

INTERNATIONAL STANDARD



**Maritime navigation and radiocommunication equipment and systems –
Automatic identification system (AIS) –
Part 2: AIS AtoN Stations – Operational and performance requirements, methods
of testing and required test results**

IEC 62320-2:2016

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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

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**MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT
AND SYSTEMS – AUTOMATIC IDENTIFICATION SYSTEM (AIS) –****Part 2: AIS AtoN Stations – Operational and performance
requirements, methods of testing and required test results**

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International Standard IEC 62320-2 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 2008, and constitutes a technical revision.

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

- additional cyber security measures;
- updated description of configuration via VDL;
- updated VDL access scheme requirements;
- new PI sentences and VDL message structures with added description for optional TAG blocks;
- added requirement for at least one standard method for configuration using Standard PI sentences;
- updated test methods and updated Annexes.

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

FDIS	Report on voting
80/817/FDIS	80/822/RVD

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

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

A list of all parts in the IEC 62320 series, published under the general title *Maritime navigation and radiocommunication equipment and systems – Automatic identification system (AIS)*, can be found on the IEC website.

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MARITIME NAVIGATION AND RADIOCOMMUNICATION EQUIPMENT AND SYSTEMS – AUTOMATIC IDENTIFICATION SYSTEM (AIS) –

Part 2: AIS AtoN Stations – Operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 62320 specifies the operational and performance requirements, methods of testing and required test results for AIS AtoN Stations compatible with the performance standards adopted by IMO Resolution MSC.74(69), Annex 3, Universal AIS. It incorporates the technical characteristics of non-shipborne AIS AtoN equipment, included in Recommendation ITU-R M.1371 and IALA Recommendation A-126. Where applicable, it also takes into account the ITU Radio Regulations. This standard takes into account other associated IEC International Standards and existing national standards, as applicable.

This document is applicable for automatic identification system (AIS) installations on aids to navigation (AtoN).

2 Normative references

The following referenced documents are indispensable for the application 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 61108 (all parts), *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS)*

~~IEC 61108-1, *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 1: Global positioning system (GPS) – Receiver equipment – Performance standards, methods of testing and required test results*~~

~~IEC 61108-2, *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 2: Global navigation satellite system (GLONASS) – Receiver equipment – Performance standards, methods of testing and required test results*~~

~~IEC 61108-4, *Maritime navigation and radiocommunication equipment and systems – Global navigation satellite systems (GNSS) – Part 4: Shipborne DGPS and DGLONASS maritime radio beacon receiver equipment – Performance requirements, methods of testing and required results*~~

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

IEC 62287-1, *Maritime navigation and radiocommunication equipment and systems – Class B shipborne equipment of the automatic identification system (AIS) – Part 1: Carrier-sense time division multiple access (CSTDMA) techniques*

IEC 62320-3:2015, *Maritime navigation and radiocommunication equipment and systems – Automatic identification systems (AIS) – Part 3: Repeater station – Minimum operational and performance requirements – Methods of test and required test results*

ITU Radio Regulations, Appendix 18, *Table of transmitting frequencies in the VHF maritime mobile band*

ITU-R Recommendation M.1371-5:2014, *Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile band*

~~ITU-T Recommendation O.153, *Basic parameters for the measurement of error performance at bit rates below the primary rate*~~

IALA Recommendation A-126, *The Use of Automatic Identification System (AIS) in Marine Aids to Navigation*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

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

3.1.1 aids to navigation

AtoN

device or system external to vessels that is designed and operated to enhance the safe and efficient navigation of vessels and/or vessel traffic

3.1.2

Message 21

AtoN report transmitted on the VHF data link by an AIS station

3.1.3

real AIS AtoN

AIS AtoN station which is physically located on the aid to navigation

Note 1 to entry: IMO MSC.1/Circ.1473 states that physical AIS AtoN is an AIS Message 21 representing an aid to navigation that physically exists.

3.1.4

synthetic AIS AtoN

Message 21 transmitted from an AIS station located remotely from the aid to navigation

Note 1 to entry: IMO MSC.1/Circ.1473 states that physical AIS AtoN is an AIS Message 21 representing an aid to navigation that physically exists.

3.1.5

virtual AIS AtoN

Message 21 transmitted from an AIS station for an aid to navigation which does not physically exist

3.2 Abbreviated terms

AES Advanced Encryption Standard

AIS automatic identification system

BIIT built-in integrity tests

BT bandwidth-time product