

PORT STATE CONTROL COMMITTEE INSTRUCTION 51/2018/12

Guidance for Port State Control Officers Checking Compliance of Electronic Chart Display and Information Systems (ECDIS)

1. Introduction

1.1 Goals and Purpose

The purpose of this instruction is to provide concise and practical guidance to achieve a harmonized approach to Port State Control inspections on vessels using ECDIS as primary means of navigation (PMN)¹.

1.2. Application

PSC on ECDIS may be executed on ships where:

- carriage is mandated by SOLAS and its mandatory Codes (see Annex A); or
- it has been voluntarily fitted and is noted on the Record of Equipment (RoE) attached to the ship's Safety Certificate². Where an ECDIS has been voluntarily installed only as a navigational aid to enhance situational awareness, it may not be listed on the RoE and would only be considered as an ECS.

1.3. SOLAS Regulations

SOLAS Chapter V Regulation 19.2.1.4 states:

*"an electronic chart display and information systems (ECDIS) **is also accepted** as meeting the chart carriage requirement..."*

See Annex A for ECDIS implementation schedule for various classes and sizes of vessels engaged on international voyages based on construction date with implementation commencing 1 July 2012

Since the primary Regulation related to ECDIS has itself clarified it, from January 2011 there is no requirement for a Letter of Equivalence (LoE). Some vessels may be still carrying old LoEs, however, that is no more relevant from the PSC perspective.

1.4 List of References/Relevant documentation

Mandatory

SOLAS Chapter V, Safety of Navigation - Regulations 2, 19 and 27;
Chapter IX, *Management for the Safe Operation of Ships*; and
Chapter X, *High-Speed Craft (HSC)*, and HSC Codes 1994, 2000.

STCW Part A – The Code detailing: Mandatory standards regarding provisions of the annex to the STCW Convention.

1.5 Definitions and abbreviations

The PSCC Instruction containing "Definitions and Abbreviations", serves as general document and is to be used in conjunction with this Paris MoU Instruction.

¹ PMN is to imply provision of compliance with SOLAS Ch V/19.2.1.4 and V/27; and commensurate chart and nautical publications requirements of mandatory codes, such as the High-Speed Craft Code(s).

² Cargo Ship Safety Equipment Certificate (Form E), Passenger/Cargo Ship Safety Certificate (Form P/C).

2. Inspection

As per current ECDIS regulations, the PSCO may consider inspections to fall under two categories:

- (i) Inspection of vessels fitted with ECDIS to meet the carriage requirement:
This is applicable to vessels covered by the carriage requirement from the date of implementation (see Annex A for schedule); these vessels will have been duly Certificated by the flag State to ensure compliance.
- (ii) Inspections of vessels having fitted ECDIS voluntarily: This includes vessels which:
 - will be covered by the carriage requirement at some time after 1 July 2012 but have voluntarily fitted ECDIS prior to their due date; and
 - vessels which will not have to comply with the carriage requirement but choose to fit ECDIS voluntarily.

For both of the above cases it is important to verify and seek evidence that the ECDIS is duly "type approved"³ through compliance with the IMO performance standards and the current IEC⁴ and IHO⁵ test standards thereto (refer Annex C).

2.1 Initial Inspections of vessels with mandatory fit of ECDIS

2.1.1 Determine, based on date of construction, gross tonnage and type of vessel, whether an ECDIS is required (see Annex A).

2.1.2 The PSCO should check that the RoE (Form P, E or C) attached to the Safety Certificate appropriately records ECDIS as fitted and indicates the backup system being deployed.

2.1.3 To fulfil carriage requirements, the ECDIS, in accordance with Annex C of this Instruction, must be loaded with current and updated Electronic Navigational Charts (ENC).

This may be achieved through inspection of the ECDIS and may also be verified with the vessel's records or other documentation. eg valid ENC Permits, ENCs and Raster Navigational Charts (RNC) are, by IMO definition, "issued officially by or on behalf of a Government..." - see Annex E, section 3 for details.

PSCO may seek confirmation that:

- official ENCs, are being used; and
- regular updates are being supplied to the vessel and incorporated by the ship's crew.

If non-official charts are installed and are in use for voyage planning on ECDIS, then it is operating in Electronic Chart System (ECS) mode and is not compliant.

2.1.4 The correct functioning of the ECDIS system and availability of the backup should be confirmed through checks demonstrable by the watchkeeping officers.

³ Type approval is the certification process that equipment must undergo before it can be considered as complying with the relevant IMO performance standards, as per SOLAS V/18.

⁴ International Electrotechnical Commission

⁵ International Hydrographic Organization

2.2 Initial Inspections of voluntarily fitted vessels

2.2.1 Where the PSCO is informed that the vessel is fitted or operating with an approved ECDIS, then, after the Safety Certificate check, the PSCO shall verify that:

- this is recorded in the appropriate part of the RoE; or
- whether System is being used to aid situational awareness in which case up-to-date paper nautical charts must be used to fulfil the carriage requirements as PMN.

2.2.2 Where the PSCO does not find enough evidence that the ECDIS being used is SOLAS compliant as duly type approved equipment, then the PSCO should make a final check for flag State or RO confirmation of compliance.

In the absence of any evidence the PSCO should:

- assume that the electronic charting present on the vessel is not an ECDIS and cannot fulfil SOLAS requirements and, therefore,
- carry out standard check for a vessel using paper charts as the PMN (i.e. an adequate portfolio of paper charts is available, is being maintained and is being used for voyage planning and monitoring).

2.2.3 Where the ECDIS is being used only as a navigational aid for situational awareness, the requirement to use paper charts as PMN must be made clear, through the bridge procedures, to watchkeeping officers.

3. Possible Checks

The PSCO may ask a watchkeeping officer to demonstrate:

- a. That the ECDIS and associated position sensor(s) are in working condition (e.g. match the vessel position coordinates on display against the berth);
- b. That appropriate and adequately updated charts are loaded, evidenced by comparing ENCs with latest available updates via notices to mariner issued by the chart authority;
- c. That the ECDIS application software is maintained and kept updated to the latest International Hydrographic Office (IHO) standards, by looking up System reference to the 'Presentation Library'⁶ (refer Annex C);
- d. That a voyage plan for previous and/or next passage can be displayed;
- e. Familiarity with the use of ECDIS and transfer to backup system;
- f. The backup system listed in RoE is functional/available; and
- g. That required nautical publications are being carried and updated.

4. Clear grounds for more detailed inspection

A list of clear grounds for a more detailed inspection could be, but is not limited to:

- a. Clear evidence of system malfunction (e.g. error in sensor inputs, as in 5.1.b below);
- b. ECDIS not loaded with official ENCs, or ENC updates not being applied;
- c. ECDIS backup is not functional (failure of secondary electronic system) or where paper charts are noted on RoE as backup but are not available or updated;
- d. Required nautical publications are not available or have not been updated;
- e. Watchkeeping officer is unable to demonstrate basic proficiency in use of the installed ECDIS.

⁶ The appearance and content of the chart data displayed on ECDIS is generated as per the specifications characterised by the IHO Presentation Library, as covered in their standard, S-52.

5. More Detailed Inspection

Where clear grounds exist, a more detailed inspection should be conducted by the PSCO. Evidence may be gained by conducting further checks and from examination of documentation/certificates.

5.1 ECDIS equipment

- a. If the status of the system is in doubt check for a valid ECDIS type approval certificate;
- b. Check display of the required sensor/system inputs where available (i.e. SDME⁷, THD⁸ and EPFS⁹);
- c. Confirm ECDIS, and the SDME, THD and EPFS, can be operated from an emergency source of electrical power;
- d. Check maintenance log/ schedule to verify upkeep of the system.

5.2 ECDIS Backup

SOLAS Regulation (Chapter V Regulation 19.2.1.5) requires facilities for a safe take-over of ECDIS functions in the event of ECDIS failure to avoid a critical situation developing and a backup arrangement that provides a means of safe navigation for the remaining part of the voyage. The most commonly accepted backups are a second ECDIS or an appropriate portfolio of paper charts.

However, as allowed within the performance standards, flag States may accept an alternative solution (e.g. Chart Radar with official ENC's); this should be specified on the RoE.

Check that the watchkeeping officer knows the procedures for the transfer to the backup system in event of primary system failure.

5.2.1 Where an electronic backup is specified confirm that:

- a. it is operational;
- b. the power supply is separate from the primary ECDIS;
- c. appropriate and updated charts are installed; and
- d. a (current/future) voyage plan can be displayed.

5.2.2 Where paper charts are used as backup to ECDIS confirm that:

- a. adequate charts for the intended voyage are available;
- b. a (current/future) voyage plan has been incorporated; and
- c. the charts have been updated from appropriate notices to mariners.

5.3 With regard to the Electronic Charts:

- a. Confirm that the ECDIS is 'loaded with official ENC's'¹⁰;
- b. Confirm that installed or available ENC coverage is adequate for the intended voyage;
- c. Confirm that procedures are in place for ensuring that ENC updates are applied timely; and
- d. Confirm that ENC's have been updated for corrections or amendments that have been issued.

5.4 Training - Proficiency in the use of ECDIS

Amended provisions (Manila amendments) to STCW'78, which came into force from 1 January 2012, do not require deck officers to have specific endorsements, on their certificate of competency, related to ECDIS training. (See Annex F)

⁷ Speed and distance measuring equipment – commonly known as Speed Log.

⁸ Transmitting heading device – normally a gyro compass.

⁹ Electronic position fixing system – normally one of the Global Navigation Satellite Systems receiver, eg. GPS.

¹⁰ RNC's may be accepted where ENC's have not been issued – see further information in Annex E

The ECDIS requirements are part of the competency tables in the STCW Code Part A and are not, as such, standalone courses e.g. fire fighting. Because they are already part of the tables for knowledge understanding and proficiency, thus a **Certificate of Competency is prima facie evidence of compliance with ECDIS.**

Note: there is no provision in STCW for a separate CoC, CoP or documentary evidence of training for ECDIS, but some Administrations and/or training providers do issue a certificate to show that the relevant training has taken place.

Additionally in accordance with Regulation 1/14 they should have undergone familiarisation process/training with the onboard system.

Given this background where the vessel is fitted with approved ECDIS the PSCO may check/determine:

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- if navigational watchkeeping officers demonstrate adequate operational competence in using the installed system.

The PSCO should:

- Confirm that a randomly selected officer of the watch is able to undertake basic tasks expected during watchkeeping (e.g. select charts, change scale, can explain the meaning of symbols displayed, can call up and is able to insert or amend a waypoint in a route); and
- Confirm that at least one deck officer is able to demonstrate how to install and/or verify official ENC updates.

5.5 Nautical Publications

ENCs, at present, do not contain much of the information covered in nautical publications and ECDIS is generally not able to display details off the digital nautical publications that are available. All vessels, therefore, will need to carry appropriate official nautical publications in paper or digital form. See "Carriage of Nautical Publications" in Annex E Page 16.

Additionally:

- a. confirm that appropriate nautical publications are held and are updated for notice to mariners; and
- b. where digital publications are being used, confirm this is as recorded on the RoE and that a suitable backup arrangement, as approved by the flag State, is in place.

6. Reporting

Each technical or operational deficiency found should be recorded individually. Where there is any doubt as to the compliance with SOLAS Chapter V requirements by the vessel, the PSCO should contact the flag State in order to clarify them.

7. FOLLOW UP ACTION

List of Possible deficiencies - see Annex D

Annex A

SOLAS Carriage Requirement for ECDIS

On 1 January 2011 the amended text of SOLAS V Regulation 19, *Carriage requirements for shipborne navigational systems and equipment*, as set out below came into force:

“

“19.2.10 Ships engaged on international voyages shall be fitted with an Electronic Chart Display and Information System (ECDIS) as follows:

- .1 passenger ships of 500 gross tonnage and upwards constructed on or after 1 July 2012;
- .2 tankers of 3,000 gross tonnage and upwards constructed on or after 1 July 2012;
- .3 cargo ships, other than tankers, of 10,000 gross tonnage and upwards constructed on or after 1 July 2013;
- .4 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;
- .5 passenger ships of 500 gross tonnage and upwards constructed before 1 July 2012, not later than the first survey¹¹ on or after 1 July 2014;
- .6 tankers of 3,000 gross tonnage and upwards constructed before 1 July 2012, not later than the first survey on or after 1 July 2015;
- .7 cargo ships, other than tankers, of 50,000 gross tonnage and upwards constructed before 1 July 2013, not later than the first survey on or after 1 July 2016;
- .8 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 on or after 1 July 2017; and
- .9 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 on or after 1 July 2018.

2.11 Administrations may exempt ships from the application of the requirements of paragraph 2.10 when such ships will be taken permanently out of service within two years after the implementation date specified in subparagraphs .5 to .9 of paragraph 2.10.”

High-Speed Craft Code 2000 paragraph 13.8.2, and commensurate for HSC Code 1994, complete the SOLAS carriage requirements, as below:

“High-speed craft (HSC) shall be fitted with an ECDIS as follows:

- .1 craft constructed on or after 1 July 2008;
- .2 craft constructed before 1 July 2008, not later than 1 July 2010.”

¹¹Refer to the unified interpretation of the term “first survey” referred to in SOLAS regulations (MSC.1/Circ.1290).

Ship	Gross Tonnage	1 July 2012	1 July 2013	1 July 2014	1 July 2015	1 July 2016	1 July 2017	1 July 2018
Passenger ships – constructed on or after 1 July 2012	≥500 GT							
Tankers - constructed on or after 1 July 2012	≥3,000 GT							
Cargo ships other than tankers - constructed on or after 1 July 2013	≥10,000 GT							
Cargo ships other than tankers - constructed on or after 1 July 2014	≥3,000 GT but < 10,000 GT							
Passenger ships - constructed before 1 July 2012	≥500 GT							
Tankers - constructed before 1 July 2012	≥3,000 GT							
Cargo ships other than tankers - constructed before 1 July 2013	≥50,000 GT							
Cargo ships other than tankers - constructed before 1 July 2013	≥20,000 GT but < 50,000 GT							
Cargo ships other than tankers - constructed before 1 July 2013	≥10,000 GT but < 20,000 GT							

ECDIS carriage implementation schedule

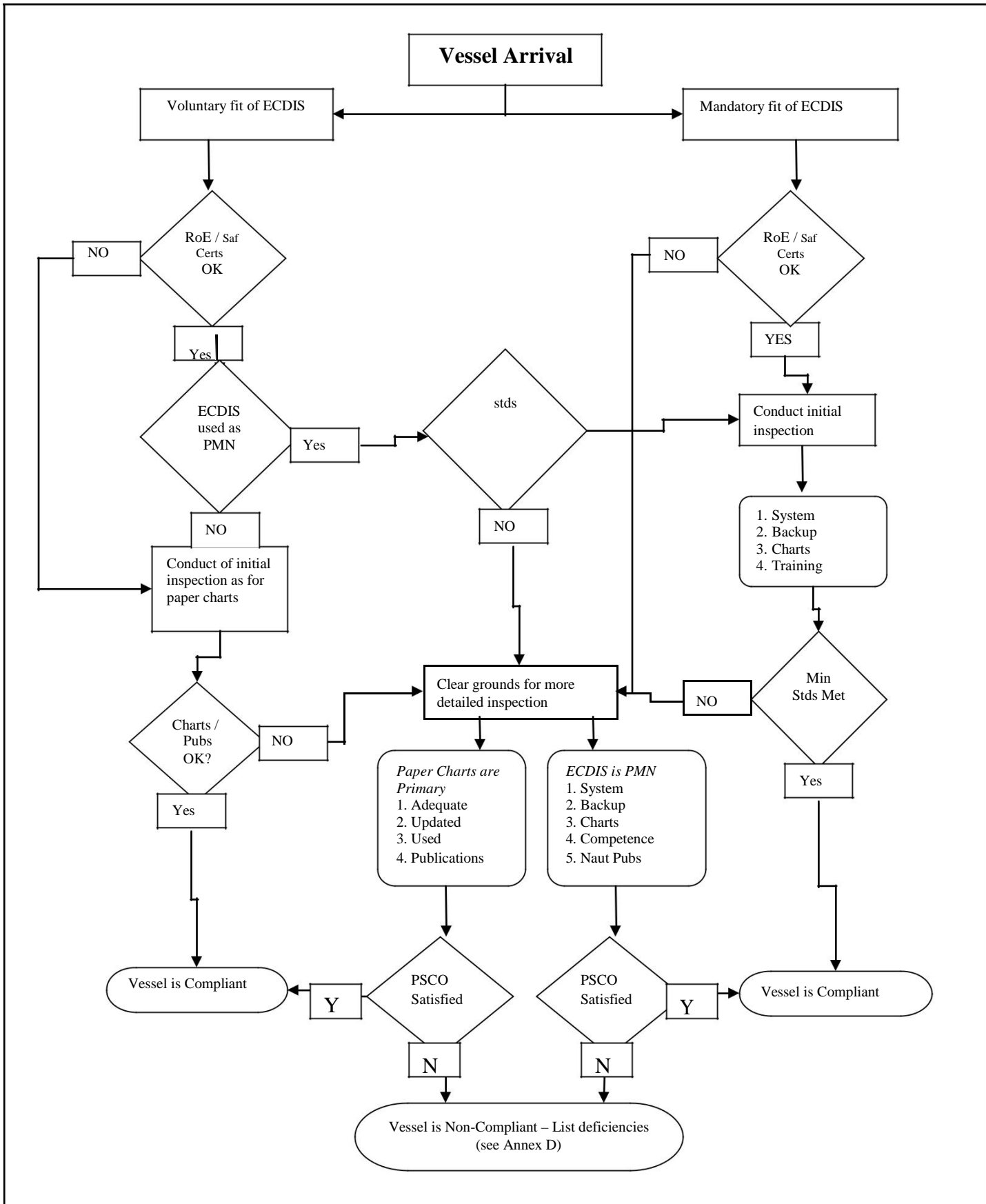
Note 1: There is no requirement for mandatory fit of ECDIS for cargo ships other than tankers less than 10,000 GT constructed before 1 July 2014.

Note 2: *Constructed* in respect of a ship means a stage of construction where:

- .1 the keel is laid; or
- .2 construction identifiable with a specific ship begins; or
- .3 assembly of the ship has commenced comprising at least 50 tonnes or 1% of the estimated mass of all structural material, whichever is less.

Annex B

Flowchart to assist in checking ECDIS compliance



Annex C

ECDIS Compliance

ECDIS in operation comprises hardware, software and data. It is important for the safety of navigation that the application software within the ECDIS works fully in accordance with the Performance Standards and is capable of displaying all the relevant digital information contained within the ENC.

Summary

For the vessel to use ECDIS as the PMN it must comply with IMO requirements for four fundamental elements: system (hardware and software), charts, back-up and proficiency of use (training).

1. ECDIS Equipment:

- Hardware, *including operating system software*:
 - must be type approved and fitted as per the requirements of the IMO ECDIS performance standards (the listing of ECDIS on the RoE provides evidence of this).
 - if installed on or after 1 January 2009, conform to performance standards not inferior to those specified in the Annex to IMO Resolution MSC.232(82); and
 - if installed on or after 1 January 1996 but before 1 January 2009, conform to performance standards not inferior to those specified in the Annex to resolution A.817(19), as amended by resolutions MSC.64(67) and MSC.86(70).
- Software, *i.e. the application software producing chart displays* (
 - The latest applicable IHO standards in force from 1 September 2015, are as below;

<u>S-52 Edition 6.1(.1)</u>	Chart Content and Display Aspects of ECDIS
<u>PresLib Edition 4.0(.1) (Annex A to S-52)</u>	Presentation Library for ECDIS
<u>S-64 Edition 3.0.1</u>	Test Data Sets for ECDIS

- All ECDIS type approved on or after 1 September 2015 would require to comply with above IHO standards, *as a minimum this would mean PresLib Ed.4.0 loaded*;
- All ECDIS type approved before 1 September 2015, *who as a minimum should have PresLib Ed. 3.4 loaded*, would require to comply with above IHO standards by First Survey (ref. MSC.1/Circ.1290) after 31 August 2017.

2. ENCs (or RNCs where applicable) must be loaded in ECDIS and be up-to-date..
3. A functioning backup system (electronic or paper nautical chart - based) must be available.
4. Watchkeeping officers should be conversant with the ECDIS in use.

List of possible deficiencies, (not exhaustive) and Convention references, are as below:

THETIS Group	THETIS Code	Convention Reference	Comment
Charts ECDIS (Backup – paper charts)	10111	SOLAS 2009 Amend Chapter V R19.2.1; SOLAS 1999/2000 Amend V R27	Relevant where paper charts are being used as PMN or as a backup to ECDIS Consider as for a vessel using paper charts as PMN but flag State may only require a selection of paper charts to be carried rather than a full folio
ECDIS (Electronic Charts) ECDIS (System) ECDIS (Backup - electronic)	10112	SOLAS 2009 Amend Chapter V R19.2; SOLAS 1999/2000 Amend V R27	Officially issued charts (ENC/RNC) not being used or not updated RoE incorrect, or more detailed investigation shows it is not a type approved system or is not installed correctly; Outdated IHO standards being used within the system software Electronic backup not installed correctly (power supply), not functioning; appropriate charts not loaded or not updated.
Training	10133	STCW A-VIII/2/part 3	There is no evidence that watchkeeping officers comply with STCW requirements.

Annex D

List of Possible deficiencies

Def. Code	Group	Nature of defect	Delay action taken	Equip	Detain able	RO related	Convention Reference
10111	Charts (Paper charts used as PMN or as backup to ECDIS)	Missing, expired, not up-to-date.	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State or class condition, Master instructed to ...	Yes	Yes	Yes	SOLAS 2009 Amend Chapter V R19.2.1; SOLAS 1999/2000 Amend V R27
10112	Electronic Charts (ECDIS) (ENCs, backup)	Not as required, inoperative, not approved, not up-to-date Unable to update (expired licence)	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State or class condition, Master instructed to ...	Yes	Yes	Yes	SOLAS 2009 Amend Chapter V R19.2.1; R19.2.10; SOLAS 1999/2000 Amend V R27
10116	Nautical Publications	Missing, expired, not updated	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State/ class condition, Master instructed to ...	Yes	Yes	Yes	SOLAS 2009 Amend Chapter V R19.2.1; SOLAS 1999/2000 Amend V R27
10133	Bridge Operation	Lack of training, lack of familiarity	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State or class condition, Master instructed to ...	No	Yes	No	SOLAS 99/00 Amend Chapter V R26 STCW A-VIII/Reg VIII/2 STCW A-VIII/2/ pt 3
10135	Monitoring of voyage or passage plan -	Incomplete, not as required	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State or class condition, Master instructed to ...	No	Yes	No	SOLAS V R 34;; STCW A-VIII pt 2

Def. Code	Group	Nature of defect	Delay action taken	Equip	Detainable	RO related	Convention Reference
10102	Type approval equipment	Not approved, not as required	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed class condition, As in the agreed Flag State condition, Master instructed to ...	Yes	Yes	No	SOLAS V R18.1; 18.2 SOLAS 2010 Amend / Chapter V / Reg. 18
10199	Other (navigation)	Other (No procedures)	Rectified, At the next port, Within 14 days, Before departure, At an agreed repair port, As in the agreed Flag State or class condition, Master instructed to ...	No	Yes	No	As appropriate

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Annex E

Further Information

1. Hardware / system

ECDIS is often installed as a component part of an Integrated Navigation System (INS) rather than as a stand-alone piece of equipment. In these circumstances there are likely to be 3 or 4 consoles/display screens. These can either be dedicated as a single function (e.g. RADAR, ECDIS or ship conning control) or acting as multi-function displays where a single console can be used to display any one of these functions.

ECDIS systems have a minimum chart display area of 270x270mm and normally face forward as part of (or integrated in) the bridge consol.

If the RoE, attached to the Safety Certificate, states that ECDIS is installed then it can be assumed that the system has appropriate type approval and has been installed in accordance with IMO requirements. A PSCO should only need to check on the type approval certificate of the system if alerted to a specific issue (e.g. a desktop or laptop computer on a chart table referred to as the ECDIS or backup ECDIS).

Maintenance of equipment:

SOLAS Chapter V Regulation 16 – Maintenance of Equipment, can be quite adequately applied to a complex hardware and software based system such as the ECDIS. The regulation requires that there are adequate arrangements in place to ensure that the performance of navigational equipment required by SOLAS Chapter V is maintained. In case of deficiencies, evidence of the record of maintenance of the defective equipment should be readily available.

2. Backup system

The ECDIS Performance Standards (Appendix 6 of MSC 232(82)) require that vessels using ECDIS as the PMN must have approved backup arrangements to ensure a safe transfer of the ECDIS functions in the event of ECDIS failure and to provide safe navigation for the remaining part of the voyage. The backup has only been specified in functional terms.

The two most commonly accepted backup arrangements are either a second, independently powered, ECDIS or a portfolio of paper charts. Other solutions that may be accepted by a flag State e.g. a chart radar or a high specification electronic chart system (ECS) using official chart data (ENCs where available).

An ECS classified as “Class A” through testing to International Standard IEC62376 may be specified by the flag State as meeting the backup requirements for ECDIS. Such systems may not be used as the PMN to comply with the SOLAS chart carriage requirement.

3. Charts and Publications

“ECDIS must be loaded with official electronic chart data, ENC where available or RNC where it is not. If other electronic chart data is loaded then the ECDIS is operating in an ECS mode and does not meet carriage requirements. ECDIS fitted to a vessel subject to the mandatory carriage requirement must install official ENCs even if the flag State has allowed the system to be used as a secondary aid to navigation. Where an electronic system has been fitted as a backup to ECDIS this must also use official ENCs.

SOLAS Chapter V Regulation 27 requires vessels to carry nautical charts and publications ‘necessary for the intended voyage’ and that these shall be ‘adequate and up-to-date’. In relation to ECDIS this means the system must be loaded with adequate official ENCs of an appropriate scale for the voyage and have been updated for notices to mariner updates. These updates will have been supplied either on hard media (CD or DVD) or by remote communications (email or web download).

The coverage of ENC's has increased significantly since 2002 and is complete for all but a few areas within the Paris MoU region, however there are still a few areas around the world where ENC's have not yet been issued. To navigate with ECDIS in these areas Raster Navigational Charts (RNC's) may be used; however the IMO ECDIS Performance Standards stipulate that an appropriate portfolio of up-to-date paper charts must be carried to supplement the RNC's to overcome the differences with ENC's.

There are a number of service providers who supply electronic charts to vessels; the media and documentation provided to the vessel should clearly state whether the charts are official ENC's and meet IMO requirements. The base charts are normally supplied on CD or DVD and ENC updates are issued regularly either on hard media or via remote communications. The majority of ENC's are supplied in encrypted form under a licence agreement for a fixed time period. Service providers commonly issue 'permit' keys for those charts licensed; these permits have a fixed period of validity. ECDIS systems should provide a warning if the licence period is within one month of expiry; ENC's continue to be displayed even after licence expiry however updates cannot be applied and the charts are likely to be out of date.

Notices to Mariners

ENC's should be corrected by Hydrographic Offices in step with paper charts however sometimes this is not the case and the ENC or paper chart may lag behind the other. Where the vessel carries both ENC's and paper charts (as a backup) there should be a process that allows the information from the most up-to-date source to be used in the voyage plan. It should be noted that at present not all ENC producers include T&P NM's in their ENC's and that other sources (e.g. notice to mariners weekly bulletins) should be used to access to this information.

PSCOs should confirm during a more detailed inspection that all relevant charts (paper and digital) and publications (such as sailing directions, list of lights, notices to mariners, tide tables) required for the voyage are present; they must be of the latest available edition and, be shown to be kept up-to-date from the latest relevant obtainable notices to mariners and radio navigational warnings.

Carriage of nautical publications:

ENC's do not at present include all of the information that is available in nautical publications and thus for the foreseeable future there will be a requirement for ECDIS fitted vessels to carry paper publications (or their electronic equivalents) and to maintain these for notices to mariners. Publications like charts must be issued officially by or on the authority of a "Government, hydrographic office....." to meet IMO carriage requirements. Where digital nautical publications are used to meet the carriage requirement this will be indicated on the RoE of the SEC which should also show that back up arrangements are in place.

4. Training conversant with system

The PSCO should determine if the master and watch-keeping officers are familiar with the ECDIS equipment including the electronic charts installed and to demonstrate the setting up of equipment. PSCO may check if the master and watch-keeping officers are familiar with the procedures such as periodical tests and checks of the equipment to be carried out. There should be written procedures on the bridge for officers for using ECDIS.

Master and deck watchkeeping officers should be able to produce documentary evidence of ECDIS training or have appropriate endorsements for ships using ECDIS as PMN in lieu of paper charts. PSCO may take appropriate action if that is not the case.

5. Voyage Planning

Passage planning is necessary to support the bridge team and ensure that the ship can be navigated safely between ports from berth to berth. The passage plan should cover ocean, coastal and pilotage waters. PSCOs should take into consideration that the plan may need to be changed during the voyage; for example, the destination port may not have been known or may alter, or it may be necessary to amend the plan following consultation with the pilot.

PSCO may find passage planning on ships using a combination of electronic and paper charts. PSCO should ensure any one phase of the voyage should be undertaken using either all electronic or all paper charts rather than a mix of chart type. PSCO may find a preliminary plan covering pilotage waters and the role of the bridge team; PSCO should ask to see the Pilot Card. This Card should contain information on draught and ships speed, checklist of equipment available and working.

SOLAS Chapter V Regulation 34 applies to all ships and requires that prior to proceeding to sea, the master shall ensure that the intended voyage has been planned using the appropriate nautical charts and nautical publications for the area concerned, taking into account the guidelines and recommendations developed by the IMO¹².

It is important to note that Regulation 34 makes a properly prepared voyage plan mandatory and the plan is liable to be checked during port State control inspections. PSCO should verify if the voyage plan with its details as approved by the master prior commencement of the voyage. The voyage plan shall identify a route which:

1. Takes into account any relevant ships routing systems;
2. Ensures sufficient sea room for the safe passage of the ship throughout the voyage;
3. Anticipates all known navigational hazards and adverse weather conditions;
4. Takes into account the marine environmental protection measures that apply, and avoids, as far as possible, actions and activities which could cause damage to the environment; and
5. Takes into account appropriate contingencies where necessary.

¹²Refer to the IMO Guidelines for voyage planning adopted by resolution A.893(21).

Annex F

STCW Requirements Following Manila Amendments

Under the STCW Manila amendments *Table A- II/1* (Specification of minimum standard of competence for officers in charge of a navigational watch on ships of 500 gross tonnage or more) and *Table A-II/2* (Specification of minimum standard of competence for masters and chief mates on ships of 500 gross tonnage or more) carry following the note:

*“Training and assessment in the use of ECDIS is not required for those who serve exclusively on **ships not fitted with ECDIS**. This limitation shall be reflected in the endorsement issued to the seafarer concerned.”*

Certificates of Competence issued under the Manila amendment do not have to make reference to that amendment, they may state that they are *“issued under STCW’78 as amended”* i.e. the same wording that is on the present certificates. The only way it can be certain that a Certificate of Competence is issued under the Manila amendment is if its expiry date is later than 31st December 2016.

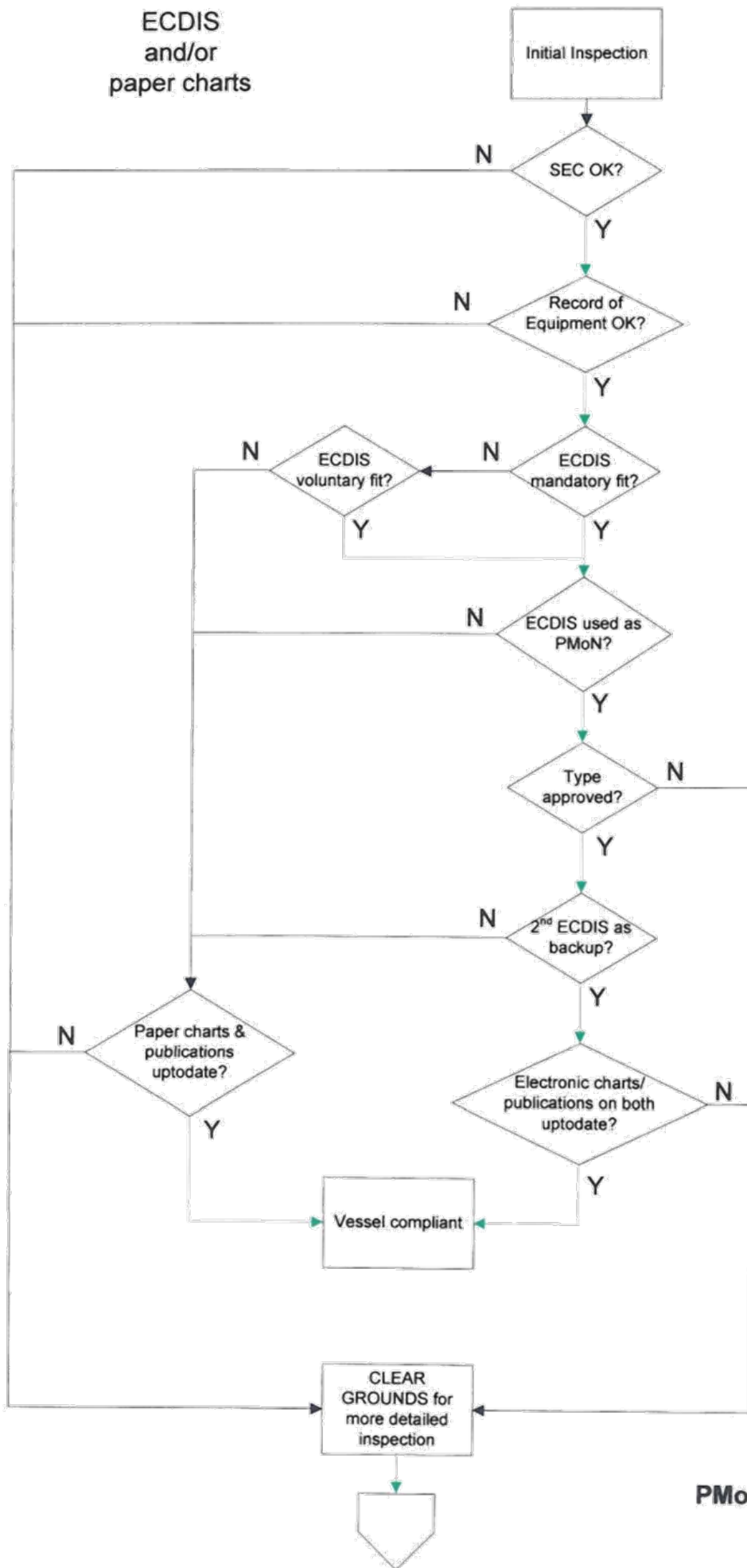
CoCs issued/re-validated under Reg II/1 and II/2 during the STCW Manila amendment period can take three forms:

1. If the seafarer has completed generic ECDIS training then their CoC will be re-validated for a period of 5 years; or
2. If the seafarer has not completed generic ECDIS training they may re-validate for a period of 5 years but their certificate will carry an endorsement, so called ‘negative endorsement’, stating that they may not serve on ships fitted with ECDIS.

Note, there are no endorsements to seafarer certificates of competency (CoC) relating to ECDIS training, but where training and assessment in the use of ECDIS is **not** required for those who serve **exclusively** on ships **not** fitted with ECDIS these limitations, although may be already reflected on the individual CoCs, are only effective from 1 January 2017 onwards.

So in effect a certificate that has no limitations is prima facie evidence of compliance with ECDIS requirements.

ECDIS
and/or
paper charts



**PMoN = Primary means
of navigation**

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