

COMPANY INTERNAL



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ECDIS Compliance Kongsberg Maritime Navigation product

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Document history

<i>Revision</i>	<i>Description of Change</i>
A	First Issue
B	Added table SW compability overview
C	Updated tables with SW compliance status
D	Corrected typo in figure 4
E	New IEC test Standard, new IHO standards and new SW compliance status

References

<i>No</i>	<i>Doc No</i>	<i>Description</i>
1	IMO Res. MSC.232(82)	IMO revised performance standard for ECDIS (2006)
2	SOLAS V/19.2.1.4	Chart carriage requirement of SOLAS chapter V Regulation 19.2.1.4
3	IMO Res. A.817(19)	IMO performance standard for ECDIS (1995)
4	MSC.1/Circ.1389	IMO Guidance on procedures for updating shipborne navigation and communication equipment.
5	SN.1/Circ.266	IMO Guidance on maintenance of ECDIS software.

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Definitions / Abbreviations

ECDIS	Electronic Chart Display and Information System
IMO	International Maritime Organization
SOLAS	International Convention for the Safety of Life at Sea
MSC	Maritime Safety Committee
SW	Software
ENC	Electronic Navigational Charts
OS	Operator Station
IHO	International Hydrographic Organization
IEC	International Electrotechnical Commission

1 Introduction

1.1 Purpose

This document is intended for Kongsberg Maritimes navigation customers as a guide on how to handle the new international rules and regulations regarding Electronic Chart Display and Information system (ECDIS), in compliance with the IMO requirements.

1.2 Background

On 1 January 2011 the amendments to SOLAS as adopted by IMO Resolution MSC.282(86) entered into force. These amendments included a number of changes to SOLAS Chapter V Safety of Navigation. Only the amendments regarding electronic chart display and information system is addressed in this document. Reference text from SOLAS is written in italic style and is unchanged from original text in SOLAS.

2 New normative ECDIS standards

In August 2015, the IEC published the fourth edition of the ECDIS test standard IEC 61174 Ed. 4.0. The International Hydrographic Organization (IHO) published at the same time a number of new editions and in particular the Presentation Library (PresLib) edition 4.0. The IHO has announced they will withdraw previous editions on the 31 August 2017 affecting both new and existing ECDIS systems. For more information, visit: http://www.iho.int/mtg_docs/enc/ECDIS-ENC_StdIn_Force.htm.

This means all Electronic Navigation Charts (ENC) that are produced and authorised by national hydrographic authorities that are members of the IHO will be according to the latest IEC and PresLib 4.0. To be able to update to ENC delivered with PresLib 4 the ECDSI must be compliant with latest IEC and PresLib 4.0. For more information about compliant Kongsberg ECDIS see Chapter 6 6 Guidance to KM ECDIS compliance.

3 Regulations

3.1 ECDIS meeting chart carriage requirement SOLAS V/19.2.1.4

ECDIS is now accepted, to meet the carriage requirements for nautical charts. SOLAS Chapter V Regulation 19.2.1.4 now reads as follows:

“All ships, irrespective of size, shall have nautical charts and nautical publications to plan and display the ship’s route for the intended voyage and to plot and monitor positions throughout the voyage. An electronic chart display and information system (ECDIS) is also accepted as meeting the chart carriage requirements of this subparagraph. Ships to which paragraph 2.10 applies shall comply with the carriage requirements for ECDIS detailed therein.”

3.2 ECDIS carriage requirement SOLAS V/19.2.10

ECDIS has become mandatory carriage requirement. The amended SOLAS Chapter V Regulation 19.2.10 reads as follow:

“2.10 Ships engaged on international voyages shall be fitted with an electronic chart display and information system (ECDIS) as follows:

- passenger ships of 500 gross tonnage and upwards constructed on or after 1 July 2012;
- tankers of 3,000 gross tonnage and upwards constructed on or after 1 July 2012;
- cargo ships, other than tankers, of 10,000 gross tonnage and upwards constructed on or after 1 July 2013;
- cargo ships, other than tankers, of 3,000 gross tonnage and upwards but less than 10,000 gross tonnage constructed on or after 1 July 2014;
- *passenger ships of 500 gross tonnage and upwards constructed before 1 July 2012, not later than the first survey^{*33} on or after 1 July 2014;*
- *tankers of 3,000 gross tonnage and upwards constructed before 1 July 2012, not later than the first survey^{*34} on or after 1 July 2015;*
- cargo ships, other than tankers, of 50,000 gross tonnage and upwards constructed before 1 July 2013, not later than the first survey^{*35} on or after 1 July 2016;
- cargo ships, other than tankers, of 20,000 gross tonnage and upwards but less than 50,000 gross tonnage constructed before 1 July 2013, not later than the first survey^{*36} on or after 1 July 2017; and
- cargo ships, other than tankers, of 10,000 gross tonnage and upwards but less than 20,000 gross tonnage constructed before 1 July 2013, not later than the first survey^{*37} on or after 1 July 2018.

3.3 Backup arrangement SOLAS V/19.2.1.5

SOLAS Chapter V Regulation 19.2.1.5 regarding backup arrangement for navigational charts. The new regulation reads as follow:

“All ships, irrespective of size, shall have: back-up arrangements to meet the functional requirements of subparagraph .4, if this function is partly or fully fulfilled by electronic means;²⁶”

Footnote 26 reads as follow:

“Refer to appendix 6, Back-up requirements, of Performance standards for electronic chart display and information systems (ECDIS) (resolution A.817(19), as amended). An appropriate folio of paper nautical charts may be used as a back-up arrangement for ECDIS. Other back-up arrangements for ECDIS are acceptable.”

Resolution MSC.232(82), Appendix 6 “Back-up Requirements” does not specify acceptable alternatives. Approval by the vessel’s Flag State will be necessary if alternative back-up arrangements are to be used. Depending on the Flag State’s agreement, such arrangements may include:

- An ECDIS system using ENC’s with an independent power supply
- An appropriate folio of corrected up to date paper charts for the present voyage
- A Chart Radar (Kongsberg DB10 and K-Bridge Radar are approved Chart Radar’s).

4 Mandatory ECDIS implementation

IMO has set out a timeline for vessels engaged on international voyages to be fitted with an ECDIS using Electronic Navigation Charts ENC. Below in Figure 1 you can find a graphical presentation of compliance dates for different vessel types and size.

MSC.1/Circ.1290 defines the term “first survey” as being “the first annual survey, the first periodical survey or the first renewal survey whichever is due first after the date specified in the relevant regulation or any other survey if the Administration deems it to be reasonable and practicable, taking into account the extent of repairs and alterations being undertaken. For a ship under construction, where the keel is laid before, but the ship is delivered after, the date specified in the relevant regulation, the initial survey is the first survey.”

There is no requirement for existing cargo ships (other than tankers) of less than 10,000 GT to be fitted with ECDIS.

Flag States may also exempt a vessel from complying with the requirements if it is to be taken out of service permanently within two years of the applicable implementation date.

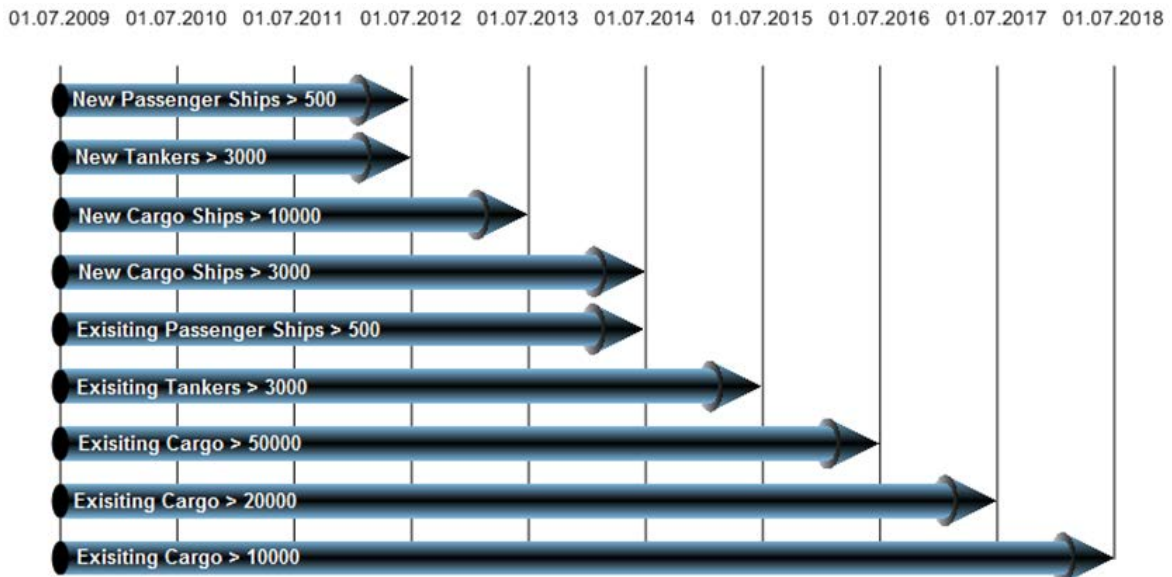


Figure 1. ECDIS implementation

5 Performance standard for ECDIS

Resolution A.817(19) Performance Standards for Electronic Chart Display and Information Systems (ECDIS) has been superseded by Resolution MSC.232(82) which lists revised performance standards.

On 7 December 2010, IMO issued a circular (MSC.1/Circ.1389) This circular was in relation to procedures for updating software for Navigation & Communication Equipment. This gave reference to another circular also dated 7 December 2010 (SN.1/Circ.266/Rev.1), which is specific for the maintenance of the ECDIS Software. In particular this refers to the need to maintain the IHO standards for ENC datasets used by the ECDIS.

In the Annex 3, it states that ECDIS that is not updated for the latest version of the IHO Standards may not meet the Chart Carriage Requirements as set out in SOLAS regulation V/19.2.1.4

The ENC dataset used by Kongsberg Maritime in ECDIS SW must always be up to date with the latest IHO standards.

6 Guidance to KM ECDIS compliance

K-Bridge

7.1.5 or higher is compliant with latest IEC and PresLib 4.0

7.0.0-7.1.4 need software update to be compliant with latest IEC and PresLib 4.0

3.0.0-6.2.0 need software and hardware update to be compliant with latest IEC and PresLib 4.0

K-NAV

7.1.5 or higher is compliant with latest IEC and Presentation Library 4.0

7.0.0-7.1.4 need software update to be compliant with latest IEC and PresLib 4.0

Bridgeline 10

Bridgeline 10 system need new K-Nav ECDIS operator station to be compliant with the latest IEC and PresLib 4.0

Other system

Kongsberg Maritime offer refit to K-Nav ECDIS system to get compliant with the latest IEC and PresLib 4.0

Details

For more detailed information, see table on the next pages. For other information or support please contact Kongsberg Maritime customer support.

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K-Bridge ECDIS Compliance													
ECDIS software version	IHO S-52 Preslib Edition	IHO S-57 Edition	IHO S-63 Edition	IHO S-64 Edition	IHO (RNC) S-61 Edition	IMO ECDIS Performance Standard	IEC ECDIS Test Standard	IEC DISPLAY Test Standard	Other	C-Map SDK version	Navtor SDK Version	IHO 2015 Test Compliant	Operating System
K-Bridge ECDIS 4.0.1-4.0.4	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	4.3.2 or 4.5 or 4.6		No	Windows XP
K-Bridge ECDIS 4.0.5	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	4,6		No	Windows XP
K-Bridge ECDIS 5.1.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	4,6		No	Windows XP
K-Bridge ECDIS 5.2.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	4,6		No	Windows XP
K-Bridge ECDIS 5.3.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	5.2		No	Windows XP
K-Bridge ECDIS 6.0.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	4,6		No	Windows XP
K-Bridge ECDIS 6.1.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	5,2		No	Windows XP
K-Bridge ECDIS 7.0.x	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	5.2		No	Windows 7
K-Bridge ECDIS 7.1.0 – 7.1.4	3.4	3.1	1.1	1.1	1.0	MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	5.2	1.5	No	Windows 7
K-Bridge ECDIS 7.1.5	4.0	3.1	1.2	3.0	1	MSC.232(82)	61174 Ed.4.0	62288 Ed.2.0	ECDIS Backup (dual) + Multifunction Display	6.0	2.0	Yes	Windows 7
K-Bridge ECDIS 8.x.x	4.0	3.1	1.2	3.0	1	MSC.232(82)	61174 Ed.4.0	62288 Ed.2.0	ECDIS Backup (dual) + Multifunction Display	6.0	2.0	Yes	Windows 7

Figure 2. K-Bridge ECDIS compliance

K-Nav ECDIS Compliance													
ECDIS software version	IHO S-52 Preslib Edition	IHO S-57 Edition	IHO S-63 Edition	IHO S-64 Edition	IHO (RNC) S-61 Edition	IMO ECDIS Performance Standard	IEC ECDIS Test Standard	IEC DISPLAY Test Standard	Other	C-Map SDK version	Navtor SDK Version	IHO 2015 Test Compliant	Operating System
K-Nav ECDIS 7.1.5	4.0	3.1	1.2	3.0	1	MSC.232(82)	61174 Ed.4.0	62288 Ed.2.0	ECDIS Backup (dual) + Multifunction Display	6.0	2.0	Yes	Windows 7
K-Nav ECDIS 8.x.x	4.0	3.1	1.2	3.0	1	MSC.232(82)	61174 Ed.4.0	62288 Ed.2.0	ECDIS Backup (dual) + Multifunction Display	6.0	2.0	Yes	Windows 7

Figure 3. K-Nav ECDIS compliance

BridgeLine10™ ECDIS Compliance													
ECDIS software version	IHO S-52 Preslib Edition	IHO S-57 Edition	IHO S-63 Edition	IHO S-64 Edition	IHO (RNC) S-61 Edition	IMO ECDIS Performance Standard	IEC ECDIS Test Standard	IEC DISPLAY Test Standard	Other	C-Map SDK version	IHO 2011 Test Compliant	Operating System	
SeaMap10 ECDIS 2.1 - 2.9	3.2	3.0	-	-	-	A.817(19)	61174 Ed.1.0	-		3.2	No	Windows NT	
SeaMap10 ECDIS 2.10 -	3.2	3.0	1.0	-	-	A.817(19)	61174 Ed.2.0	-		3.4	No	Windows NT	
SeaMap10 ECDIS 3.1 - 3.2	3.2	3.0	1.0	-	-	A.817(19)	61174 Ed.2.0	-		3.5 or 3.6	No	Windows NT or XP	
SeaMap10 ECDIS 3.3	3.2	3.0	1.0	-	-	A.817(19)	61174 Ed.2.0	-		3.5 or 3.6	No	Windows NT or XP	
SeaMap10 ECDIS 4.1.1	3.4	3.1	1.1	1.1	1.0	A.817(19) / MSC.232(82)	61174 Ed.3.0	62288 Ed.1.0	ECDIS Backup (dual) + Multifunction Display	5.2	No	Windows XP	

Figure 4. BridgeLine10™ ECDIS compliance