

SUB-COMMITTEE ON NAVIGATION,
COMMUNICATIONS AND SEARCH AND
RESCUE
9th session
Agenda item 16

NCSR 9/16/2
18 April 2022
Original: ENGLISH
Pre-session public release:

**REVISION OF ECDIS GUIDANCE FOR GOOD PRACTICE (MSC.1/CIRC.1503/REV.1)
AND AMENDMENTS TO ECDIS PERFORMANCE STANDARDS
(RESOLUTION MSC.232(82))**

Proposed amendments to MSC.1/Circ.1503/Rev.1

Submitted by China and CIRM

SUMMARY

Executive summary: This document discusses the general principle, procedures and documentation for onboard ECDIS updates to demonstrate ongoing compliance and proposes draft amendments to MSC.1/Circ.1503/Rev.1

*Strategic direction,
if applicable:* 7

Output: 7.14

Action to be taken: Paragraph 12

Related documents: MSC.1/Circ.1503/Rev.1; MSC 99/12/10; MSC 100/17/5 and NCSR 7/INF.20

Background

1 The Maritime Safety Committee (MSC), at its 100th session, considered document MSC 100/17/5 (China), proposing to revise *ECDIS - Guidance for good practice* (MSC.1/Circ.1503/Rev.1) with a view to improving the unified implementation of ECDIS type approval when approving ECDIS's software and relevant updates, and agreed to include in its post-biennial agenda an output on "Revision of ECDIS – Guidance for good practice (MSC.1/Circ.1503/Rev.1)", assigning the NCSR Sub-Committee as the coordinating organ, with two sessions to complete the item, in association with the III Sub-Committee, as and when requested by the NCSR Sub-Committee.

Introduction

2 As per SOLAS regulation V/27, all nautical charts necessary for the intended voyage shall be adequate and up to date. For ships using ECDIS to meet the chart carriage requirement of SOLAS, ECDIS software should be kept up to date such that it is capable of

displaying up-to-date electronic charts correctly according to the in-force version of IHO's chart content and display standards, i.e. in case IHO standards are amended, ECDIS installed on board may require, depending on the individual installation, updating of software.

3 According to SOLAS regulation V/18, ECDIS units being used to meet the chart carriage requirements on board ships must be type-approved, a certification process that ECDIS equipment must undergo before it can be considered as complying with IMO performance standards. The process is carried out by flag Administration-accredited type-approval organizations.

4 However, there is no internationally harmonized regulatory framework in place to enable an onboard ECDIS to demonstrate ongoing compliance with the applicable standards following hardware and/or software updates. Whether a new type of approval certificate (TAC) is needed or if any other document is acceptable, interpretation and practices vary worldwide. Document MSC 99/12/10 (China) identified, in particular, implementation difficulties caused by ECDIS software updates from a statutory survey perspective and document NCSR 7/INF.20 (China) provided preliminary analysis and considerations on the issues encountered in practice.

5 In light of the above, this document discusses the general principle, procedures and documentation for onboard ECDIS updates to demonstrate ongoing compliance and proposes draft amendments to MSC.1/Circ.1503/Rev.1.

Discussion

General principle

6 Onboard ECDIS updates can be put into two categories: (1) those required by a change to the in-force IHO standards, and (2) those initiated voluntarily by manufacturers, such as bug fix, customized functions, etc. No matter what updates these may be, a general principle would be that manufacturers should report every change in hardware and/or software to the type approval authority (TAA) and the TAA decides if and what level of testing and assessment is required in each individual case. The scope of testing depends on the required changes for compliance and should be agreed with the TAA.

Procedures and documentation

7 Depending on the judgement of the TAA, a testing and/or assessment or re-certification may be needed or not. For the purpose of reducing unnecessary administrative burden while ensuring that any change is assessed and approved, it is suggested that apart from issuing a new TAC, the TAA could choose to issue a Letter of Acceptance (LOA) to supplement the old TAC. At the same time, a Declaration of Conformity (DOC) should also be issued by the manufacturer, declaring the product concerned is in conformity with the requirements of the international instruments that apply to it.

8 The following procedures and documentation are suggested for different scenarios:

- .1 In the case that onboard ECDIS is required to be replaced or be updated to comply with a new version of IHO standards and the old TAC becomes invalid, the manufacturer applies for a type approval for such old ECDIS to be updated to meet the new IHO standards and the TAA should issue a new TAC or a LOA supplementing the old TAC. At the same time, a new DOC should consequentially be issued by the manufacturer.

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- .2 In the case that onboard ECDIS updates are initiated voluntarily by the manufacturer and reported to the TAA, and the TAA decides that the reported change(s) cannot be accepted under the existing TAC alone, either a LOA or a new TAC should be issued. A new DOC should be issued by the manufacturer accordingly.
 - .3 In the case that onboard ECDIS updates are assessed by the TAA to be of a minor nature, such as small bug fixes, the last digit of the IHO standards, etc. and no recertification is needed, the TAA should inform the manufacturer of the decision in writing and the manufacturer should keep a copy of the decision by TAA.

9 In order to facilitate onboard survey or inspection by various stakeholders and prove that an ECDIS update onboard is conformant, one of the following should be made available:

- .1 a new TAC with updated software and/or hardware details and new DOC; or
- .2 an old TAC supplemented by an LOA and a new DOC; or
- .3 an old TAC and DOC.

10 In this respect, manufacturers should provide a copy of the documents listed in paragraph 9 and an updated user manual, if applicable, to the ship to be carried on board until the equipment is removed from the ship and make available the written decision taken by the TAA regarding the minor changes as described in paragraph 8.3, if so requested. These may be achieved via a website as required by paragraph 16 of MSC.1/Circ.1503/Rev.1. In addition, manufacturers are encouraged to provide such information via a QR code, email or field engineer, so that port State control officers (PSCOs), surveyors and other stakeholders could have easier access to information in relation to the hardware/software update status of each equipment.

Proposals

11 Based on the above discussion, it is proposed that a new chapter B-1 on onboard ECDIS updates and a new appendix 4 listing examples be inserted in MSC.1/Circ.1503/Rev.1, as set out in the annex.

Action requested of the Sub-Committee

12 The Sub-Committee is invited to consider the proposals contained in paragraph 11 and take action, as appropriate.

ANNEX

PROPOSED AMENDMENTS TO MSC.1/CIRC.1503/REV.1

It is proposed that a new chapter B-1 and a new appendix 4 be inserted in MSC.1/Circ.1503/Rev.1 as described below.

B-1 ONBOARD ECDIS UPDATES

17.1 Prior to the onboard ECDIS units being updated, whether required to be compatible with the in force IHO standards or initiated by the manufacturer to improve functions or fix minor bugs, the manufacturer should notify the type approval authority (TAA) named on the type approval certificate (TAC) of any modification or changes to the equipment, together with the relevant information and technical documentation. Accordingly, after assessment, the TAA decides if and what level of additional testing is required in each individual case.

17.2 Depending on the assessment and judgement of the TAA:

- .1 if additional testing is needed and performed and conformity is demonstrated, the TAA should issue one of the following documents:
 - .1 a new TAC with the updated software and/or hardware details on it;
or
 - .2 a Letter of Acceptance (LOA) with the updated software and/or hardware details on it to supplement the old TAC.
- .2 if no additional testing is required and no new TAC or LOA is necessary, the TAA should inform the manufacturer of the decision in writing, via email or other means of notification.

17.3 In cases of paragraph 17.2.1 above, the manufacturer should issue a new declaration of conformity (DOC), declaring the product concerned is in conformity with the requirements of the international instruments that apply to it. When no new TAC or LOA is issued by the TAA as indicated in paragraph 17.2.2, the manufacturer should keep a copy of the written notification by the TAA. Examples of onboard ECDIS updates are listed in appendix 4.

17.4 To prove that an ECDIS update on board is conformant, one of the following should be made available:

- .1 a new TAC with the updated software and hardware details on it and new DOC;
- .2 the old TAC supplemented by an LOA and new DOC; or
- .3 the old TAC and DOC.

17.5 Manufacturers should provide a copy of the documents above and an updated user manual, if applicable, to the ship to be carried on board until the equipment is removed from the ship and make available the written decision taken by the TAA regarding the minor changes as described in paragraph 17-2.2, if so requested. In addition, such information should also be made available by the manufacturer using a website as required by paragraph 16.

17.6 Manufacturers are also encouraged to provide a copy of the documents listed in paragraph 17.4 to the ship via a QR code, email or field engineer. A QR code for each ECDIS unit would be particularly useful to provide easier access to information in relation to the hardware/software updates of each equipment.

Appendix 4

EXAMPLES OF ONBOARD ECDIS UPDATES

In the following, examples of onboard ECDIS updates and documentation are provided:

Example 1

The TAC lists the release number for software 5.03.xx and the current manufacturer software release number is 5.03.02 and is to be updated to 5.03.03.

Manufacturer Report: The manufacturer reports small bug fixes or changes for the last digit of the IHO standards.

TAA decision: The TAA decides that the reported changes are minor changes and do not need re-certification or LOA.

Documents provided: The old TAC, DOC
The software release number changes from 5.03.02 to 5.03.03 which is covered by 5.03.xx in the existing TAC.

Example 2

The TAC lists the release number for software 5.03.xx and the current manufacturer software release number is 5.03.02 and is to be updated to 5.04.00.

Manufacturer Report: The manufacturer reports additional functionality or changes in existing functionality.

TAA decision: The TAA decides that the changes are TAC relevant and requires additional testing and consequential re-certification.

Documents provided: New TAC, new DOC.
The software release number changes from 5.03.02 to 5.04.00 and 5.04.xx is taken over into the new TAC.

Example 3

The TAC lists the IHO standard edition 3.0.x and the current manufacturer IHO standard edition is 3.0.(1) and is required to be updated to edition 3.1.(0).

Manufacturer Report: The manufacturer reports updates to meet the latest IHO requirements.

TAA decision: The TAA decides that the changes are a major change and TAC relevant and requires retesting.

Documents provided: The old TAC supplemented by an LOA, new DOC.
The IHO standard edition changing from 3.0.(1) to 3.1.(0) is mentioned in the LOA.

Example 4

Manufacturer manufactures ECDIS with software version 5.0, and then changes the manufacturing to software version 6.0. The hardware remains unchanged. In this case a new TAC listing v6.0. xx replaces the previous TAC listing v5.0. xx.

Manufacturer Report: The manufacturer reports software updates from 5.0 to 6.0.

TAA decision: The TAA decides that the changes are a major change and TAC relevant and requires re-certification.

Documents provided: New TAC, new DOC.
The software release number changes from 5.0 to 6.0 in the new TAC.
