INTERNATIONAL STANDARD

IEC 62320-1

First edition
2007-02

Maritime navigation and radiocommunication equipment and systems – Automatic identification system (AIS) –

Part 1: AIS Base Stations – Minimum operational and performance requirements, methods of testing and required test results

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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

PRICE CODE XD

For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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FOREWORD

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International Standard IEC 62320-1 has been prepared by IEC Technical Committee 80: Maritime navigation and radiocommunication equipment and systems.

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

FDIS	Report on voting
80/460/FDIS	80/468/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 of IEC 62320 series, under the general title: *Maritime navigation and radio-communication equipment and systems – Automatic Identification System (AIS)* can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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

INTRODUCTION

Chapter V of the International Convention for the Safety of Life at Sea 1974 (SOLAS) requires mandatory carriage of Automatic Identification System (AIS) equipment on all vessels constructed on or after 01 July 2002. Carriage for other types and sizes of SOLAS Convention vessels was required to be completed not later than 31 December 2004.

SOLAS Chapter V, Regulation 19, clause 2.4.5 states that AIS shall:

1 provide automatically to appropriate equipped shore stations, other ships and aircraft information, including ship's identity, type, position, course, speed, navigational status and other safety-related information;

2 receive automatically such information from similarly fitted ships;

3 monitor and track ships; and

4 exchange data with shore-based facilities.

In addition, the IMO performance standards for AIS state that:

– The AIS should improve the safety of navigation by assisting in the efficient navigation of ships, protection of the environment, and operation of Vessel Traffic Services (VTS), by satisfying the following functional requirements:

  1 in a ship-to-ship mode for collision avoidance;

  2 as a means for littoral States to obtain information about a ship and its cargo; and

  3 as a VTS tool, i.e. ship-to-shore (traffic management).

– The AIS should be capable of providing to ships and to competent authorities, information from the ship, automatically and with the required accuracy and frequency, to facilitate accurate tracking. Transmission of the data should be with the minimum involvement of ship's personnel and with a high level of availability.

The provision of Shore Based AIS will be necessary to attain the full benefit of the SOLAS Convention requirements.

This part of IEC 62320 provides the minimum operational and performance requirements, methods of test and the required test results for AIS Base Stations. The testing is divided into three sections, the transceiver tests, the logical tests and the Presentation Interface tests. These are captured in Clauses 8, 9 and 10 respectively. The method used for testing is that the EUT should meet all the tests requirements of Clause 8 before proceeding to Clause 9. Likewise, the unit should meet all of the test requirements before proceeding to Clause 10. Clause 10 has also been prioritised so that the tests are progressive

Clauses 5 to 7 provide functional requirement information and Clause 8 provides the general test environment for the EUT.

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

Part 1: AIS Base Stations – Minimum operational and performance requirements, methods of testing and required test results

1 Scope

This part of IEC 62320 specifies the minimum operational and performance requirements, methods of testing and required test results for AIS Base Stations, compatible with the performance standards adopted by IMO Res. MSC.74 (69), Annex 3, Universal AIS. It incorporates the technical characteristics of non-shipborne, fixed station AIS equipment, included in recommendation ITU-R M.1371 and IALA Recommendation A-124. 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 standard is applicable for AIS Base Stations. It does not include specifications for the display of AIS data on shore.

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

ITU-R M.1084-4, *Interim solutions for improved efficiency in the use of the band 156-174* MHz *by stations in the maritime mobile service*

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

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

IALA Recommendation A-124 *on Automatic Identification System (AIS). Shore Station and networking aspects relating to the AIS Service*

IALA *technical clarifications to ITU Recommendation ITU-R M.1371-1*

RTCM SC104 – *RTCM Recommended Standards for Differential GNSS (Global Navigation Satellite Systems) Service*