Guideline to the new IHO & IEC ECDIS Standards

Next generation ECDIS from Transas
Background

During the last years ECDIS has been more commonly used on SOLAS vessels and with the ECDIS Carriage requirement a majority of vessels will be equipped with ECDIS by the end of this decade. The development of ECDIS is an ongoing process based on user needs, technology achievements and need for improvement related to safety of navigation. The need to improve previously adopted ECDIS Standard was also recognized by the IMO «in order to ensure the operational reliability of such equipment and taking into account the technological progress and experience gained» and resulted in a revised performance standard for ECDIS MSC.232(82) adopted in December 2006. In the same way the related IEC test standards, as well as the IHO standards used for production and presentation of Electronic Navigation Charts (ENC) have been revised periodically.

A number of shortcomings, ECDIS anomalies and safety critical issues have been identified by users and as a result of accident investigations where improper use of ECDIS and ENC data were found to be a possible rote cause. Improper use can be caused by either operator or technical limitation in presentation of ENC data in ECDIS, or a combination of both.

Lessons were learned, problems understood and addressed in the latest revision of the ECDIS and Data standards. The work was timely coordinated between IEC and IHO and published in August 2015.
## The new standards

### IHO

<table>
<thead>
<tr>
<th>Specification/Reference</th>
<th>Edition/Date</th>
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<tbody>
<tr>
<td>Specifications for Chart Content and Display Aspects of ECDIS</td>
<td>S-52 Edition 6.1 - October 2014</td>
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<td>Presentation Library</td>
<td>S-52 Annex A Edition 4.0 - October 2014</td>
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<tr>
<td>Test Data Sets for ECDIS</td>
<td>S-64 Edition 3.0 - December 2014</td>
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<td>Data Protection Scheme</td>
<td>S-63 Edition 1.2 - January 2015</td>
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### IEC

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<tr>
<td>Electronic chart display and information system (ECDIS) - Operational and performance requirements, methods of testing and required test results</td>
<td>IEC 61174 Edition 4.0 - September 2015</td>
</tr>
<tr>
<td>Presentation of navigation-related information on shipborne navigational displays - General requirements, methods of testing and required test results</td>
<td>IEC 62288 Edition 2.0 - July 2014</td>
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What problems are addressed and what are the main benefits with next generation of ECDIS

IEC 61174 ed 4.0 address the following main areas

- Consistent use of symbols and abbreviations
- Alarm categorization
- Alarm visualization
- Reducing a number of audible alerts
- ECDIS default control settings
- Route exchange format «RTZ»
Set of new IHO standards address the following main areas

- New design of Chart object info functionality (Pick report) makes access to ENC chart information easier and understandable for user
- Reorganization of alert management resulting in less alarms being generated by ENC objects
  - Crossing navigational hazards (isolated dangers and aids to navigation) as well as areas with special conditions (TSS, anchorage areas, etc.) will generate only visible alarms now
  - Safety contours continue to create audible and visible alarms
- Standardized way of making ENC update status report will allow mariners and Port State Control inspectors to confirm that the ENCs installed in an ECDIS are up-to-date
- ECDIS viewing groups extension based on Mariner feedback for detailed control of ENC features
- Chart management and ENC status reports
- ENC test data sets
- Other modifications - new symbols, names of fairways and anchorage areas, highlighting ENC updates, date dependent objects, new chart display layers, and some more
When and how the new standards will come in force

The changes affect new type-approvals and installations after the normal «grace period» of 12-18 month based on the flag state rules starting from August 19, 2015.

It will also affect already installed ECDIS as the IHO has announced that the standard Ed. 6.0 of S-52, Ed. 3.4 of the Presentation Library and Ed. 2.0.0 of S-64 will be withdrawn from August 31, 2017.
What about the Grandfather Clause

Normally a system installed on a vessel is accepted based on the certification status on the date of installation during its entire lifetime, but in this particular case it is overruled as it will not comply with the following IMO requirement:

- MSC.232(82) applicable for all system installed after 1st of January 2009 states:

«4 PROVISION AND UPDATING OF CHART INFORMATION
4.1 The chart information to be used in ECDIS should be the latest edition, as corrected by official updates, of that issued by or on the authority of a Government, government-authorized Hydrographic Office or other relevant government institution, and conform to IHO standards.»

- SOLAS V/27 require that Nautical Charts shall be up to date.
  This requirement can be fulfilled using ECDIS according to SOLAS V/19.2.1.4 with up to date charts.

This means that from August 31, 2017 there will only be one IHO standard to conform to and consequently all ECDIS must be updated to comply with SOLAS V/27 Chart requirement.
The Transas way forward
A better version of what has been great already

Two things are important for Transas - Safety and Usability. Here we make no compromises!

Various features required by the new standards were already implemented in the Transas ECDIS. With additional feedback given by users and the shipping market stakeholders, we took a decision to invest in development of new generation ECDIS fully compliant with the latest standards from the IHO and the IEC. At the same time, we have included several product improvements like clearing bearings, anchor planning, improved user maps tool, and many more. The production of the new Transas ECDIS has started.

We believe this is the best way forward, not taking a shortcut and implementing minimal improvements by just addressing the chart carriage requirements in SOLAS.
Next Generation ECDIS from Transas

We are happy to inform that all ECDIS and Chart RADAR delivered by Transas starting from February 2016 will be compliant with the new standards. We will also launch an upgrade program where we offer a cost effective upgrade of already installed systems. Through our fit and function program we are ready to upgrade all systems in easy and cost-effective way, where in majority of cases only software needs to be updated. For systems delivered before 2009 only processor and software have to be replaced, and other components like keyboard, display and other accessories and cables can remain as they are.

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<tr>
<th>HW</th>
<th>SW</th>
<th>NS 2400</th>
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- **HW&SW upgrade**: Red
- **SW upgrade only**: Orange
- **System compliant**: Green
Please contact Transas for further information on necessary changes and individual offers