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INTERIM GUIDELINES FOR THE PRESENTATION AND DISPLAY OF AIS TARGET INFORMATION

- 1 The Sub-Committee on Safety of Navigation (NAV), at its forty-seventh session (2 to 6 July 2001), agreed on interim guidelines for the presentation and display of AIS target information.
- 2 The interim guidelines deal with the graphical presentation and display of AIS target data in standalone or integrated navigational aids or systems and are considered as an interim performance guideline. They should be replaced by the appropriate performance standards after experience has been gained.
- 3 These interim guidelines have been established to allow manufacturers to develop the relevant equipment and functions in time and to allow mariners to acquaint themselves with the use of intelligent combination of information from the first date of AIS deployment.
- 4 Member Governments are invited to bring the annexed interim guidelines to the attention of all concerned.

ANNEX

**INTERIM GUIDELINES FOR THE PRESENTATION AND
DISPLAY OF AIS TARGET INFORMATION**

1 Definitions

- Sleeping target** A target symbol indicating the presence and orientation of a vessel equipped with AIS in a certain location. No additional information is presented until activated thus avoiding information overload.
- Activated target** A symbol representing the automatic or manual activation of a sleeping target for the display of additional graphically presented information including:
- a vector (speed and course over ground);
 - the heading; and
 - ROT or direction of turn indication (if available) to display actually initiated course changes.
- Selected target** A symbol representing the manual selection of any AIS target for the display of detailed information in a separate data display area. In this area, received target data as well as the calculated CPA and TCPA values will be shown.
- Dangerous target** A symbol representing an AIS target (activated or not) which data contravene pre-set CPA and/or TCPA limits.
- Lost target** A symbol representing the last valid position of an AIS target before the reception of its data was lost.

2 Operational requirements

In addition to the relevant performance standards, AIS information may be presented and displayed according to the following interim guidelines.

2.1 Presentation of information

2.1.1 If AIS information is made available for a graphical display, at least the following information should be displayed: (see resolution MSC.74(69), Annex 3 (AIS), paragraph 6):

- .1 position;
- .2 course over ground;
- .3 speed over ground;
- .4 heading; and
- .5 rate of turn, or direction of turn, as available.

2.1.2 If information provided by AIS is graphically presented, the symbols described in the Appendix should be applied. In the case of a radar display, radar signals should not be masked, obscured or degraded.

2.1.3 Whenever the graphical display of AIS targets is enabled, the graphical properties of other target vectors should be equivalent to those of the AIS target symbols, otherwise the type of vector presentation, (radar plotting symbols or AIS symbols), may be selectable by the operator. The active display mode should be indicated.

2.1.4 The presentation of AIS target symbols, except for sleeping or lost targets, should have priority over other target presentations within the display area, including targets from EPA, ATA or ARPA. If such a target is marked for data display, the existence of the other source of target data may be indicated, and the related data may be available for display upon operator command.

2.1.5 The mariner should be able to select additional parts of the information from AIS targets, which should then be presented in the data area of the display, including the ship's identification, at least the MMSI. If the received AIS information is not complete, this should be indicated.

2.1.6 A common reference should be used for the superimposition of AIS symbols with other information on the same display, and for the calculation of target properties (e.g. TCPA, CPA.).

2.1.7 If AIS information is graphically displayed on a radar, the equipment should be capable of appropriately stabilising the radar image and the AIS information.

2.1.8 Target data derived from radar and AIS should be clearly distinguishable as such.

2.1.9 The operator may choose to display all or any AIS targets for graphical presentation. The mode of presentation should be indicated.

2.1.10 If the display of AIS symbols is enabled, removing a dangerous target should only be possible temporarily as long as the operator activates the corresponding control.

2.1.11 The AIS symbol of an activated target may be replaced by a scaled ship symbol on a large scale/small range display.

2.1.12 If the COG/SOG vector is shown, its reference point should be either the actual or the virtual position of the antenna.

2.1.13 Means should be provided to select a target or own ship for the display of its AIS data on request. If more than one target is selected, the relevant symbols and the corresponding data should be clearly identified. The source of the data, e.g., AIS, radar, should be clearly indicated.

2.2 Processing of information

2.2.1 If zones or limits for automatic target acquisition are set, these should be the same for automatically activating and presenting any targets regardless of their source.

2.2.2 The vector time set should be adjustable and valid for presentation of any target regardless of its source.

2.2.3 If radar plotting aids are used for the display of AIS information, these should be capable of calculating and displaying collision parameters equivalent to the available radar plotting functions.

2.2.4 If the calculated CPA and TCPA values of an AIS target are less than the set limits,

- a dangerous target symbol should be displayed; and
- an alarm should be given.

The preset CPA/TCPA limits applied to target data derived from different sensors should be identical.

2.2.5 If the signal of a dangerous AIS target is not received for a set time:

- a lost target symbol should appear at the latest position and an alarm be given;
- the lost target symbol should disappear after the alarm has been acknowledged; and
- means to recover the data for a number of last acknowledged lost targets may be provided.

Preferably this function may also be applied to any AIS target within a certain distance.

2.2.6 An automatic display selection function may be provided to avoid the presentation of two target symbols for the same physical target. If target data from AIS and from radar plotting functions are available, then the activated AIS target symbol should be presented, if the automatic selection criteria is fulfilled, otherwise the respective symbols should be displayed separately. The operator should have the option to make reasonable changes to the default parameters of automatic selection criteria.


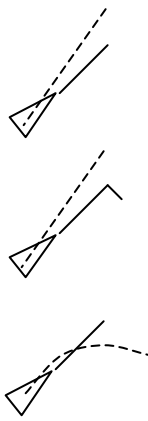

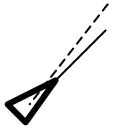

2.2.7 Means should be provided to display and acknowledge alarm messages from own AIS. Indication should be given if own AIS is out of service or switched off.

2.3 Human Interface

As far as practical, the user interface for operating, displaying and indicating AIS functions should be equivalent to the other relevant functions of the navigational aid.

Appendix

Recommended AIS Target Symbols

AIS target	Symbol	Description of symbol
AIS target (sleeping)		An isosceles, acute-angled triangle should be used with its centroid representing the target's reference position. The most acute apex of the triangle should be aligned with the heading of the target, or with its COG, if heading information is not available. The symbol of the sleeping target may be smaller than that of the activated target.
Activated AIS target		An isosceles, acute-angled triangle should be used with its centroid representing the target's reference position. The most acute apex of the triangle should be aligned with the heading of the target, or with its COG, if heading information is not available. The COG/SOG vector should be displayed as dashed line starting at the centroid of the triangle The heading should be displayed as solid line of fixed length starting at the apex of the triangle A flag on the heading indicates a turn and its direction in order to detect a target manoeuvre without delay A path predictor may also be provided
Selected target		A square indicated by its corners should be drawn around the target symbol.
Dangerous target		A bold line clearly distinguishable from the standard lines should be used to draw the symbol. The size of the symbol may be increased. The target should be displayed with: vector, heading and rate of turn indication. The symbol should flash until acknowledged. The triangle should be red on colour displays.
Lost target		A prominent solid line across the symbol, perpendicular to the last orientation of the symbol should be used. The symbol should flash until acknowledged. The target should be displayed without vector, heading and rate of turn indication.

- If colour fill is used no other information should be masked or obscured.
- Base stations may transmit information on targets tracked by other means. If these targets are displayed they should be presented using symbols clearly distinguishable from the symbols above.
- Further symbology for special situations will be developed.