

Paper for Consideration by ENCWG4

Display of the 'non-HO' data boundary in ECDIS

Submitted by:	Australia (AHO)
Executive Summary:	Although the 'non-HO' data boundary is part of ECDIS 'Base' display, some OEM's allow it to be turned off. No S-64 test currently exists to check for this non compliance.
Related Documents:	S-52 PL 4.0.2, S-64 Ed 3.0.2
Related Projects:	S101PT

Introduction / Background

The AHO is of the opinion that there is an inconsistency within S-52 in regards to the display of the 'non-HO' data boundary.

Furthermore, it was found that two independent ECDIS brands behave differently in this respect. This could be linked to the wording currently used in S-52.

Analysis/Discussion**S-52 Ed 6.1.1:**

- Section 2.3.1c_3 'Manufacturer's Information on the route monitoring display':

2 If the manufacturer should add non-HO (non- ENC) chart information to the SENC it should be symbolised in the same way as HO chart information and distinguished from HO chart information as described for the various cases below:

- (i) Limited
- (ii) An area of non-HO data is located in waters for which HO chart data exists; it is superimposed on the HO data. In some cases the non-HO data may be more appropriate for the intended purpose, for example it may be more detailed.
In this situation, it is at the mariner's discretion whether to use the HO or the non-HO data. If the mariner selects the non-HO data, the boundary of this data should be identified on the ECDIS display by the line LC(NONHODAT) and the warning "Unofficial data displayed; refer to official RNC or paper chart" should be displayed. Note that the LC(NONHODAT) is a "one-sided line", and the boundary of the area of non-HO data must be drawn according to S-57 rules to ensure that the diagonal stroke of the line is on the non-HO data side of the line. More details are given in the Presentation Library, Part I, section 10.1.7 and in section 2 of the Addendum to Part I.
- (iii) An area of non-HO data is located wholly outside the area covered by HO data (although it may share a boundary with the HO data) but is shown on the same display as HO data. The non-HO data should be bounded by the line LC(NONHODAT) and the warning "Unofficial data displayed; refer to official RNC or paper chart." should be displayed.

- **3** The mariner should be able to remove all manufacturer's information if the need should arise.

S-52 PL 4.0.2 Part I:

- Section 10.1.7 'Limit of ENC Coverage: Non-HO Data on the Display'

Since the HO will not issue a data coverage diagram, the ECDIS must compile a graphical index of the HO ENC data available, classified by navigational purpose, and make it available to the mariner.

The end of HO data need not be identified on the display. The appearance of the "No data" colour (NODTA) and fill pattern AP(NODATA03) will indicate the end of data.

If non-HO data is shown on the ECDIS display, its boundary must be identified by the linestyle LC(NONHODAT). The display priority is 3; over radar; display base; viewing group 11060. Note that the LC(NONHODAT) is a "one-sided" line and the boundary of the non-HO data must be drawn according to S-57 rules to ensure that the diagonal stroke of the line is on the non-HO data side of the line.

- Section 10.3.4.6 'Viewing Groups'

- The revised IMO Performance Standards for ECDIS, section 5.5. state, "It should be easy [for the mariner] to add or remove information from the ECDIS display," although, "It should not be possible to remove information in the Display Base."

- Section 10.7.3 'Non-HO (Non-ENC) Chart Information'

Limited non-HO data added to existing HO ENC data to augment the chart information must be distinguished from the HO-ENC information as follows:

Point object: Superimpose SY(CHCRIDnn).
Line object: Overwrite with line LC(CHCRIDnn).
Area object: Overwrite area boundary with line LC(CHCRIDnn) and superimpose SY(CHCRIDnn) on any centred symbol.

Non-HO data must be distinguished from manually updated chart information, which uses the same identifiers, by cursor picking.

See IHO S-52, section 2.3.1c, for information on how to symbolize other cases of non-HO data appearing on the ECDIS display.

Non-HO chart information may be updated by any systematic procedure. A record of updates must be maintained.

The Mariner must be able to remove all non-HO chart information if the need should arise.

- Section 14.2 'Chart Information – Display Base'

IHO ECDIS Presentation Library

CHART INFORMATION - DISPLAY BASE

RESERVED	
10000-10999	Reserved for chart information
A, B CHART FURNITURE	
11000	Information about the Chart Display
11010	cursor [symbol SY(CURSRA01)]
11020	na (not assigned)
11030	scalebar, latitude scale [SY(SCALEB10),SY(SCALEB11)]
11040	north arrow [SY(NORTHAR1)]
11050	no data [colour NODTA, AP(NODATA03)], unsurveyed (UNSARE), incompletely surveyed area
11060	non-HO data boundary LC(NONHODAT)
C, D, E, F TOPOGRAPHY AND INFRASTRUCTURE	
12000	Land area

- S-52

Conclusions

The AHO believes that, based on the wording used in S-52 (main document and the PL), there could be some confusion between the terms 'non-HO Information' and 'non-HO data Boundary'.

'Non-HO Information' relates to data content and 'non-HO data Boundary' is the limit between 'official' (ENC) and 'unofficial' product (e.g. CMAP, etc) products.

S-52 allows for 'non-HO Information' to be removed at mariner's request but it does not specifically talk about the 'non-HO data Boundary'. The only direct message regarding the display of the latter is in Section 14.2 'Chart Information – Display Base' where LC(NONHODAT) is listed as part of ECDIS 'Base' display and, as a consequence, a feature that shouldn't be possible to 'turn off' (refer to 10.3.4.6).

Recommendations

- Confirm the expected behaviour of the 'non-HO data Boundary' in ECDIS.
- If the boundary is confirmed as part of ECDIS 'Base' display, create a new S-64 test to check performance
- If the NCWG understands the 'non-HO' boundary shouldn't be part of ECDIS 'Base' display, amend S-52 as required.

Justification and Impacts

ECDIS performance should be as standard as possible but this relies on S-52 being clear and consistent. Every time there is a performance expectation on ECDIS this should be checked by a corresponding S-64 test.

Lack of standardisation in ECDIS performance has been reported to cause confusion among mariners (especially when changing ships) and does support the provision of generic ECDIS training.

Action Required of ENCWG

The ENCWG is invited to:

- a. Discuss the topic and,
- b. Asses the validity of the AHO's findings and recommendations.