

IHO-EU NETWORK WORKING GROUP

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Relations with stakeholders of the EU Marine Equipment Directive to address the maintenance of software-based shipborne equipment (such as ECDIS)

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Executive Summary: This paper provides background information on how the EU Directive on Marine Equipment could foster the requirement that software-based shipborne equipment such as ECDIS be updated to the latest version of the relevant standards.

Related Documents: Minutes of IENWG-2

Introduction

1. At its 2nd meeting, the IENWG agreed to consider as a potential work item on how the EU Directive on Marine Equipment could foster the requirement that software-based equipment such as ECDIS be updated to the latest version of the relevant standards. The IHB representative agreed to draft a background paper for further consideration of the IENWG.

Presentation of the issues

2. Some of the operational difficulties associated with the implementation of ECDIS highlighted the lack of clarity on how software dependent equipment such as ECDIS should be dealt with. In particular, it appeared that clarification was required on the maintenance and updating of the operating system software and the application data rendering software, so as to comply with any change in the associated standards introduced after the date of type approval or/and after the installation of the equipment on board.

3. Two related circulars were developed by the International Maritime Organization (IMO) to provide guidance on procedures for updating shipborne navigation and communication equipment. Circular MSC.1/Circ.1389 (2010) provides generic guidance. Circular SN.1/Circ.266/Rev.1 (2007, revised in 2010) provides specific guidance related to the maintenance of ECDIS software. These circulars invite all parties (administrations, equipment manufacturers, ship owners and operators, ship masters) to ensure that adequate software maintenance are in place so that shipborne equipment is up to date with the latest requirements.

4. Circular SN.1/Circ.266/Rev.1 notes that "*ECDIS that is not updated for the latest version of IHO Standards may not meet the chart carriage requirements as set out in SOLAS regulation V/19.2.1.4*". This statement is related to SOLAS regulation V/27 which requires that nautical charts and nautical publications be "*adequate*" and "*up to date*". However, there is no explicit guidance or amplification relating to these terms when ECDIS is used to meet the chart carriage requirements.

5. In order to clarify the situation, the IMO Maritime Safety Committee agreed at its 90th session (2012) to include in the 2012-2013 biennial agenda of the Sub-Committee on Safety of Navigation (NAV) an unplanned output titled "*Development of explanatory footnotes to SOLAS regulations ... and V/27*", with a target completion year of 2014. A proposal was developed jointly by Australia, the United Kingdom, the International Hydrographic Organization (IHO), the Nautical Institute (NI) and the Comité International Radio-Maritime (CIRM) and submitted to the 59th session of NAV in 2013 (paper NAV 59/13). While a number of delegations supported, in principle, the inclusion of the proposed footnote, others were of the view that a footnote would be in conflict with the requirements of existing SOLAS regulation V/18.4, which states that "*... ECDIS shall conform to the relevant performance standards not inferior to those adopted by the Organization in effect on the date of installation....*" (NAV 59/20, paragraph 13.5). Further considerations at the subsequent first session of the new Sub-Committee

on Navigation, Communications and Search and Rescue (NCSR) in 2014 led to the conclusion that “*the best way forward*” (...) “*would be to amend the relevant SOLAS regulations*”, and the Sub-Committee invited “*interested member Governments to submit to the Committee proposals for a new unplanned output on the development of draft SOLAS amendments*” (NCSR 1/28, paragraph 7).

6. An additional difficulty relates to type approval. SOLAS regulation V/18.1 requires that “*Systems and equipment required to meet the requirements of regulations 19 and 20 shall be of a type approved by the Administration*”.

7. As indicated in IMO Circular MSC.1/Circ.1221 (2006), Type Approval is a certification scheme based on design appraisal, extensive testing and evaluation of manufacturing conditions of a type of product in compliance with the applicable specifications. Type Approval schemes are operated and certificates are issued by flag State Administrations, classification societies and other recognized bodies. The Type Approval scheme includes the following steps:

- a) engineering evaluation;
- b) witnessing the manufacturing and testing processes;
- c) evaluating the manufacturing arrangements; and
- d) after items a) through c) have been satisfactorily completed, issuing of a Type Approval Certificate for a specific type of product.

The Type Approval Certificate is generally valid for not more than 5 years, and may be subject to annual inspections or verification of the manufacturer’s process.

8. MSC.1/Circ.1221 states that a product manufactured during the period of validity of the relevant Type Approval Certificate “*need not be renewed or replaced due to expiration of such Type Approval Certificate*”. This may be understood as negating the recommendation that the product be updated for changes occurring after Type Approval. Moreover, views have been expressed that “if one drills a hole in a type approved box, the box is not covered by the original certificate anymore”.

The European dimension

9. In practice, most if not all type approval organizations (“Notified Bodies”) operate within the European Union and are subject to the European Marine Equipment Directive 96/98/EC as amended¹. The procedure described in the current Directive and in its subsequent version addresses the conformity with the relevant standards applicable at the time of the assessment. It does not set out any conditions to ensure that a software upgrade (1) is applied when appropriate and (2) does not compromise the Type Approval Certificate.

10. The European Marine Equipment Directive is under the responsibility of the Directorate-General for Mobility and Transport (DG MOVE - Directorate D - Logistics, maritime & land transport and passenger right).

11. The Notified Bodies assigned by the Member States to carry out the conformity assessment procedures referred to in the Marine Equipment Directive have set up a coordination group called MarED (<http://www.mared.org/>) which provides “*a framework for co-ordination and co-operation between its members, the Commission and observers in the application of the Marine Equipment Directive*”.

Recommendation

12. In order to promote the use of “adequate” and “up-to-date” charts in the context of the implementation of ECDIS and considering the leading role of the European Union in setting type approval procedures for marine equipment, it is recommended that the IENWG initiates consideration of the maintenance of software-based shipborne equipment in relation with type approval through DG MOVE and MarED, in liaison with national maritime Administrations as appropriate.

¹ The Directive 96/98/EC was amended in 1998, 2001, 2002 and annually from 2008 to 2012. It will be replaced by Directive 2014/90/EU on 18 September 2016 (<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014L0090>).