INTERNATIONAL HYDROGRAPHIC ORGANIZATION

ORGANISATION HYDROGRAPHIQUE INTERNATIONALE

Background Information

ENC/ECDIS Data Presentation and Performance Check for Ships

Introduction

The International Hydrographic Organization (IHO) is the intergovernmental organisation that sets the standards for the ECDIS chart display and the performance of the chart data in an ECDIS. The IHO standards have been revised a number of times since ECDIS was introduced to meet the revised ECDIS Performance Standards adopted by the International Maritime Organization (IMO) and also to improve how the chart data is displayed in ECDIS. Examples are the display of Archipelagic Sea Lanes (ASL) and Particularly Sensitive Sea Areas (PSSA).

The latest edition of the main IHO standards that concern the display and availability of chart data in ECDIS are:

IHO Standard	Name	Effective date of latest edition
S-57 Edition 3.1	IHO Transfer Standard for Digital Hydrographic Data	November 2000
Presentation Library Edition 3.4	IHO Presentation Library for ECDIS	January 2008
S-63 Edition 1.1	IHO Data Protection Scheme	March 2008

Operating software that does not employ these latest versions of the IHO standards may not operate in the most efficient manner and new chart symbols will not be shown correctly. In this case, the ECDIS software may need to be updated or in the meantime, mariners may need to employ particular operating procedures to access some chart data and certain safety functions. The need to maintain ECDIS software is stated in IMO SN.1/Circ.266/ Rev 1.

Software Versions

Every ECDIS should provide a function to display the version of the IHO standards being used by the software. However, the method for finding this information differs from system to system and is not always easy to locate. It may also be possible to find this information on the manufacturer's website by using the model name and version number.

Recent Warnings

Investigations have also found that some ECDIS, especially early models, are affected by display anomalies and in some cases appropriate alarms and indications may not be raised as expected. As a result of these issues and to alert mariners to them, three NAVAREA warnings were issued in 2010. A copy of the latest warning (issued as NAVAREA1 317/10) which provides some advice on how to deal with the problems is included at the end of this text.

Various ECDIS issues were raised in a paper submitted to the IMO's Maritime Safety Committee (MSC) where it was agreed that further investigations were necessary. The MSC has issued two circulars that are relevant

1. MSC.1/Circ.1391 – *Operating anomalies identified within ECDIS*. This circular encourages and requests mariners to inform appropriate authorities if they notice any abnormal operation of ECDIS.
2. Safety of Navigation Circular SN.1/Circ.266/ Rev 1 - *Maintenance of ECDIS Software*. This Circular reminds mariners that ECDIS operating software needs to be kept up to date for the latest IHO standards. A particular benefit of upgrading the ECDIS operating software to the latest edition is that all known software anomalies that have been corrected by the manufacturer will be included in the latest edition. MSC.1/Circ 1389 - *Guidance on Procedures for Updating Shipborne Navigation and Communication Equipment* is also relevant.

In addition, the MSC at its 89th meeting decided to refer the issue to the NAV, COMSAR and STW Sub-Committees for their review and to provide their consolidated comments to MSC 90 in May 2012.

Role of the IHO's ENC/ECDIS Data Presentation and Performance Check for Ships

The check data being provided by the IHO is intended to help mariners identify if their particular ECDIS is able to display all the latest IMO-approved features required on charts. It is also designed to highlight if particular display concerns are present in the ECDIS being tested. The checks are not exhaustive and mariners should, in any case, take note of the general information contained in NAVAREA1 317/10 and the need to report any anomalous operation of their ECDIS to their Flag State authority as requested in IMO MSC.1/ Circ. 1391.

If an ECDIS does not display the chart objects in the check dataset in the same way as they are shown on the accompanying instruction sheet, mariners should contact their ECDIS manufacturer or an appropriate equipment maintenance company to investigate and resolve why there are differences. In the meantime, they may need to employ particular procedures in order to overcome some of the shortcomings identified in their ECDIS. Examples of these procedures are described in the check instructions.

Text of NAVAREA1 317/10

As previously notified by NAVAREA warning, mariners using ECDIS are reminded not to rely solely on automated voyage planning and monitoring checks and alarms. Some ECDIS appear only to undertake route check functions on larger scale ENCs and therefore alarms might not activate. This may not be clearly indicated on the ECDIS display. Mariners should always undertake careful visual inspection of the entire planned route using the 'other / all' display mode to confirm that it, and any deviations from it, is clear of dangers.

Recent preliminary investigation indicates that some ECDIS may not display certain combinations of chart features and attributes correctly and on rare occasions may fail to display a navigationally significant feature. This appears to be caused by anomalous behaviour in some ECDIS software, especially early versions. The existence of such anomalies highlights the importance of maintaining ECDIS software to ensure that operational capability and reliability are maintained. It is recommended that appropriate checks are made with the equipment manufacturer. This is of particular importance where ECDIS is the only source of chart information available to the mariner

The International Hydrographic Organization (IHO) is investigating these matters in consultation with ECDIS equipment manufacturers. Further information will be made available through Notices to Mariners and within the UK element of the README.TXT file included on ENC service media.