Input paper for consideration by NIPWG

HSSC Action 15/86 – IMO Electronic Navigational Publication guideline comments

Submitted by:	NIPWG Chair group
Executive Summary:	A review of which services should consider using S-128
Related Documents:	HSSC15-05.3A (NIPWG report at HSSC 15)
Related Projects:	S-128, Classification of S-100 based products and services

Introduction / Background

At HSSC15, NIPWG was assigned action 15/86 to provide HSSC16 and IHO Secretariat comments towards the IMO Navigation Communication and Search and Rescue Sub-Committee (NCSR); Noting the proposal by the ROK MOF(Ministry of Oceans and Fisheries) submitted to IMO/MSC - Guidelines for the use of Electronic Nautical Publications to be discussed at NCSR-11 (June 2024), NIPWG to prepare a comment paper for HSSC / IHO Secretariat.

A draft version of the input to the upcoming NCSR meeting has been obtained and the NIPWG Chair Team has reviewed and commented on the draft as a starting point for discussion. These comments are presented in the discussion item of this paper. The draft version is available in Annex A.

Analysis/Discussion

The NIPWG Chair Team comments are listed below;

1) It is not clear from the draft guideline what systems are in scope, i.e. only new systems or can old systems comply. This leads to the question, what are the implications of this for a bridge computer? Can systems installed before this guideline goes into force be used to meet the requirements? Are there any grandfathering implications?
2) Think there is ambiguity in the referencing to S-100 ECDIS (MSC. 530(106)), what about the hybrid situation where some information is in S-100 ECDIS, but other information is still in NP2? Who would be responsible for ensuring clarity to the end user and PSC officers? Will IHO need to issue additional guidance?
3) What about the case of S-100 based data being used outside the S-100 ECDIS? Would such a usage be covered by this guideline?
4) The guideline lists the examples used in SOLAS V and includes a statement that ENP must be official. IHO may have to issue guidance to IHO MS on how this works, what an ENP is, and what impacts there are on NP2 Nautical Publications.
5) The guideline require adherence to issuing authority's requirements for system using their ENP. Does this necessitate some review of who can produce ENP over who's waters? For it may mean that there are different rules for different producers, and if the voyage is supported by products from two producers, two systems may have to be used. Does this result in the need for a WEND type set of rules for NP2?
6) Since the guideline require adherence to issuing authority's requirements for system using their ENP, does this require an issuing authority to issue hardware/software requirements when providing NP2 in PDF format? IHO guidance may be needed to support this.
7) The guideline gives power supply requirements, which seems to preclude the use of laptops and table computers, such as IPAD and Android. Language seems to indicate that the user system must be permanently plugged in to the ship power.
8) Lack of clear screen size recommendations in the guideline makes it challenging to test use of NP2 by issuing authority. I.e. is a cellphone screen adequate or must it be viewed on a 32" monitor? Moreover, given wording in section 2.2 of the guideline (Hardware and Software), does this mean that the issuing authority can decide screen size? If so, there is a risk that different screen size requirements by issuing authorities can necessitate different screens to be used using different parts of a voyage.
9) Guidance on cyber security is missing.

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10) Guidance on training is vague, what about the hardware and/or software that portrays the ENP? What are the requirements if the ENP is a PDF from the issuing authority? May require IHO guidance to Member States.
11) The guideline should perhaps also include some wording around the ease of accessibility of ENP system record keeping for PSC officers and others that need to check ENP system and its content's fitness for purpose.

Conclusions

The draft guideline should be viewed as a starting point for discussion on closing the perceived gap in type approval of the use of NP2 level nautical publications. It seems that additional guidance is needed from the IHO to IHO Member States on how to get ready for ENP. The guideline also necessitate discussions about system requirements and should have further clarifications towards a common system so users are not forced to have multiple systems onboard to meet requirements. Implications for data coverage of NP2 should be investigated.

Recommendations

The Chair Team recommend that NIPWG members review these comments and support the conclusion noted above.

Action Required of NIPWG

The NIPWG is invited to:

    a.   note this paper

    b   take action as appropriate

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DEVELOPMENT OF GUIDELINES FOR THE USE OF ELECTRONIC NAUTICAL PUBLICATIONS (ENP)

Proposal to develop the Guidelines on installation and use of Electronic Nautical Publications (ENPs)

Submitted by the Republic of Korea

SUMMARY	
Executive summary:	This document provides draft Guidelines on installation and use of Electronic Nautical Publications (hereinafter referred to as ENPs) for consideration of the Sub-Committee.
Strategic direction, if applicable:	7
Output:	7.49
Action to be taken:	Paragraph 9
Related documents:	MSC 104/15/4; MSC 105/20; MSC 107/20; NCSR 7/22/3; MSC-MEPC.2/Circ.2; MSC.1/Circ.891; MSC.1/Circ.982 and MSC.1/Circ.1091

Introduction

1   The Maritime Safety Committee, at its 105th session, considered document MSC 104/15/4 (Republic of Korea et al.) and agreed to include the output "*Development of guidelines for the use of electronic nautical publications (ENP)*" in the post-biennial agenda of the NCSR Sub-Committee. The Maritime Safety Committee, at its 107th session, further decided to include the output in the 2024-2025 biennium and the provisional agenda for NCSR 11.

Discussion

2   In accordance with SOLAS regulation V/19.2.1.4, 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.

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3   SOLAS regulation V/19.2.1.5 allows an electronic means to partly or fully fulfil the requirements in SOLAS regulation V/19.2.1.4, provided that there are appropriate back-up arrangements. In this regard, MSC-MEPC.2/Circ.2 on *IMO requirements on carriage of publications on board ships* states that "publications may be carried in the form of electronic media such as CD-ROM in lieu of hard copies". Therefore, ENPs may be used as means to meet the carriage requirement of nautical publications.

4   The use of ENPs, in lieu of traditional nautical publications, has rapidly increased in recent years owing to many advantages. However, there is yet a related IMO instrument, which gives a uniform instruction, while there have been some guidance issued by national hydrographic offices. Therefore, there is sufficient and urgent need to develop specific guidance at the level of IMO to ensure uniform and global implementation of SOLAS regulation V/19.2.1.4.

5   As already mentioned in NCSR 7/22/3 and MSC 104/15/4, ENPs are normally used and viewed with dedicated software installed on an ordinary computer rather than with a dedication shipboard operational system. Therefore, the guidelines relating to ENPs should aim to address the general requirements relating to the installation and use of ENPs, including their adequate back-up arrangements and power supply, rather than providing a specific performance standards of ENPs. Also, it is noted that if some information on nautical publications may be provided by ship`s Electronic Chart Display and Information Systems (ECDIS), especially which conforms to performance standards resolution MSC.530(106), the guidelines are not applied to such ECDIS equipment.

6   The draft version of such guidelines in the annex of this paper takes into account existing instructions and guidelines issued by national hydrographic offices, and refers to relevant IMO documents.

7   The requirements of inspection and certification are also included in paragraph 5 of the draft guidelines. It is therefore considered that the Administration or its Recognized Organization may utilize the draft guidelines in verifying the appropriateness of shipboard ENPs system.

Proposal

8   In light of the above, Republic of Korea proposes that the Sub-Committee consider the draft Guidelines on the installation and use of ENPs, with a view to submission to MSC for its approval.

Action requested of the Sub-Committee

9   The Sub-Committee is invited to consider paragraph 8 above and take action as appropriate.

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ANNEX

Draft Guidelines on installation and use of Electronic Nautical Publications (ENPs)

1. General

1.1 Background

In accordance with SOLAS regulation V/19.2.1.4, all ships irrespective of size shall have nautical charts and nautical publications, as defined in SOLAS regulation V/2.2, to plan and display the ship's route for the intended voyage and to plot and monitor positions throughout the voyage. SOLAS regulation V/19.2.1.5 allows electronic means to partly or fully fulfil the functions of SOLAS regulation V/19.2.1.4, provided that there are appropriate back-up arrangements.

In this regard, MSC-MEPC.2/Circ.2 on *IMO requirements on carriage of publications on board ships* expressly states that "publications may be carried in the form of electronic media such as CD-ROM in lieu of hard copies". Therefore, Electronic Nautical Publications (hereinafter referred to as ENPs) may be used as means to meet the carriage requirement of nautical publications.

1.2 Purpose

This document provides guidelines on installation and use of ENPs on board in order to unify the implementation of SOLAS regulation V/19.2.1.4 and 19.2.1.5.

If some information on nautical publications may be provided by ship`s Electronic Chart Display and Information Systems (hereinafter referred to as ECDIS), especially which conforms to performance standards resolution MSC.530(106), this document is not applied to such ECDIS equipment.

Additionally, any instruction and/or guidance from national hydrographic offices or ship`s flag state, if any, should be adhered to.

2. Requirements on system and installation

2.1 Publications included in ENPs and issuing authority

The ENPs referred in these guidelines should meet SOLAS regulation V/2.2, 19.2.1.4 and 27 so that sailing directions, lists of lights, notices to mariners, tide tables and all other nautical publications should be included in ENPs to plan and monitor the ship`s route and position for the intended voyage.

The ENPs should be issued officially by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution according to SOLAS regulation V/2.2.

2.2 Hardware and Software

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Computer system, including hardware and software, used for ENPs should meet the requirements from the issuing authority.

Computer hardware used for ENPs should not interfere with the operation of other navigation and radiocommunication equipment. To achieve this and to ensure compliance with the SOLAS regulation V/17 on *Electromagnetic compatibility*, it is recommended to test electromagnetic compatibility for computer hardware taking into account resolution A.813(19). Type approval for computer hardware is not required.

Where the computer system is to be used also to run other authorised software applications to support ship`s operations, it should be checked to ensure that there is no conflict between these and the program for ENPs. Also, it may require enhanced memory and disc space to avoid slow software response times.

2.3 Power Supply

As the ENPs system should be available at all times during the voyage, the power should be supplied from ship's main source of electrical power and also emergency source of electrical power. An uninterruptible power supply (UPS) may be useful to eliminate fluctuations in the ship's main supply that would cause interruption to the ENPs system. However, as UPS normally can only operate a computer system for a short time in the event of power failure, it should not be considered as an emergency source of power for the system.

2.4 Display

Size and resolution of the screen should be adequate to ensure a clear display of navigation information. Also, the screen should be able to adjust in brightness and contrast to enable viewing in all ambient light conditions. Especially for using at night, it should be ensured that brightness of screen and keyboard do not affect the night vision of bridge watch staffs.

2.5 Location of installation

Nautical publications are required for voyage planning and should also be easily accessible by Master and officers of watch at all times during the voyage. Therefore, ENPs should be located at the navigation bridge. Also, the ENPs should be installed in a location that does not interfere with the monitoring of voyage situation and the operation of other navigation and radiocommunication equipment.

2.6 Back-up arrangement

According to SOLAS regulation V/19.2.1.5, an appropriate back-up system for ENPs should be provided. The back-up arrangement can be a secondary computer system or form of hard copies of nautical publication.

If a secondary computer system is provided as a back-up arrangement, it also should be met all requirements on these guidelines. If it is impossible to locate secondary computer system at or vicinity of navigation bridge, it may be located at other location easily accessible to officers. In this case, it is recommended that secondary computer system is connected to a printer located at navigation bridge via ship`s network to enable navigationally significant information to be available at the bridge in anytime.

In case the hard copies of nautical publications are provided as a back-up arrangement, it should be issued officially by or on the authority of a Government, authorized Hydrographic

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Office or other relevant government institution according to SOLAS regulation V/2.2. Also, provided nautical publications should be up-to-date version at the time of provision, and it will be updated periodically as same as other paper charts, ECDIS and ENPs.

3. Requirements on operation

3.1 Update

According to SOLAS regulation V/27, ENPs, for both primary and back-up systems, should have a facility for updating information at least same intervals as that provided in any hard copies of nautical publications. Updates for ENPs may be possible by CD media, USB memory stick, email or download via internet. The record of updates should be kept on board properly.

3.2 System malfunction

For the generally expected malfunction of ENPs, the procedure on troubleshooting should be provided onboard by issuing authority of ENPs. In the event of a serious malfunction which cannot be resolved by ship`s crew, repairs or remote support by shore personnel should be carried out as soon as possible. If immediate repair is not possible for both primary and back-up ENPs, all data and information, which can be acquired from nautical publications, necessary to sail to a port where repairs can be made should be provided from shore side.

3.3 Training for familiarization

The crews using the ENPs, especially new joined crew, should be trained for familiarization with guidelines or user`s manual provided by issuing authority of ENPs to ensure that they are able to use and maintain the ENPs safely and effectively.

3.4 Record

The records with related to proper use and maintenance of ENPs system, such as periodical update, specific repair and training for familiarization, should be maintained and kept on board.

4. Documented procedure for operation

The documented procedure, such as a part of Safety Management System manual, for using and managing the ENPs should be provided on board, and the below contents may be included but not limited to:

- How to use

- Maintenance procedure including in case of system malfunction

- Periodical update

- Back-up arrangement and its management

- Training for familiarization

- Keeping the records for proper use and maintenance of ENPs system

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5. Inspection and Certification

When the ENPs system and its back-up arrangement are installed on-board, the Administration or the Recognized Organization should confirm whether the system comply with the requirements of these guidelines. After confirmation, it should be properly indicated in the record of equipment for relevant statutory certificates that nautical publications and its back-up arrangements for ENPs are being provided on board. Also, before the issuance or endorsement of such certificates at the time of renewal/periodical/annual surveys, it should be confirmed that the ENPs system and its back-up arrangement are used and maintained properly according to these guidelines.

5.1 Record of Equipment in relevant SOLAS Safety Certificates pertaining to the installation of ENPs

Where ENPs are provided onboard, items 2.3 and 2.4 of Part 3 of the Form E(Record of Equipment for the Cargo Ship Safety Equipment Certificate) and items 2.3 and 2.4 of Part 5 of the Form P(Record of Equipment for the Passenger Ship Safety Certificate) and Form C(Record of Equipment for the Cargo Ship Safety Certificate) should be completed according to the following scenarios:

5.1.1 Two ENPs only (no hard copy nautical publications)

Item	Actual provision
2.3 Nautical publications	Electronic Nautical Publications
2.4 Backup arrangements for electronic nautical publications	Electronic Nautical Publications

5.1.2 One ENPs + Nautical publications (hard copy)

Item	Actual provision
2.3 Nautical publications	Electronic Nautical Publications
2.4 Backup arrangements for electronic nautical publications	Nautical Publications

6. References

- MSC-MEPC.2/Circ.2 - IMO requirements on carriage of publications on board ships

- MSC.1/Circ.891 - Guidelines for on board use and application of computers

- MSC.1/Circ.982 - Guidelines on ergonomic criteria for bridge equipment and layout

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