods of testing and required test results*

ISO 11674, *Ships and marine technology – Heading control systems*

IMO A.694(17), *General requirements for shipborne radio equipment forming part of the Global maritime distress and safety system (GMDSS) and for electronic navigational aids*

IMO/ICAO, *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual) Volume 3*

IMO MSC/Circ.982, *Guidelines on ergonomic criteria for bridge equipment and layout*

IMO MSC.191(79), *Performance standards for presentation of navigation-related information on shipborne navigational displays*

IMO MSC.232(82), *Revised performance standards for Electronic Chart Display and Information Systems (ECDIS)*

IMO MSC.252(83), *Performance Standards for Integrated Navigation Systems (INS)*

~~IMO MSC.302(87), performance standards for Bridge Alert Management (BAM)~~

~~ISO 11674:2006, Ships and marine technology – Heading control systems~~

IMO MSC.452(99), *Amendments to the revised performance standards for integrated navigation systems (INS) (Resolution MSC.252(83))*

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Marin navigerings- och kommunikationsutrustning – Integrerade navigationssystem – Del 2: Modulär uppbyggnad av INS – Tekniska och operationella fordringar, provningsmetoder och erforderliga provningsresultat

*Maritime navigation and radiocommunication equipment and systems –
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Operational and performance requirements, methods of testing and required test results*

Som svensk standard gäller europastandarden EN IEC 61924-2:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 61924-2:2021.

Nationellt förord

Europastandarden EN IEC 61924-2:2021

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61924-2, Second edition, 2021 - 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**

utarbetad inom International Electrotechnical Commission, IEC.

Tidigare fastställd svensk standard SS-EN 61924-2, utgåva 1, 2013, gäller ej fr o m 2024-03-19.

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EUROPEAN STANDARD

EN IEC 61924-2

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EUROPÄISCHE NORM

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Supersedes EN 61924-2:2013 and all of its amendments
and corrigenda (if any)

English Version

**Maritime navigation and radiocommunication equipment and
systems - Integrated navigation systems (INS) - Part 2: Modular
structure for INS - Operational and performance requirements,
methods of testing and required test results
(IEC 61924-2:2021)**

Matériels et systèmes de navigation et de
radiocommunication maritimes - Systèmes de navigation
intégrés (INS) - Partie 2: Structure modulaire des systèmes
de navigation intégrés - Exigences opérationnelles et de
fonctionnement, méthodes d'essai et résultats d'essai
exigés
(IEC 61924-2:2021)

Navigations- und Funkkommunikationsgeräte und -systeme
für die Seeschifffahrt - Integrierte Navigationssysteme (INS)
- Teil 2: Modulare Struktur für INS - Betriebs- und
Leistungsanforderungen, Prüfverfahren und geforderte
Prüfergebnisse
(IEC 61924-2:2021)

This European Standard was approved by CENELEC on 2021-03-19. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

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European foreword

The text of document 80/977/FDIS, future edition 2 of IEC 61924-2, prepared by IEC/TC 80 "Maritime navigation and radiocommunication equipment and systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 61924-2:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2021-12-19
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-03-19

This document supersedes EN 61924-2:2013 and all of its amendments and corrigenda (if any).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 61924-2:2021 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60812	NOTE	Harmonized as EN IEC 60812
IEC 61108-5	NOTE	Harmonized as EN IEC 61108-5
IEC 61993-2	NOTE	Harmonized as EN IEC 61993-2
IEC 62923-2	NOTE	Harmonized as EN IEC 62923-2

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60945	2002	Maritime navigation and radiocommunication equipment and systems - General requirements - Methods of testing and required test results	EN 60945	2002
IEC 61162-1	2016	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 1: Single talker and multiple listeners	EN 61162-1	2016
IEC 61162-2	-	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 2: Single talker and multiple listeners, high-speed transmission	EN 61162-2	-
IEC 61162-450	-	Maritime navigation and radiocommunication equipment and systems - Digital interfaces - Part 450: Multiple talkers and multiple listeners - Ethernet interconnection	EN IEC 61162-450	-
IEC 61174	2015	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	EN 61174	2015
IEC 62065	2014	Maritime navigation and radiocommunication equipment and systems - Track control systems - Operational and performance requirements, methods of testing and required test results	EN 62065	2014

EN IEC 61924-2:2021 (E)

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
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	EN IEC 62288	-
IEC 62388	2013	Maritime navigation and radiocommunication equipment and systems - Shipborne radar - Performance requirements, methods of testing and required test results	EN 62388	2013
IEC 62616	-	Maritime navigation and radiocommunication equipment and systems - Bridge navigational watch alarm system (BNWAS)	EN 62616	-
IEC 62923-1	2018	Maritime navigation and radiocommunication equipment and systems - Bridge alert management - Part 1: Operational and performance requirements, methods of testing and required test results	EN IEC 62923-1	2018
ISO 11674	-	Ships and marine technology - Heading control systems	-	-
IMO A.694(17)	-	General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids	-	-
IMO/ICAO	-	International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual) Volume 3	-	-
IMO MSC/Circ. 982	-	Guidelines on ergonomic criteria for bridge equipment and layout	-	-
IMO MSC.191(79)	-	Performance standards for the presentation of navigation-related information on shipborne navigational displays	-	-
IMO MSC.232(82)	-	Adoption of the revised performance standards for electronic chart display and information systems (ECDIS)	-	-
IMO MSC.252(83)	-	Performance Standards for Integrated Navigation Systems (INS)	-	-
IMO MSC.452(99)	-	Amendments to the revised performance standards for integrated navigation systems (INS) (Resolution MSC.252(83))	-	-

7.2.2	Task "Route planning"	35
7.2.3	Task "Route monitoring"	37
7.2.4	Task "Collision avoidance"	41
7.2.5	Task "Navigation control data"	45
7.2.6	Task "Alert management"	46
7.2.7	Task "Status and data display"	47
7.3	Functional requirements for INS task stations	48
7.3.1	Number of task stations	48
7.3.2	Track control	50
7.3.3	Automatic control functions	51
7.4	Functional requirements for displays of INS	52
7.4.1	General	52
7.4.2	Default display configurations and operational modes	55
7.4.3	Mode and status awareness	56
7.4.4	Information display	56
7.5	Human machine interface	58
7.5.1	General	58
7.5.2	Equipment design	58
7.5.3	Display	59
7.5.4	Input	59
7.6	INS back-up requirements and redundancies	60
7.6.1	General	60
7.6.2	Hardware redundancies (back-up)	62
7.7	System failures and fallback arrangement	62
7.7.1	General description	62
7.7.2	Restored operation	62
7.7.3	Failure or change of sensor for automatic control function	63
7.7.4	Failure of sensor	63
7.7.5	Storage of system related parameters	64
7.7.6	Safe response to malfunction	64
7.7.7	Alert management	65
7.7.8	Fallback for navigational information failure	65
7.8	Technical requirements	67
7.8.1	General	67
7.8.2	Hardware and/or processors	67
7.8.3	Power supply	68
7.8.4	Power interruptions and shutdown	68
7.8.5	Data communication interface and protocols	69
7.8.6	Installation	69
8	Module C – Alert management	70
8.1	Description	70
8.1.1	Purpose of alert management	70
8.1.2	Scope of alert management	70
8.2	General requirements	71
8.2.1	Provisions	71
8.2.2	Requirement	71
8.2.3	Methods of test and required results	72
8.3	Transfer to BNWAS	72
8.3.1	Requirement	72

8.3.2	Methods of test and required results	72
8.4	Testing of alerts	72
8.4.1	Requirement	72
8.4.2	Methods of test and required results	73
8.5	Failures	73
8.5.1	Requirement	73
8.5.2	Methods of test and required results	73
9	Module D – Documentation requirements	73
9.1	Manuals	73
9.1.1	Requirement	73
9.1.2	Methods of tests and required results	74
9.2	Information regarding the system configuration	74
9.2.1	Requirement	74
9.2.2	Methods of tests and required results	75
9.3	Failure analysis	75
9.3.1	Requirement	75
9.3.2	Methods of test and required results	75
9.4	Onboard familiarization material	75
9.4.1	Requirement	75
9.4.2	Methods of test and required results	75
Annex A (informative)	Modular structure for IMO performance standards	76
A.1	Modular structure for radar performance standards	76
A.2	Modular structure for track control performance standards	78
Annex B (informative)	Guidance to equipment manufacturers for the provision of on-board familiarization material	79
B.1	General	79
B.2	On-board familiarization training for INS	79
B.3	Familiarization training framework	80
B.3.1	General description	80
B.3.2	Detailed operation (normal conditions)	80
Annex C (normative)	Classification of alerts	82
Annex D (normative)	Default display configurations	85
Annex E (informative)	Data flow diagram/consistent common reference system (CCRS)	87
Annex F (normative)	Interfaces	89
Annex G (informative)	Guidance for testing	94
G.1	Methods of test derived from ISO 9241-12	94
G.2	Observation	94
G.3	Inspection of documented evidence	94
G.4	Measurement	95
G.5	Analytical evaluation	95
Annex H (normative)	Verification of CCRP calculations	96
H.1	Scenario for verification of CCRP calculations	96
H.2	Stationary scenario	96
H.3	Dynamic scenario	97
Annex I (normative)	Sentence for integrity and plausibility	98
Annex J (normative)	INS alert related communication	99
J.1	Overview	99

J.2	Use of ALR for BNWAS.....	99
J.3	Use of ALR and ACK for legacy simple sensors	99
J.4	Use of HBT, ALF, ALC, ACN, AGL and ARC	99
J.5	INS standardized alert identifiers	99
J.6	Alert state transition diagram	99
Annex K (informative) Sentences for advanced alert related communication		100
Bibliography.....		101
Figure E.1 – Data flow diagram/consistent common reference system (CCRS)		88
Figure F.1 – INS logical interfaces		89
Table 1 – Applicable modules of performance standards of stand alone equipment.....		21
Table 2 – Applicable modules of other standards for INS to substitute for individual equipment.....		21
Table 3 – Marking of data		33
Table A.1 – Modular structure for radar performance standards		76
Table A.2 – Modular structure for track control performance standards		78
Table C.1 – Classification of INS alerts as specified in these performance standards		82
Table C.2 – Classification for INS for alerts specified in the individual equipment performance standards		83
Table D.1 – Task "Route monitoring"		85
Table D.2 – Task "Collision avoidance".....		86
Table F.1 – IEC 61162-1 sentences transmitted by the INS		90
Table F.2 – IEC 61162-1 sentences received by the INS.....		91
Table H.1 – Required results		96
Table H.2 – Required results		97
Table H.3 – Required results for dynamic scenario		97
Table H.4 – Required resolution for test.....		97

INTERNATIONAL ELECTROTECHNICAL COMMISSION

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS (INS) –

Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results

FOREWORD

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International Standard IEC 61924-2 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 2012, of which it constitutes a technical revision.

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

- a) addition of a requirement for INS to provide capability for Maritime Safety Information to comply with requirements of the International Maritime Organization;

- b) modification of Clause 8 (Alert management) and associated annexes to align it with IEC 62923-1 concerning bridge management;
- c) modifications to Annex D to incorporate newer recommendations of the International Maritime Organization.

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

FDIS	Report on voting
80/977/FDIS	80/970/RVC

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 61924 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Integrated navigation systems (INS)*, 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.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – INTEGRATED NAVIGATION SYSTEMS (INS) –

Part 2: Modular structure for INS – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 61924 specifies the minimum requirements for the design, manufacture, integration, methods of testing and required test results for an integrated navigation system (INS) to comply with the International Maritime Organization (IMO) requirements of Resolution MSC.252(83), as amended by Resolution MSC.452(99). In addition, it takes account of IMO Resolution A.694(17) to which IEC 60945 is associated. When a requirement in this document is different from IEC 60945, the requirement of this document takes precedence.

For bridge alert management, IMO Resolution MSC.302(87) supersedes IMO Resolution MSC.252(83). Accordingly, this document incorporates references to IEC 62923-1 and IEC 62923-2 which are associated with Resolution MSC.302(87) for requirements and tests, where applicable. This document indicates which requirements and associated tests of MSC.252(83) have been superseded by MSC.302(87).

NOTE All text of this document whose wording is identical to that in IMO Resolution MSC.252(83), as amended by MSC.452(99), is printed in *italics* and the Resolution and paragraph number indicated between brackets.

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 61162-1:2016, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 1: Single talker and multiple listeners*

IEC 61162-2, *Maritime navigation and radiocommunication equipment and systems – Digital interfaces – Part 2: Single talker and multiple listeners, high-speed transmission*

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

IEC 61174:2015, *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 62065:2014, *Maritime navigation and radiocommunication equipment and systems – Track control systems – 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 62388:2013, *Maritime navigation and radiocommunication equipment and systems – Shipborne radar – Performance requirements, methods of testing and required test results*

IEC 62616, *Maritime navigation and radiocommunication equipment and systems – Bridge navigational watch alarm system (BNWAS)*

IEC 62923-1:2018, *Maritime navigation and radiocommunication equipment and systems – Bridge alert management – Part 1: Operational and performance requirements, methods of testing and required test results*

ISO 11674, *Ships and marine technology – Heading control systems*

IMO A.694(17), *General requirements for shipborne radio equipment forming part of the Global maritime distress and safety system (GMDSS) and for electronic navigational aids*

IMO/ICAO, *International Aeronautical and Maritime Search and Rescue Manual (IAMSAR Manual) Volume 3*

IMO MSC/Circ.982, *Guidelines on ergonomic criteria for bridge equipment and layout*

IMO MSC.191(79), *Performance standards for presentation of navigation-related information on shipborne navigational displays*

IMO MSC.232(82), *Revised performance standards for Electronic Chart Display and Information Systems (ECDIS)*

IMO MSC.252(83), *Performance Standards for Integrated Navigation Systems (INS)*

IMO MSC.452(99), *Amendments to the revised performance standards for integrated navigation systems (INS) (Resolution MSC.252(83))*