



WORK PROGRAMME

Revision of the Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS) (resolution A.1106(29))

Submitted by Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands (Kingdom of the), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, European Commission, ICS, IAPH, OCIMF, IFSMA, INTERTANKO and IHMA

SUMMARY

Executive summary: This document proposes a new output on the revision of the *Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS)* (resolution A.1106(29)) in order to improve the accuracy and reliability of data in the "destination", "ETA" and "draught" fields of the AIS.

Strategic direction, if applicable: 2

Output: Not applicable

Action to be taken: Paragraph 22

Related document: Resolution A.1106(29)

Introduction

1 This document, submitted in accordance with the relevant provisions of the *Organization and method of work of the Maritime Safety Committee and the Marine Environment Protection Committee and their subsidiary bodies* (MSC-MEPC.1/Circ.5/Rev.6), proposes a new output on the revision of the *Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS)* (resolution A.1106(29)).

Background

2 As per SOLAS regulation V/19.2.4.7, AIS shall be operated taking into account resolution A.1106(29). These guidelines specify which data should be entered in the AIS equipment and how this should be arranged.

3 Over the years, AIS has developed into a global awareness tool widely adopted by the maritime industry. The implementation of AIS has contributed to transparency and predictability, in particular when the maritime industry kept evolving by adopting digitalization, technology and AIS-based generation of intelligence, as global vessel movements became available in "Big Data".

4 However, there is still room for improvement in data entry, as some of the voyage-related information is subject to manual input and is entered in a free-text format in AIS equipment.

5 Therefore, it is proposed to automate and standardize the relevant fields¹ in the following manner:

- .1 destination field: arrival and departure port to be formatted according to UN/LOCODE. Adding a reference to the location inside the port makes the destination more accurate, to be selected from a pre-installed list, imposing anchorage, pilot boarding place, safe water buoy, berth, or free choice. The free choice option can also be used for non-standard locations, such as offshore platforms;
- .2 ETA field: time to be selected from a pre-installed list, imposing use of the format "YYYY-MM-DDTHH:MM:SSZ",² with intervals of 15 minutes; and
- .3 draught field: draught to be selected from a pre-installed list, imposing use of the format "xx.xx" meters.

IMO objectives

6 The proposed revision of resolution A.1106(29) would contribute to more reliable, unambiguous and harmonized data relay through the AIS equipment, and as such would improve the safety and efficiency of shipping, which is clearly within the scope of IMO's mission to promote safe, secure, environmentally sound, efficient and sustainable shipping through cooperation.

7 In conjunction with the responsibilities of the Committee, this proposal directly contributes to the implementation of strategic direction 2 (i.e. Integrate new and advancing technologies in the regulatory framework).

Need

8 From the ships' perspective, when ships get close to each other, especially in the approach of a port, it is important for the crew to understand whether one should follow a ship or overtake it. In such cases, AIS data, i.e. destination and ETA of ships in the vicinity, may assist the officer in charge of the navigational watch in situational awareness and collision avoidance. Therefore, both destination and ETA need to be accurate and reliable. The use of VHF equipment needs to be limited as much as possible in congested approach areas, which are prone to VHF channel overload.

¹ The option of a free field for manual entry, in accordance with current practice, should remain as an alternative when the required item is not available in the list.

² As per ISO 8601 definition. "Z" indicates UTC time ("Zulu time").

9 From the shore side perspective, when ships are approaching a port, it is important to ensure that their berth and pilot boarding place planning remains up to date. Nowadays, this becomes particularly important, even when the ship is still well outside the VTS area, to allow the ship to optimize its speed in a timely manner (just-in-time arrival) and thus reduce emissions and avoid anchoring and/or drifting near the pilot boarding place. Therefore, the use of accurate and reliable AIS data is increasingly important. In this respect, it is important that AIS data is unambiguous: what is the exact destination of the ship, and is the planning of the ship according to the AIS data aligned with the port and berth planning? For the same reason, accurate and reliable draught field data is important to avoid last-minute changes if the ship is impacted by a tidal window or if the ship needs to be piloted by a different pilot.

Analysis of the issue in relation to the proposed measures

10 Change of destination field:

- .1 Assessment of practicability: formatting this field to fit the UN/LOCODE format is only a one-time update. Because it is not a listing of all available UN/LOCODEs, a yearly update is not necessary. The same applies to the list of options to make the destination more specific;
- .2 Assessment of feasibility: the formatting can be done either remotely in most cases or by a service engineer on board the ship; and
- .3 Assessment of proportionality: during initial consideration of this matter, it became evident that from 2,115 total arrivals at the Port of Rotterdam, only 37% of the ships used NLRTM or NL RTM. The other 63% of the ships used more than 30 different destination identifiers. A small change of the destination field improves the data quality significantly.

11 Change of ETA field

- .1 Assessment of practicability: formatting this field to fit the YYYY-MM-DDTHH:MM:SSZ format and one for Local Time / Time Zone is only a one-time update. Because it is not a listing of ports with their local time differences to the Coordinated Universal Time (UTC), a yearly update is not necessary;
- .2 Assessment of feasibility: the formatting can be done either remotely in most cases or by a service engineer on board the ship; and
- .3 Assessment of proportionality: during initial consideration of this matter, it became evident that most ships in international trade use Coordinated Universal Time (UTC), and ships in local trade use Local Time (LT). So, depending on location (e.g. ports in England) and the type of traffic (e.g. a lot of ferries) that a port facilitates, the difference between the time in AIS and the scheduled local time can be big or small. For 100% of all reported times, it is unsure which time zone is used. A small change to the destination field improves the data quality significantly.

12 Change of draught field

- .1 Assessment of practicability: formatting this field to fit the xx.xx meters format is only a one-time update. A yearly update is not necessary;

- .2 Assessment of feasibility: the formatting can be done either remotely in most cases or by a service engineer on board the ship; and
- .3 Assessment of proportionality: during initial consideration of this matter, it became evident that most ships do not specify the units of measurement nor the density. A small change of the draught field improves the data quality significantly.

Analysis of implications

13 The application of the proposed amendments to only new or also existing ships could be considered, apart from that the proposed output is not expected to incur any additional cost to the maritime industry. There are no administrative requirements expected to arise from this output, and the checklist for identifying administrative requirements, as set out in annex 1, has been completed on this basis.

Benefits

14 It is acknowledged that the International Regulations for Preventing Collisions at Sea (COLREG) takes precedence over AIS data in collision avoidance decision making, and that mariners should not be overly reliant on AIS data for critical decision making. At the same time the co-sponsors are of the view that, in terms of safety, AIS data, i.e. destination and ETA of ships in the vicinity, may assist the officer in charge of the navigational watch in situational awareness and collision avoidance. Accurate and reliable AIS data can trigger updates of berth planning and pilot boarding place planning when the ship is still well outside the approach area, giving the ship sufficient time to optimize speed. This, in turn, will avoid drifting or anchoring close to the pilot boarding place and avoid congestion in anchor areas. Safety of navigation will be improved by accurate and reliable AIS information to VTS operators, allowing timely line-up of ships before they reach the VTS area.

15 In terms of environment, accurate and reliable AIS data will support collision risk reduction and enhance optimization of speed, which both contribute to marine environmental protection.

Industry standards / relevant international regulations

16 The operational use of AIS is regulated by the organization through the *Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS)* (resolution A.1106(29)). Other existing industry standards to be considered include IEC 61993-2, ITU-R M.1371-5 and SN/Circ.244 but they do not fully cover the issues concerned. Therefore, revision of resolution A.1106(29) is the appropriate action to be taken to address the issue.

Output

17 The Committee is invited to consider including a new output on "Revision of the *Revised guidelines for the onboard operational use of shipborne automatic identification systems (AIS)* (resolution A.1106(29))" in the post-biennial agenda of the NCSR Sub-Committee with two sessions estimated to complete the item. The output is clarified in SMART terms as follows:

- .1 Specific: it clearly mentions the amendments required;
- .2 Measurable: the finalization of the amendments can be determined;

- .3 Achievable: the proposed amendments are considered achievable subject to liaison with ITU;
- .4 Realistic: the proposal has highlighted the room for improvement and harmonization of data entry which can be realized with modern techniques; and
- .5 Time-bound: the output can be completed in two sessions.

18 The output concerns amendments to the data entry requirements for the destination, ETA and draught field in the AIS equipment. Further consultation with ITU and IEC may be necessary to address the technical implications of the proposed changes.

19 Consideration should also be given to publication of the correct UN/LOCODE in official nautical publications, for example, the Admiralty List of Radio Signals.

Human element

20 The human element has been carefully considered and addressed during the development of this proposal as indicated in the completed checklist set out in annex 2.

Urgency

21 This proposal is not considered urgent. It is expected that two sessions would be needed to complete the work by the NCSR Sub-Committee. No intersessional work is required.

Action requested of the Committee

22 The Committee is invited to consider this proposal and include the proposed new output in the post-biennial agenda of the NCSR Sub-Committee.

ANNEX 1

CHECKLIST FOR IDENTIFYING ADMINISTRATIVE REQUIREMENTS

(MSC-MEPC.1/Circ.5/Rev.5, annex 6)

This checklist should be used when preparing the analysis of implications required in submissions of proposals for inclusion of outputs. For the purpose of this analysis, the term "administrative requirement" is defined in accordance with resolution A.1043(27), as an obligation arising from a mandatory IMO instrument to provide or retain information or data.

Instructions:

- (A) If the answer to any of the questions below is **YES**, the Member State proposing an output should provide supporting details on whether the requirements are likely to involve start-up and/or ongoing costs. The Member State should also give a brief description of the requirement and, if possible, provide recommendations for further work, e.g. would it be possible to combine the activity with an existing requirement?
- (B) If the proposal for the output does not contain such an activity, answer **NR** (not required).
- (C) For any administrative requirement, full consideration should be given to electronic means of fulfilling the requirement in order to alleviate administrative burdens.

1	Notification and reporting? Reporting certain events before or after the event has taken place, e.g. notification of voyage, statistical reporting for IMO Members	NR	Yes ☐ Start-up ☐ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)			
2	Record-keeping? Keeping statutory documents up to date, e.g. records of accidents, records of cargo, records of inspections, records of education	NR	Yes ☐ Start-up ☐ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)			
3	Publication and documentation? Producing documents for third parties, e.g. warning signs, registration displays, publication of results of testing	NR	Yes ☐ Start-up ☐ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)			
4	Permits or applications? Applying for and maintaining permission to operate, e.g. certificates, classification society costs	NR	Yes ☐ Start-up ☐ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)			
5	Other identified requirements?	NR	Yes ☐ Start-up ☐ Ongoing
Description of administrative requirement(s) and method of fulfilling it: (if the answer is yes)			

ANNEX 2

CHECKLIST FOR CONSIDERING AND ADDRESSING THE HUMAN ELEMENT (MSC-MEPC.1/Circ.5/Rev.5, annex 5, appendix)

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
	Workload		<i>Other relevant references may be added</i> <i>Strike out references that are not relevant</i>	<i>If the answer to the question is "yes", identify considerations. If the answer is "no", make a proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
1	Does the "output" affect workload?	No			
1.1	On board, especially in the already intensive phases of the voyage and port operations to:	No	Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8) <i>Guidelines on fatigue (MSC.1/Circ.1598)</i> <i>Principles of minimum safe manning (resolution A.1047(27))</i> <i>Guidelines for the investigation of accidents where fatigue may have been an issue (MSC/Circ.621)</i>		

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
1.1.1	Operations including navigation, cargo and engineering	No			
1.1.2	Maintenance of the ship's structure and its equipment	No			
1.1.3	Onboard administration in support of the ships' management systems	No			
1.1.4	Onboard administration related to regulation involving flag States, classification societies, port State and other bodies such as charterers and port authorities	No			
1.1.5	Increased workload or time pressure on personnel if involved in the implementation of changes prior to the implementation date	No			
1.2	Ashore, in a manner that would affect the ship's operation to:				
1.2.1	Companies' administration	No			
1.2.2	Flag State, port State and classification societies administration such that certification and other processes are compromised or delayed	No			

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
	Decision-making		<i>Other relevant references may be added. Strike out references that are not relevant</i>	<i>If the answer to the question is "yes", identify considerations. If the answer is "no", make a proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
2	Does the "output" impact decision-making on board the ship?	No			
2.1	By confusion with existing requirements and regulations	No			
2.2	By changing responsibilities as laid out in the ISM Code	No			
2.3	By creating complexity in its implementation and/or in the safety management systems	No			
2.4	By requiring increased mental effort, such as the need to find, transform and analyse data or result in the need to make judgements based on incomplete information	No			
2.5	By limiting the time available to establish situational awareness, decide, communicate (possibly across time zones) or check	No			
2.6	By increasing reliance on judgement and administrative controls to manage major risks such as oil spills and collisions	No			

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
	Living and working environment		<i>Other relevant references may be added. Strike out references that are not relevant</i>	<i>If the answer to the question is "yes", identify considerations. If the answer is "no", make a proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
3	Does the "output" affect the living and working environment?	No	<i>Guidelines on the basic elements of a shipboard occupational health and safety programme</i> (MSC-MEPC.2/Circ.3) <i>Guidelines on fatigue</i> (MSC.1/Circ.1598)		
3.1	By interfering with existing arrangements for abandonment, fire-fighting and other emergency plans or procedures	No			
3.2	By introducing new materials that could create an explosion, fire, environmental or occupational health risk	No			
3.3	By introducing new high-energy sources such as high-voltage, high-pressure fluids	No			
3.4	By affecting access or egress and causing a lack of ventilation in working spaces	No			
3.5	By affecting the habitability of accommodation spaces due to noise, vibration, temperatures, dust and other contaminants	No			

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
	Operation and maintenance		<i>Other relevant references may be added. Strike out references that are not relevant</i>	<i>If the answer to the question is "yes", identify considerations. If the answer is "no", make a proper justification</i>	<i>Identify how human element considerations should be addressed in the output</i>
4	Does the "output" affect the operation and maintenance of the ship, its structure or systems and equipment?	No	Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC-MEPC.7/Circ.8) Guidelines for bridge equipment and systems, their arrangement and integration (BES) (SN.1/Circ.288) Principles of minimum safe manning (resolution A.1047(27)) Issues to be considered when introducing new technology on board ships (MSC/Circ.1091) Guideline on software quality assurance and human-centred design for e-navigation (MSC.1/Circ.1512) Guidelines for the standardization of user interface design for navigation equipment (MSC.1/Circ.1609)		

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
4.1	By introducing equipment that the user may find difficult to operate or maintain or may be unreliable	No			
4.2	By introducing new and/or novel technology, or technology that changes the role of the person	No			
4.3	By introducing requirements for new competencies and roles	No			
4.4	By overloading existing infrastructure such as power generation and ventilation systems	No			
4.5	By poor integration with existing systems and controls	No			
4.6	By introducing new and unfamiliar operations/ procedures	No			
4.7	By introducing new and unfamiliar operating interfaces?	No			
4.8	By introducing risks to the ship during any modifications required prior to the implementation date of the output	No			

	1 Question	2 Yes/ No	3 IMO references	4 Considerations	5 Instructions
	Measures to address the human element		Other relevant references may be added Strike out references that are not relevant	If the answer to the question is "yes", identify considerations. If the answer is "no", make a proper justification	Identify how human element considerations should be addressed in the output
5	Does the "output" require changes to:	No	Shipboard technical operating and maintenance manuals (MSC.1/Circ.1253) Revised guidelines for the operational implementation of the International Safety Management (ISM) Code by Companies (MSC MEPC.7/Circ.8)		
5.1	Training	No			
5.2	Practical skill development and competences	No			
5.3	Operating, management and/or maintenance procedures	No			
5.4	Information/manuals for operation and maintenance	No			
5.5	Spares outfit	No			
5.6	Occupational safety requirements including guarding and PPE	No			
5.7	Shore support	No			

ANNEX 3
INDICATIVE ROAD MAP

The following timetable is being put forward as an indicative road map for the proposed output:

Year	Committee & Activity	Outcome
2026	MSC 111: Output submission and approval Council, 137th session: Endorsement of new output	
2027	NCSR 14: Inclusion of the output in the provisional agenda for NCSR 15	
2028	NCSR 15: Establishment of a working group. Identification of issues for which input from ITU and/or IEC are needed	
2029	NCSR 16: Establishment of a working group. Approval of the revised guidelines	
2030	Approval by MSC	