4th HSSC MEETING
Taunton, 25-28 September 2012

Paper for Consideration by HSSC

Progress Report on Results from the IHO ECDIS Data Presentation and Performance Check

Submitted by:	IHB
Executive Summary:	This paper summarises the results of reports from mariners using the IHO ECDIS data presentation and performance check.
Related Documents:	1 IHO CL 74/2012 - *2nd update report on IHO action concerning ECDIS software issues*
	2 IMO SN.1/Circ. 312 - Safety of Navigation – Operating anomalies identified within ECDIS

Introduction / Background

1. Now that ECDIS is being used increasingly at sea certain unexpected behaviour has come to light in the operation of some ECDIS systems. Reports on IHO action have been provided regularly to IHO Member States and to the IMO. The problems can relate to the operating software in some ECDIS or to the way that ENCs are encoded, or to a combination of both. Not all ECDIS are affected. The principal underlying causes include a lack of clarity in some of the relevant IHO standards and changes to the IMO and IHO standards that have not been incorporated in upgrades to existing equipment. Some of the problems can be addressed by making improvements to IHO standards, but others are outside the control of the IHO and require coordination and action by various other organisations, such as the IMO, the ECDIS manufacturers and the ECDIS type-testing laboratories. The IHO has taken a leading role in facilitating this coordination.

2. In late 2011, the IHB, with the assistance of the UK, published an IHO ECDIS data presentation and performance check. This check was intended to alert mariners that some ECDIS may not portray or use ENC data as intended by the relevant IHO standards. At the same time, results from the checks have been used to help identify which manufacturers' systems are affected.

Situation Report

3. The IHB has now received reports of checks on nearly 900 ECDIS installations in use at sea. The reports have been analysed to identify trends and to identify specific manufacturers where problems may exist. Manufacturers have also been provided with copies of relevant reports with the identity of the respondents removed.

4. Reports received by the IHB suggest that the majority of ECDIS systems sold before 1 January 2009 require some form of software upgrade in order to comply with the latest version of the relevant technical standards agreed by the IMO. 1 January 2009 is the date on which the current version of the IMO Performance Standard for ECDIS came into effect, incorporating, among other things, the revised IHO Presentation Library edition 3.4. ECDIS manufactured and approved after 1 January 2009 appear to meet these required standards.

5. In most cases of ECDIS equipment sold before 2009 that require a software upgrade, various operational "work-around" solutions can be implemented by mariners. This means that with caution these ECDIS can still continue to be used at sea for safe navigation until such time as a software upgrade can be applied. However, there is an early model from one specific manufacturer, for which no such work-around solution is possible. For the oldest versions of that manufacturers' ECDIS equipment (equipment sold about 10 years ago), cross-checking with paper charts is the only option available to ensure that all relevant chart information is available to

the mariner. Mariners were alerted to this situation through a combination of Notices to Mariners and through NAVAREA warnings.

6. The specific ECDIS manufacturer concerned has taken very active and positive action to remedy the situation with its early model of equipment and has produced an upgrade patch that mariners can now download free of charge. This manufacturer has also made every effort to contact individually all users of its equipment - although, this is not always possible. Most ECDIS manufacturers have reported to the IHB that it is often difficult to maintain contact with ships - especially when ships are sold or operated under new management.

7. Following the issue of the IHO ECDIS data presentation and performance check, a number of the manufacturers of ECDIS have reported to the IHB that they have reinvigorated their software updating regimes and arrangements as well as continuing with their active and very constructive participation in the relevant IHO working groups. However, updates are not available for all brands of ECDIS. There is also one ECDIS manufacturer that has ceased trading and another that no longer supports its previously sold ECDIS systems. While this probably represents only a very small number of ECDIS in use at sea, there is no software upgrade support for such legacy systems, even though the software requires updating.

8. Progress in resolving the outstanding issues with ECDIS operating anomalies is generally positive. The key stakeholders are now actively involved. However, work remains to be done, particularly to coordinate efforts between the various stakeholder entities to ensure that all ECDIS being used at sea conforms to the latest versions of the relevant underpinning IHO and IMO standards. This is the reason for the next technical workshop and for the on-going deliberations by the IMO Maritime Safety Committee (MSC) and its Sub Committee on Safety of Navigation (NAV).

Continuing Action

9. Revision of Standards. Work is continuing to improve the clarity and definition of the relevant IHO standards to remove ambiguities or potential sources of discrepancy between the intention of the standards and their implementation. Progress on this should be available in the reports of the relevant HSSC Working Groups.

10. Technical Workshop. A 3rd workshop of technical experts on resolving operating anomalies in ECDIS will be held at the IMO Headquarters in London on 15 and 16 October. It will be convened by the IHB. Participants will review progress and the results of the IHO ECDIS Data Presentation and Performance Check together with input and feedback provided by the most recent meetings of the relevant IMO committees and sub committees. The workshop participants will be invited to develop practical proposals and identify any additional key points to be forwarded to the relevant IMO, IHO or other relevant organisations for their further consideration. This could include:

- mechanisms and requirements for software in ECDIS equipment to be periodically upgraded to keep it up to date and in accordance with the latest standards adopted by the IMO;
- improving mariner awareness of the need to upgrade and maintain ECDIS software;
- improving the consistency of data encoding in ENCs; and
- the continuing need for a coordinated reporting, assessment and feedback mechanism for ECDIS implementation and related equipment performance issues.

11. IMO. The IMO Sub Committee on Safety of Navigation (NAV), at its 58th session in June this year agreed that further work was required on consolidating the various IMO documents related to the use of ECDIS. This will be addressed over the next two annual sessions of NAV. NAV58 also approved a new IMO Safety of navigation Circular on operating anomalies within ECDIS. This circular provides detailed descriptions of the type of anomalies that may be present in some ECDIS equipment in use at sea.

12 The NAV Sub-Committee also recognised the need for continuous monitoring of the implementation of ECDIS and any issues that may arise. The work undertaken to date by the IHO was acknowledged.

13. IHB. The IHB is continuing to monitor the evolution and use of ECDIS and its associated standards, considering ways to resolve any future issues whenever they arise, and reporting progress to IHO Member States, to the IMO and to the wider maritime community.

Action required of HSSC

14. HSSC is requested to:

note this report,

consider if further practical measures can be taken by the IHO to ensure better coordination among the ECDIS stakeholder community and the provision of information to the mariner; and

take any other **action** as appropriate.