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Input paper for the following Committee(s): check as appropriate Purpose of paper:

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Agenda item [[1]](#footnote-2)

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Proposal for Displaying of S125 Updated Data on ECDIS When AtoNs Has Reverted Back to Design State

# SUMMARY

This input paper presents a testing experiment based on S125 (Ver0.0.3). The current test includes the acquisition of S125 data, updated data, and the display of S125 data lists. This document provides a detailed description of the testing process to illustrate the representation of S125 updated data that has reverted back to the design state. Additionally, it puts forward suggestions based on the test results.

## Purpose of the document

This input paper intends to share China's experience in practical application test of S125 on ECDIS using 5G networks.

The ARM Committee is also invited to consider the proposal for displaying of S125 updated data on ECDIS when the Aids to Navigation (AtoNs) has reverted back to the design state.

## Related documents

1. IHO S125 maritime navigation service 0.0.3

# Background

IALA ARM S201 TG released version S125 0.0.1 in March 2022, version S125 0.0.2 in September of the same year, and version 0.0.3 in October 2022. IHO and IALA aim to standardize the dynamic information of Aids to Navigation (AtoNs) by formulating the S125 product specification. This initiative seeks to improve the timeliness of Aids to Navigation (AtoNs)' dynamic information, contributing to enhancing navigation safety for ships.

At the ARM 17th Meeting, the task group reviewed comments from China Maritime Safety Administration(MSA) about “Proposal for portrayal of Updated Data Method of S125 on ECDIS” and made notes during the discussion for inclusion in future updates. The conclusions are:

1. Agree with the recommendation to avoid portrayal of status symbol when something has reverted back to design state.
2. There is a need to enable mariners to see the change sequence, including when something has returned to design state, but this should not be done in the chart view.
3. More investigation is needed to understand well what the user needs are regarding information provided when an issue is resolved and the AtoN status returns to design state.
4. S98 Annex C seems like the best place for describing the need of a dialogue window to support S100 based product’s update information.
5. KRISO will investigate the possibility to use XSLT portrayal to remove change symbol of S125 when an issue reverts back to design state.
6. S125 should be enhanced in its next version to include feature level updating as per S100 ed.5.x

In the IALA Draft Committee Work Programme 2023-2027, there are plans for ARM and IHO NIPWG to continue the in-depth development of the S125 product specification and release version S125 1.0.0 as soon as possible. In response to the work programme of ARM, we are currently conducting a practical application test for the current S125 0.0.3 version, in conjunction with proposals from the China MSA presented at the ARM 17th meeting. We put forth suggestions on how information about a specific element that has reverted back to the design state should be displayed on ECDIS.

# discussion

## Steps of the test

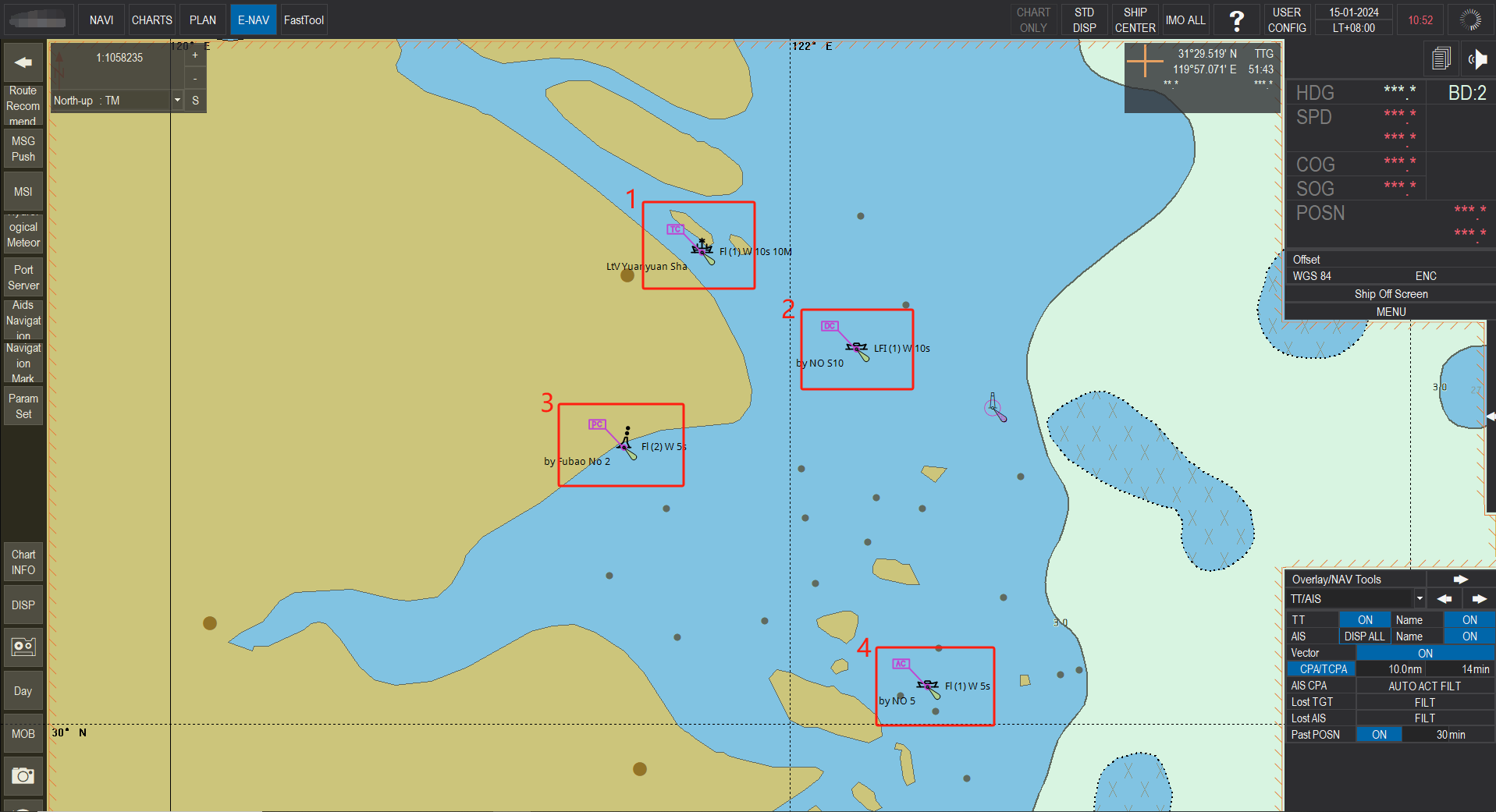
The current test mainly involves three key steps: the release of S125 basic data, the release of updated data, and the display of data information on ECDIS:

1. The release of S125 test basic data: The Yuanyuan Sha LightVessel, the S10 Light Buoy in the South Channel of the Yangtze River Estuary, the No. 5 Light Buoy in the Deep-Water Channel of the Yangtze River Estuary, and the Fubao No. 2 Isolated Danger Mark were selected as the basic data for the test release;
2. The release of S125 test updated data: The Yuanyuan Sha LightVessel that has reverted back to the design state and serves as the updated data for the test release;
3. S125 test data application on ECDIS: After downloading S125 test basic data and updated data, ECDIS analyses them according to the S125 product specification and conducts overlay display on the electronic chart. By providing prompts on the S125 data list, mariners are alerted that updates have been made. Detailed update content and sequence can be viewed by clicking on the list item.

## Results of the test

### Portrayal of basic data on ECDIS

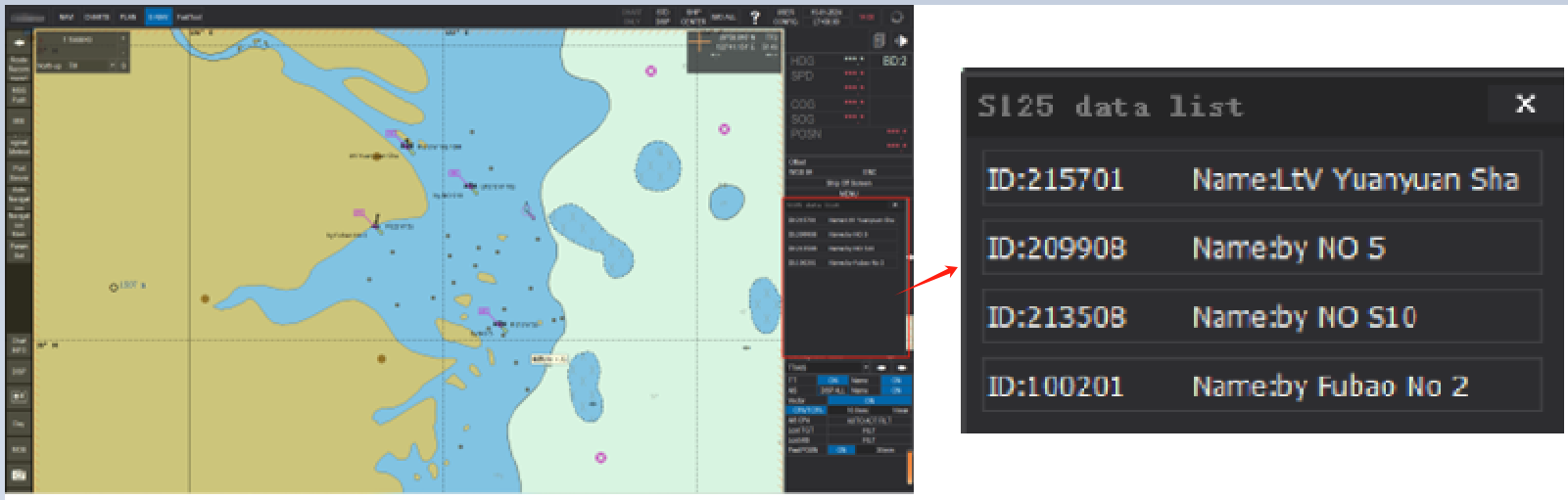
Basic test data include the Yuanyuan Sha LightVessel, No. S10 Lighted Buoy from the South Channel of the Yangtze River Estuary, No.5 Lighted Buoy from the deep-water channel of the Yangtze River Estuary, and Fubao No.2 LightFloat. The ChangeTypes are defined as ChangeType=1, ChangeType=4, ChangeType=3 and ChangeType=2 respectively. Actual test symbols are shown in the following figure:



1. Portrayal of S125 test basic data on ECDIS

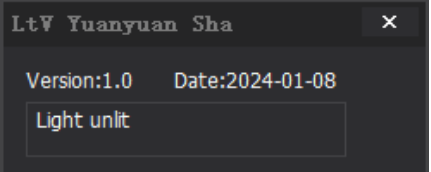
### S125 data list

Displaying all current S125 data on ECDIS through the S125 data list dialog box, as shown in the following figure:



1. S125 data list

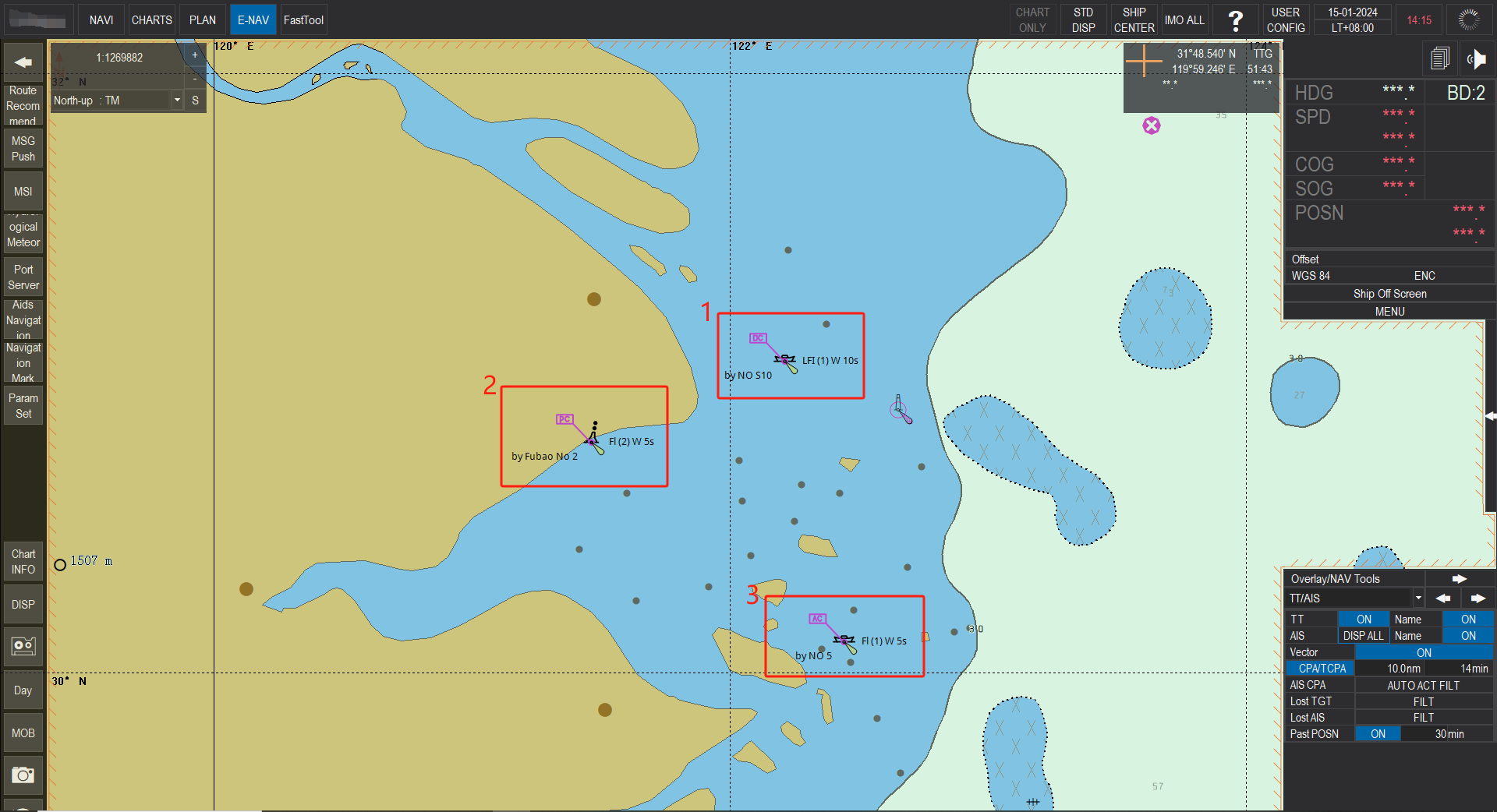
Clicking on a data entry in the S125 data list will display detailed information about that data:



1. The detailed information of Yuanyuan Sha LightVessel(Light unlit)

### Loading S125 updated data

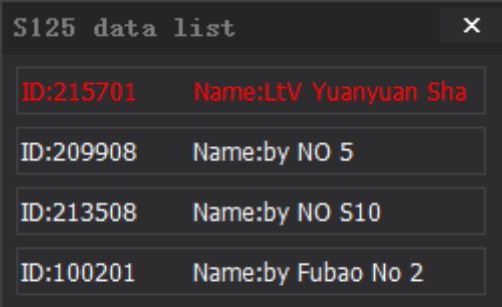
The status type of the Yuanyuan Sha LightVessel in the original S125 basic data was 'light unlit' (lightChangeType=1). In the updated data, it is changed to 'Light operating properly' (lightChangeType=8). Since the updated information of the Yuanyuan Sha LightVessel has reverted back to the design state, it should not be displayed on ECDIS, as shown in the following figure:



1. The Yuanyuan Sha LightVessel was not displayed on ECDIS when it reverted back to the design state

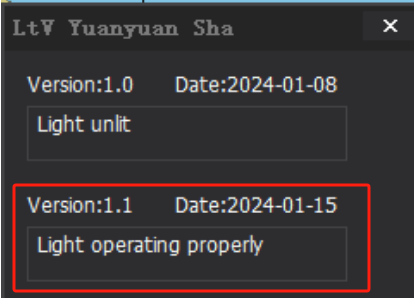
### The notification of information when something reverted back to the design state on ECDIS

To avoid excessive symbol overlay on ECDIS, we have refrained from drawing symbols for S125 data when it has reverted back to the design state. However, in the S125 data list, we provide notifications, and S125 data with updated information is shown in red in the data list:



1. The list entry for the Yuanyuan Sha LightVessel reverted back to the design state has its font changed to red for notification

When the mariner clicks on the red list entry, it will display detailed information about the data, including every instance of data update. Here, the mariner can gain a clear understanding of the complete dynamic changes of the AtoN and the information about its restoration to the design state.



1. In the details dialog box, the mariner can clearly see the sequence and process of dynamic information updates of the AtoN

## Proposal for displaying of S125 updated data on ECDIS when it reverted back to the design state

### Suggested process for updated data display

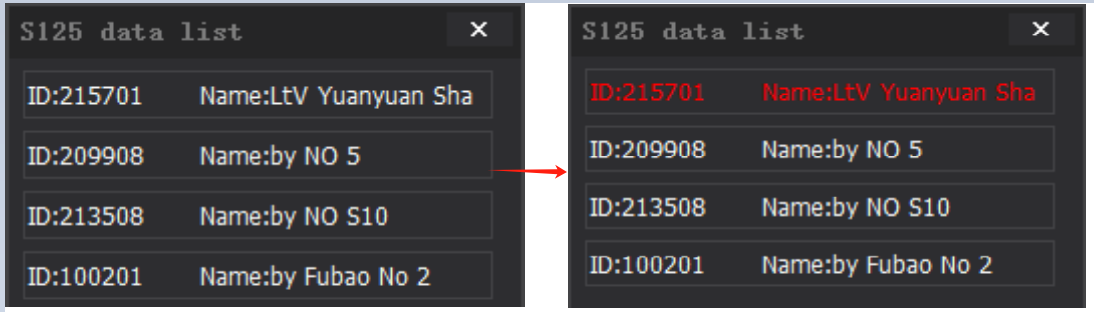
We suggest that when displaying updated data in S125 with symbols, we should analyse its corresponding state category. If the corresponding state category reverts back to the design state, we won’t draw new symbols after clearing the original symbol display. At the same time, in the S125 data list, the font colour indicates to the mariner that the data in this list entry has been updated. The mariner can click on the list entry to view the updating process of the data which has reverted back to its design state in the details dialog box . The suggested process for displaying updated data is shown in the following figure:



1. Suggested process for updated data display on ECDIS

### Providing prompts to the mariner through the data list

Although the information that S125 data reverted back to the design state is not symbolically displayed on ECDIS, mariners can receive this notification through changes in the S125 data list. They can click on specific list items to view the corresponding dynamic change sequence and process, as shown in the following figure:



1. By using text color in the S125 data list to alert mariners that the data has been updated

Mariners can click on the list entry to view the detailed history of information changes. This approach provides a display prompt on Electronic Chart Display and Information System(ECDIS) of the normalization of S125 data, avoiding unnecessary symbol overlay while allowing mariners to perceive the sequence and process of data changes more clearly.

# References

IHO NIPWG9-05.1A Rev1

Report of the Joint IALA/IHO workshop on S-100/200 development and portrayal

# Action requested of the Committee

The Committee is requested to:

1 Note this paper.

2 It is recommended that ARM consider the proposal for displaying S125 updated data on ECDIS when Aids to Navigation (AtoNs) has reverted back to design state on ECDIS.

1. Leave open if uncertain [↑](#footnote-ref-2)