

RESOLUTION MSC.570(109) (adopted on 6 December 2024)
PERFORMANCE STANDARDS FOR A UNIVERSAL
SHIPBORNE AUTOMATIC IDENTIFICATION SYSTEM (AIS)

ANNEX 23

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THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of the Committee,

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the functions of adopting performance standards and technical specifications, as well as amendments thereto, shall be performed by the Maritime Safety Committee on behalf of the Organization,

RECALLING FURTHER resolution MSC.74(69), annex 3, by which the Committee adopted the *Recommendation on performance standards for a universal automatic identification system (AIS)* to improve the safety of navigation,

TAKING INTO ACCOUNT resolution A.1192(33), by which the Assembly urged Member States and all relevant stakeholders to promote actions to prevent illegal operations in the maritime sector by the "dark fleet" or "shadow fleet",

RECOGNIZING the need for measures to prevent unauthorized entry or tampering of the ship's identity information in shipborne automatic identification systems (AIS),

HAVING CONSIDERED, at its 109th session, the recommendation made by the Sub-Committee on Navigation, Communications and Search and Rescue at its eleventh session,

1 ADOPTS revised *Performance standards for a universal shipborne automatic identification system (AIS)*, set out in the annex to the present resolution;

2 RECOMMENDS that Governments ensure that AIS equipment conforms to performance standards not inferior to those specified in:

- .1 the present resolution if the equipment is installed on:
 - .1 new ships for which the building contract is placed on or after 1 January 2029, or in the absence of the contract, the keel of which is laid or which are at a similar stage of construction on or after 1 January 2029; or
 - .2 ships other than those ships prescribed in sub-paragraph .1 above, all installations of the specified type, having a contractual delivery date on or after 1 January 2029, or in the absence of a contractual delivery date to the ship, actually delivered to the ship on or after 1 January 2029; or
- .2 annex 3 to resolution MSC.74(69) if the equipment is installed on ships other than those prescribed in paragraph 2.1 above.

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1 Scope

1.1 These performance standards specify the requirements for the universal AIS.

1.2 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).

1.3 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 a ship's personnel and with a high level of availability.

1.4 The installation, in addition to meeting the requirements of the Radio Regulations, applicable ITU-R Recommendations and the general requirements as set out in resolution A.694(17), should comply with the following performance standards.

2 Functionality

The system should be capable of operating in a number of modes:

- .1 an "autonomous and continuous" mode for operation in all areas. This mode should be capable of being switched to/from one of the following alternate modes by a competent authority;
- .2 an "assigned" mode for operation in an area subject to a competent authority responsible for traffic monitoring such that the data transmission interval and/or time slots may be set remotely by that authority; and
- .3 a "polling" or controlled mode where the data transfer occurs in response to interrogation from a ship or competent authority.

3 Capability

3.1 The AIS should comprise:

- .1 a communication processor, capable of operating over a range of maritime frequencies, with an appropriate channel selecting and switching method, in support of both short- and long-range applications;

- .2 a means of processing data from an electronic position-fixing system which provides a resolution of one ten-thousandth of a minute of arc and uses the WGS-84 datum;
- .3 a means to automatically input data from other sensors meeting the provisions as specified in paragraph 6.2;
- .4 a means to input and retrieve data manually;
- .5 a means of error checking the transmitted and received data; and
- .6 built-in test equipment (BITE).

3.2 The AIS should be capable of:

- .1 providing information automatically and continuously to a competent authority and other ships, without involvement of ship's personnel;
- .2 receiving and processing information from other sources, including that from a competent authority and from other ships;
- .3 responding to high-priority and safety-related calls with a minimum delay; and
- .4 providing positional and manoeuvring information at a data rate adequate to facilitate accurate tracking by a competent authority and other ships.

4 User interface

To enable a user to access, select and display the information on a separate system, the AIS should be provided with an interface conforming to an appropriate international marine interface standard.

5 Identification

For the purpose of ship and message identification, the ship's Maritime Mobile Service Identity (MMSI) should be used.

6 Information

6.1 The information provided by the AIS should include:

- .1 Static:
 - IMO number¹
 - Call sign and name
 - Length and beam
 - Type of ship
 - Location of position-fixing antenna on the ship (aft of bow and port or starboard of centreline)

¹ In accordance with *IMO ship identification number scheme* adopted by the Organization (resolution A.1117(30)). If not required to have an IMO number, an official flag State number may be used (refer to Recommendation ITU-R M.1371 for the entry of an official flag State number).

.2 Dynamic:

- Ship's position with accuracy indication and integrity status
- Time in UTC ²
- Course over ground
- Speed over ground
- Heading
- Navigational status (e.g. NUC, at anchor, etc. - manual input)
- Rate of turn (where available)
- Optional - Angle of heel (where available)³
- Optional - Pitch and roll (where available)³

.3 Voyage-related:

- Ship's draught
- Hazardous cargo (type)⁴
- Destination and ETA (at master's discretion)
- Optional - Route plan (waypoints)³

.4 Short safety-related messages

.5 Equipment Identification message⁵

6.2 Information update rates for autonomous mode

The different information types are valid for a different time period and thus need a different update rate:

- | | |
|-------------------------------|---|
| - Static information: | Every 6 minutes and on request |
| - Dynamic information: | Dependant on speed and course alteration according to table 1 |
| - Voyage-related information: | Every 6 minutes, when data has been amended and on request |
| - Safety-related message: | As required |

² Date to be established by receiving equipment.

³ Field not provided in basic message.

⁴ As required by a competent authority.

⁵ The AIS equipment should broadcast a unique manufacturer equipment identification number, which should also be physically marked on the equipment.

TABLE 1

Type of ship	Reporting interval
Ship at anchor	3 minutes
Ship 0-14 knots	12 seconds
Ship 0-14 knots and changing course	4 seconds
Ship 14-23 knots	6 seconds
Ship 14-23 knots and changing course	2 seconds
Ship > 23 knots	3 seconds
Ship > 23 knots and changing course	2 seconds

Ship Reporting Capacity – the system should be able to handle a minimum of 2,000 reports per minute to adequately provide for all operational scenarios envisioned.

6.3 Security

A security mechanism should be provided to detect disabling and to prevent unauthorized alteration of input or transmitted data. To protect against unauthorized dissemination of data, the IMO guidelines (Guidelines and Criteria for Ship Reporting Systems⁶) should be followed. A change to the IMO ship identification number in the equipment should only be possible by an authorized manufacturer's agent.

7 Permissible initialization period

The installation should be operational within 2 minutes of switching on.

8 Power supply

The AIS and associated sensors should be powered from the ship's main source of electrical energy. In addition, it should be possible to operate the AIS and associated sensors from an alternative source of electrical energy.

9 Technical characteristics

The technical characteristics of the AIS such as variable transmitter output power, operating frequencies (dedicated internationally and selected regionally), modulation and antenna system should comply with the appropriate ITU-R Recommendations.⁷

⁶ Resolution MSC.433(98).

⁷ ITU-R M.1371 series refer.

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