Making headway: IMO’s plan to lead shipping into a new digital era

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Presentation outline

- Harmonized Display
- Maritime Services
- S-Mode
- IMO e-navigation Strategy Implementation Plan (SIP)
IMO’s e-navigation Strategy Implementation Plan (SIP)

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IMO’s e-navigation Strategy Implementation Plan (SIP)

Sub-Solutions to Solution 1

Solution 1
Improved, harmonized and user-friendly bridge design

- Ergonomically improved and harmonized bridge and workstation layout.
- Extended use of standardized and unified symbology for relevant bridge equipment.
- Standardized manuals for operations and familiarization in electronic format for relevant equipment.

Equipment to follow IMO BAN (Bridge Alert Management) Performance Standards

- Standard default settings, save/recall settings, and S-mode functionality on relevant equipment.

Information accuracy/reliability indication functionality

- Graphical or numerical presentation of levels of reliability (INS) for improved access to shipboard information.
- GMDSS equipment integration – one common interface.

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**Solution 1**
Improved, harmonized and user-friendly bridge design

- **Extended use of standardized and unified symbology for relevant bridge equipment.**
  - TASK ACTION (T2)
    - Develop symbology for relevant equipment using as a reference resolution MSC.192 (79).

- **Standardized manuals for operations and familiarization in electronic format for relevant equipment**
  - TASK ACTION (T3)
    - Develop the concept of electronic manuals and harmonize the layout to provide mariner with an easy way of familiarization for relevant equipment.

- **Equipment to follow IMO BAM (Bridge Alert Management) Performance Standards**
  - TASK ACTION (T5)
    - Ensure that all equipment is checked during type approval and that it meets the requirements of resolution MSC.302(87) on Bridge Alert Management, as may be updated.

- **Graphical or numerical presentation of levels of reliability**
  - TASK ACTION (T6)
    - From the above develop a harmonized display system indicating reliability levels.

- **INS for improved access to shipboard information**
  - TASK ACTION (T7)
    - INS systems which integrate navigation equipment data already exist but are not mandatory carriage to resolution MSC.252(83). E-navigation relies on integration and without mandatory carriage of INS it would be difficult to achieve the solutions. The carriage of an INS or maybe something simpler should be investigated.

- **Ergonomically improved and harmonized bridge and workstation layout**
  - TASK ACTION (T2)
    - Draft Guidelines on Human Centred Design (HCD) for e-navigation systems.
  - TASK ACTION (T4)
    - Draft Guidelines on Usability testing Evaluation and Assessment (UTEA)
    - Resolutions A.694(17), A.997(25) and MSC.252(83) and MSC/Circ.982, SN.1/Circ.255, SN.1/Circ.274 and SN.1/Circ.288 are of relevance.

- **Standard default settings, save/recall settings, and S-mode functionality on relevant equipment.**
  - TASK ACTION (T4)
    - Performance or technical standards mandating the features on relevant equipment. Develop a testbed demonstrating the whole concept of standardized modes of operation including store and recall for various situations as well as S-mode functionality on relevant equipment.

- **Information accuracy/reliability indication functionality**
  - TASK ACTION (T6)
    - Develop a testbed demonstrating technically how accuracy and reliability of navigation equipment may be displayed.

- **GMDSS equipment integration – one common interface.**
  - TASK ACTION (T6)
    - Take into account resolution A.811(19) when integrating GMDSS into one common interface.
Update of IMO’s e-navigation Strategy Implementation Plan (SIP)

NCSR 4 agreed

- Update of the SIP
- Prioritize the outputs and reorganize them
- Invited interested parties to submit proposals for the update

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What does the seafarer and other users need?
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**Ship user needs**

- Improved Ergonomics (bridge layout)
- Standardization of functionality for navigation displays (human-machine interface)
- Easy-to-understand and familiarization material for onboard equipment
- User selectable information received via communication equipment
- More user-friendly display of MSI (NAVTEX, SafetyNET etc.)
- Alert Management
- Standardized and automated reporting
- Automated Updating of Data and Documents
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Use of ECDIS

**e-Navigation:**

ECDIS features to improve safety are buried under several layers and there are often a lot of alarms, which crew may switch off (S.Clinch, UK MAIB chief inspector).
Maritime Service Portfolios

Guidance on the definition and harmonization of the format and structure of Maritime Service Portfolios (MSPs)
Maritime Service Portfolios

Outcome of the first meeting of the IMO/IHO Harmonization Group on Data Modelling (HGDM)

- change of the definition of "MSP"
- 3 levels of control and ownership
- High-level Template for Maritime Services
Consequential work related to the Polar Code

- Supplement performance standards for navigation and communication equipment used in polar waters
- Develop a work plan listing all performance and test standards and requirements in need of revision

**e-Navigation:**

- Magnetic variations in high latitudes
- Gyrocompass errors in high latitudes
- Hydrographic survey in polar waters
- Radar echoes in ice
- Visibility of Satellites
IMO’s work on e-Navigation
Outcome of NCSR 4/ MSC 98

GMDSS modernization

▶ MSC 98 approved the modernization plan of the GMDSS
▶ MSC 98 approved amendments to SOLAS chapter IV* replacing 'Inmarsat' by 'recognized mobile satellite service'

▶ *for adoption at MSC 99 and entry into force in 2020
IMO’s work on e-Navigation

The GMDSS and e-Navigation link

The GMDSS modernization project needs to continue to support the needs of the e-navigation strategy

(GMDSS Modernization Plan, par.10)
Information exchange between ships and shore
Application of the FAL Convention

Convention on Facilitation of International Traffic, 1965, as amended (FAL)

- Amendments entered into force 1 Jan 2018 (res. FAL.12(40))
  - New definitions added including Single Window
  - RP 1.3quin: submissions required on the arrival, stay and departure of ships, persons and cargo to be sent to a "Single Window" (N.B. No Standard)
Information exchange between ships and shore
Application of the FAL Convention

Data exchange format

- Information for the clearance to be in conformity with the relevant UN Standards, including UN Electronic Data Interchange for Administration, Commerce and Transport (UN/EDIFACT) Standards, or other internationally agreed Standards, such as the XML Standard.
Information exchange between ships and shore
Application of the FAL Convention

Documents to be submitted by the ship to shore for their clearance

1. General Declaration (FAL Form 1)
2. Cargo Declaration (FAL Form 2)
3. Ship’s Stores Declaration (FAL Form 3)
4. Crew’s Effects Declaration (FAL Form 4)
5. Crew List (FAL Form 5)
6. Passenger List (FAL Form 6)
7. Dangerous Goods Manifest (FAL Form 7)
8. Document under the Universal Postal Convention for mail
9. Maritime Declaration of Health
10. Security-related information
11. Adv.electronic cargo information for customs risk assessment

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THANK YOU