

Update on S-Mode

A consolidated view – I hope...

February 2016



eNavigation Underway (International) Conference

CONTENTS



Update



Development Plan of S-Mode Guideline



Getting involved



Update from Busan workshop
November 2015

6 A total of 45 participants, including seafarers who use navigational equipment, relevant industry leaders, pilots, research institutes and classification societies, represented the following companies and organizations.

International Organizations:

Nautical Institute(NI)
International Electro-technical Commission (IEC) TC 80
Australian Maritime Safety Authority (AMSA)
Comité International Radio-Maritime (CIRM)

Republic of Korea:

Ministry of Oceans & Fisheries(MOF)	Eusu Ship Management Co., Ltd
Korean Institute of Maritime and Fisheries Technologies	Electronics and Telecommunications Research Institute
Korea Maritime University	Korea Marine Equipment Research Institute
Hyundai Merchant Marine Co., Ltd	Korean Register of Shipping
Haeyoung Maritime Service Co., Ltd	Marine Electronics Co., Ltd
Hanjin shipping Co., Ltd	E-Marine Co., Ltd
Pilots(Masan, Mokpo, Ulsan, Busan)	ShindongDigitech Co., Ltd
Korea Maritime Pilots' Association	
Korea Research Institute of Ships & Ocean Engineering	



Output from Workshop

NCSR 3

- **3/28/1 – Development of guidance on the Standardized (or S) Mode of operation of navigation equipment (Australia, Republic of Korea, InterManager, NI, IAIN, IFSMA, IEC, and CIRM)**
- **Inf 17 – An international workshop on the development of a guidance on the S-Mode of operation of navigation equipment (Republic of Korea)**



Output from Workshop

Australia and the Republic of Korea have held workshops on S-Mode during 2015. These workshops have involved Human Factors experts, maritime trainers, seafarers (including marine pilots), regulators, representatives from the marine electronics industry and others. These workshops have helped refine the scope of a future IMO guideline on S-Mode. They have identified that less focus could be placed on the idea of an independent mode, should another approach achieve the same goals.

(NCSR 3/28/1 para 10)



Output from Workshop

A proposed description of the content or scope of the guideline on standardized modes of operation, S-Mode, is as follows:

"Guidance on the standardization of design for navigation and communication systems, encompassing displays, interfaces, and functionalities able to provide the bridge team and the pilot with timely access to essential information for the conduct of navigation throughout the voyage, from berth to berth."

(NCSR 3/28/1 para 11)



Output from Workshop

However, it remains important that S-Mode should not limit a manufacturer's ability to innovate. *(NCSR 3/28/1 para 12)*

S-Mode may also incorporate provisions for the configuration of personal settings. These may be stored in the system. They will allow a user to rapidly customize the system to their preferred settings (e.g. overlay custom display features or give access to customized information). *(NCSR 3/28/1 para 13)*



NCSR 3/INF.17

<p>Strengths</p> <ul style="list-style-type: none">• Reduce familiarization training effort• Enhance navigation safety by improving usability• Facilitate more effective decision-making	<p>Weaknesses</p> <ul style="list-style-type: none">• Long time involved in the eventual installation on board• Potential difficulties the industry may face in applying the guidelines• Time, cost and improvement works required until the application of S-Mode
<p>Opportunity</p> <ul style="list-style-type: none">• IMO has approved the development of S-Mode guidelines to be prepared by 2019• Improved ability to integrate equipment from other manufacturers• Benefits are demonstrated when they are applied to shipboard systems• Less product differentiation benefits small manufacturers in terms of equipment design	<p>Threat</p> <ul style="list-style-type: none">• Less product differentiation implies the reduction of unique or superior qualities of products. Potentially a disadvantage to large manufacturers• Guidelines may not be applied as they are not mandatory• The improvement of navigation facilities may not keep up with the rapidly-changing technology in the future

**Development Plan for the
S-Mode Guideline**

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How to Develop the S-Mode Guideline

IMO MSC document (MSC/95/19/12)

Year	Plan
Year 1 (2016ish)	Agree on the scope of S-Mode and carry out a user needs evaluation -initial testbed design could also take place given that some existing e-navigation user needs have been previously identified
Year 2 (2017ish)	Develop testbeds based on user assessments and commence simulation trials with a wide variety of seafarers
Year 3 (2018ish)	Continue simulation trials and commence initial drafting of an S-Mode guideline
Year 4 (2019ish)	Complete drafting of an S-Mode guideline for the design of shipboard navigational equipment along with notes for training implications (e.g. model course)



Plan for the Survey of Users' need for S-Mode

Tasks for user need survey

- ◆ Designing a questionnaire for surveying user need on the development of S-Mode
 - ✓ Targeted respondents : Group of experts including maritime pilots and mariners by internationally cooperating with Australia, NI, and more...
 - ✓ Targeted equipment : INS (Integrated Navigation System)

- ◆ The Scope of the questionnaire
 - ✓ Collect opinions on the standardization of INS-mandatory tasks
 - Route Monitoring (MSC.232(82), requirements on ECDIS)
 - Collision Avoidance (MSC.192 (79), requirements on RADAR)
 - Navigational control data



Plan for the Survey of Users' need for S-Mode

Tasks for user need survey

◆ Questions

- ✓ Items to be standardized for display and each function

(ex : True vector, Relative vector, Range rings...)

◆ Output

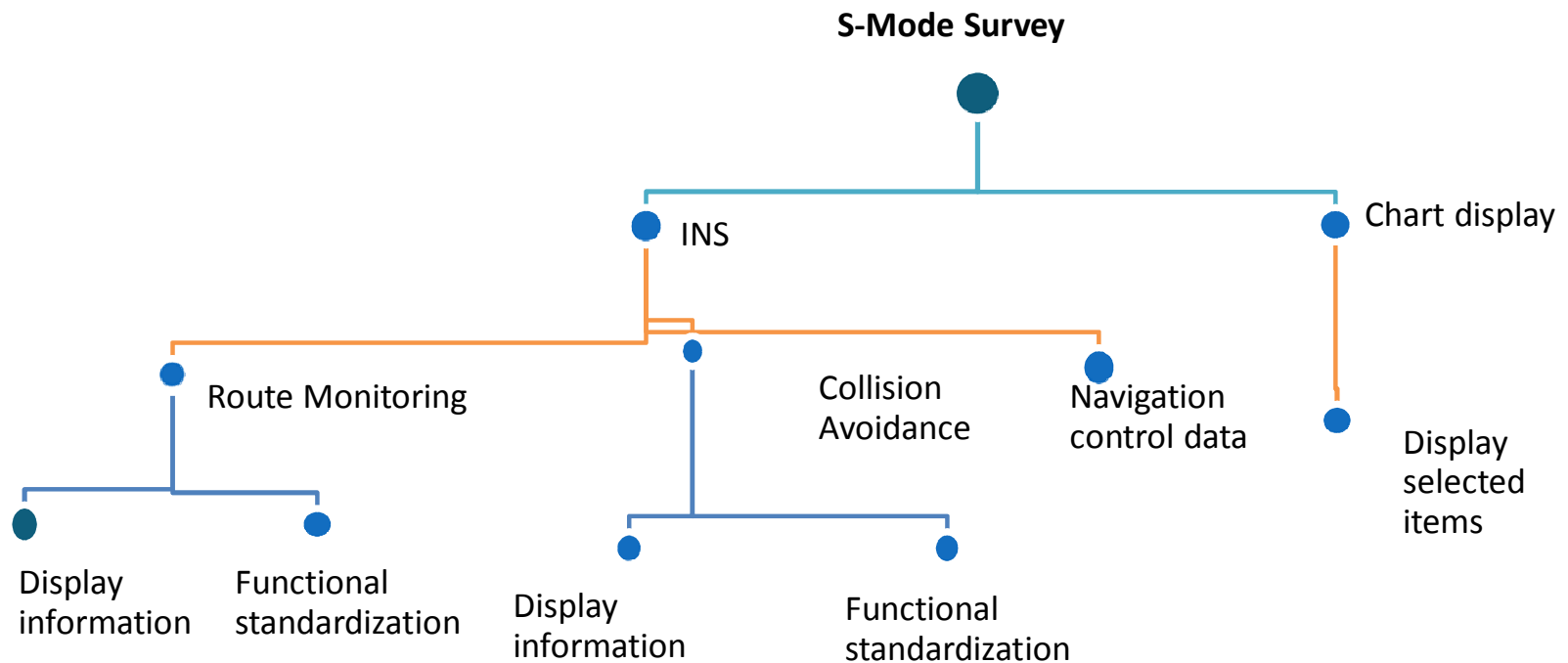
- ✓ User-based specific items to be standardized
 - Be able to identify items of display and functions for standardization
 - Provisional design for S-Mode mock-up can be created.

◆ The goal of survey: Generating the main items of S-Mode of INS



Plan for the Survey of Users' need for S-Mode

Tasks for user need survey





Plan for the Survey of Users' need for S-Mode

Preliminary result of survey using questionnaire

- Please indicate by drawing in the picture how you would prefer the ECDIS interface design.
 - Key items to draw : ① Menu bar, ② Information window for route ③ Alarm info.

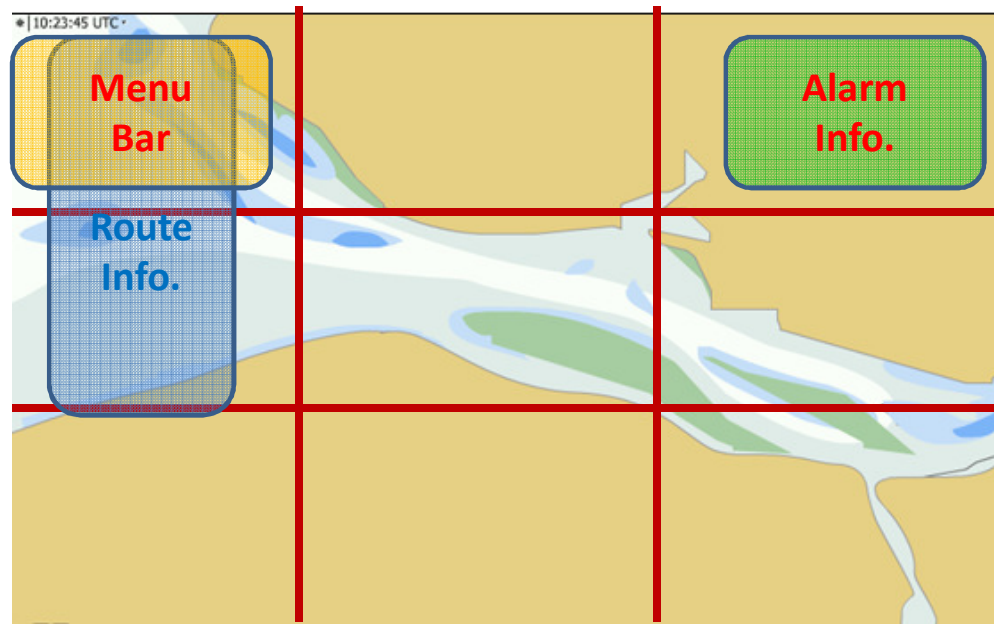




Plan for the Survey of Users' need for S-Mode

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What now, and how to get
involved...

03



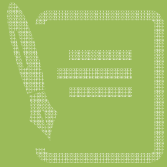
Workshops and Meetings

- Friday February 26 2016 (pre NCSR 3) London at NIHQ
- NCSR 3 – London 29 Feb – 4 March 2016
- Ergoship 2016 Conference (6-7 April) – Melbourne Australia
- S-Mode workshop @ AMC Tasmania (11 April)



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Credit / Thanks

- Dr. Min Jung - Associate professor, Korea Institute of Maritime and Fisheries Technology (KIMFT)
- Dr. Seojeong Lee - Associate Professor, Korea Maritime and Ocean University (KMOU)
- Dr. Ben Brooks and Dr. Margareta Lützhöft – Professor, Australian Maritime College (AMC)
- Mr. Nick Lemon and Dr. Michelle Grech – Australian Maritime Safety Authority (AMSA)
- Nautical Institute, IFSMA, CIRM, IEC (TC80), IAIN, InterManager, etc...



Q&A