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ISSUES RELATING TO THE ENCODING AND SYMBOLISATION OF TRAFFIC SEPARATION
SYSTEMS IN ECDIS

Dear Hydrographer,

Information paper ([TSMAD22_DIPWG3-INF1_Symbolization_in_ECDIS](#)) submitted to the combined TSMAD 22 / DIPWG 3 meeting held in Seoul, Republic of Korea (11-15 April 2011) states that the way that some roundabouts within traffic separation schemes are shown in ECDIS may be confusing for mariners.

As a result, the TSMAD Working Group has produced a revised version of ENC Encoding Bulletin No 1 which provides additional encoding guidance for the following sections of S-57 Appendix B.1 (Use of the Object Catalogue)

clause 10.1.1 Navigational lines and recommended tracks

clause 10.2.2.2 Deep water route centrelines

clause 10.2.4 Recommended routes.

This guidance has also been included in Edition 3.0.0 of the Use of the Object Catalogue document published in October 2011.

Edition 3.0.0 of the Use of the Object Catalogue illustrates how a Traffic Separation Scheme that extends over adjacent ENC cells, and that have been encoded by different producer nations, can result in confusing symbolization.

The text of Encoding Bulletin No 1 is included as Annex A for your attention.

On behalf of the Directing Committee

Yours sincerely,



Robert WARD
Director

Annex A: ENC Encoding Bulletin No 1 (English only)

ENC Encoding Bulletin No 1.

EB1 - UOC clauses 10.1.1 Navigational lines and recommended tracks; 10.2.2.2 Deep water route centrelines; and 10.2.4 Recommended routes

Clause 10.1.1 of Edition 2.1 (April 2002) of the *Use of the Object Catalogue for ENC* (S-57 Appendix B.1, Annex A) provides guidance for the encoding of navigational lines and recommended tracks, including the recommendation that the direction of digitising for a one-way recommended track be the same as the direction to be followed along the track. Clauses 10.2.2.2 and 10.2.4 of the *Use of the Object Catalogue for ENC* provide similar guidance in relation to deep water route centrelines and recommended routes respectively.

Clause 14.4.2 in Part 1 of Edition 3.4 (January 2008) of the *IHO ECDIS Presentation Library* (S-52 Annex A – formerly Annex A of Appendix 2) states that directional linestyle symbols are always oriented in the direction of the digitised line they represent. Therefore, for any line type spatial object that is directional (i.e. the associated geo object contains the attribute TRAFIC), the orientation of the symbology in the ECDIS representing the direction to be followed along the line will always correspond to the direction of digitising of the spatial line object by the compiler, and not the population of attributes such as ORIENT for the associated geo objects.

The direction of digitising of the line for a two-way directional line object (TRAFIC = 4 (two-way)) is not a factor in symbolising the line in the ECDIS. However, the direction of digitising of the line for a one-way directional line object (TRAFIC = 1 (inbound), 2 (outbound) or 3 (one-way)) determines the directional representation of the line in the ECDIS. Therefore, where such lines are digitised in the opposite direction to the intended direction of traffic flow, ECDIS symbology will display the direction to be followed as the opposite to that intended, thus providing misleading and potentially dangerous information to the mariner.

Because of the impact in the ECDIS display of the direction of the line for a one-way directional line object, encoders are advised, therefore, that when the traffic flow along a recommended track, deep water route centreline or recommended route is one way (attribute TRAFIC = 1, 2 or 3), then the direction of digitising of the spatial line object must be the same as the intended direction of the traffic flow.

[Updated – June 2011]