



## **S-Mode update**

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# About CIRM



# About CIRM

- **International non-profit association of marine electronics companies**
- **NGO in Consultative Status to IMO**
- **Approx. 110 members, including:**
  - **Equipment designers / manufacturers**
  - **Service providers**
  - **System integrators**
  - **Software development companies**



# Technical scope of interest

## Navigation equipment & systems



## Radiocommunications & GMDSS



# What we do

- **Represent the marine electronics industry, internationally**
- **Contribute to development of regulations and standards**
- **Enable companies to exchange ideas and opportunities**
- **Provide specialist information service to members**



# S-Mode update



# Background

- **Original S-Mode concept - fully standardized mode of operation on navigation equipment**
- **Driven by concerns about significant variation in system design across different manufacturers (notably ECDIS)**
- **S-Mode concept originally proposed at IMO by IFSMA; championed by The Nautical Institute**
- **Eventually approved as an IMO output as part of e-navigation**

# Development

- **Informal IMO Correspondence Group established to develop S-Mode**
- **CIRM joined group, expressing concern about concept... we backed an alternative solution to reduce variation in system design between manufacturers – by standardising key elements of user interfaces**

**In other words, user interfaces would feature “always-on” standardization, ever-present on the display, rather than having that standardization confined to a separate mode of operation**



# Development

- **Correspondence Group (CG) invited CIRM to make a proposal**
- **CIRM's S-Mode Working Group developed mature technical proposal over 6 months, submitted to CG for review**
- **Proposal underwent thorough usability testing; users consulted on all aspects... outcomes used to refine proposal**
- **"Always-on standardization" proposal became core of the draft S-Mode guidelines prepared by the group and submitted to IMO for consideration (NCSR 5)**
- **Title changed to reflect scope:**  
***Guidelines for the standardization of design for navigation equipment***

# Usability testing

## THE STANDARDISATION OF FUNCTIONS AND DISPLAY OF NAVIGATION EQUIPMENT (S-MODE)

Reduce variation in the design of user interface for navigation equipment, including Integrated Navigation Systems (INS), Integrated Bridge Systems (IBS), Electronic Charting Display and Information Systems (ECCDIS) and Marine Radar

### Before



### With S-mode



Scan this QR code to learn more about S-mode:



## How do we develop S-mode?

### Standard icons

A set of standard icons is being developed for the Graphical User Interfaces (GUI) of navigation systems. The icons are designed to be easily interpreted and tests are being conducted with the participation of seafarers to ensure this objective. Scan the QR code to see how the icons are being developed.



### Logical grouping of information

S-mode aims to define clusters of related navigational information that shall be displayed together on the user interface, to enable the user to quickly locate and react to essential navigation information. To define these information blocks, we are conducting tests in which users are asked to arrange navigational information into groups that suitable for their work.

### List of quickly accessible functions

S-mode aims to define a list of functions on navigation systems that must be accessible by either single or simple operator action.



### Default system settings

A facility shall be provided to apply a set of standard settings to return the equipment to the default configuration. Using simulators, we will determine the settings best suited for the most common navigation scenario.

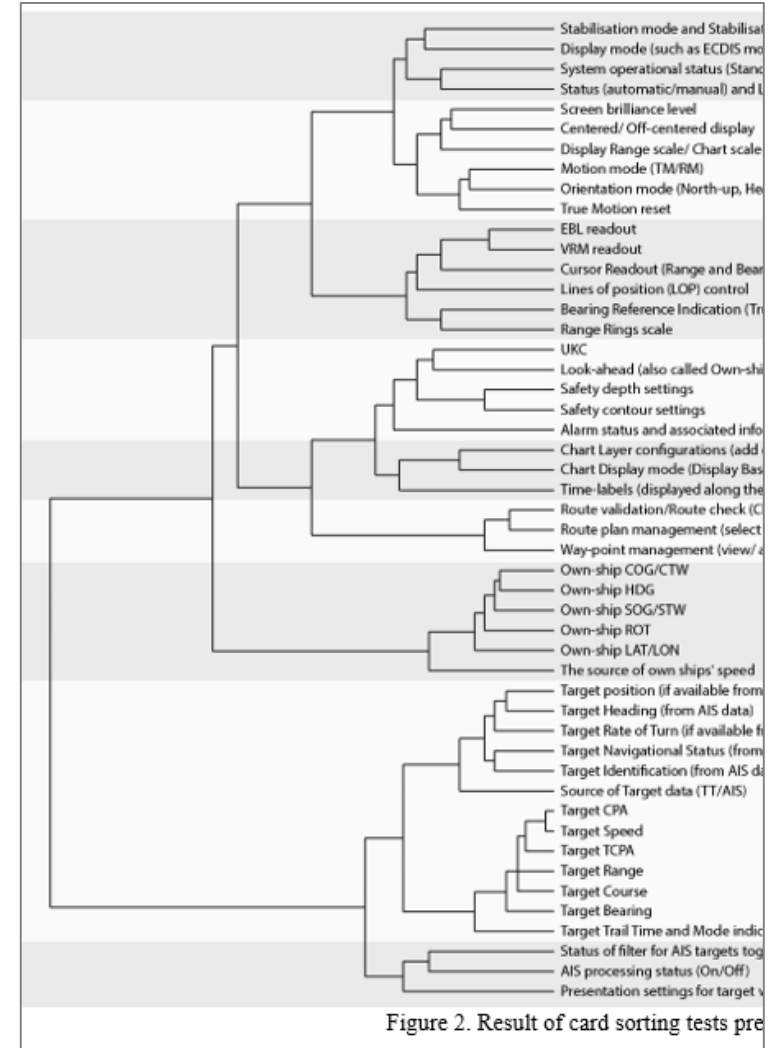


Figure 2. Result of card sorting tests pre

# IMO approval

- **IMO's NCSR Sub-Committee considered draft S-Mode guidelines during NCSR 5 (2018) and NCSR 6 (2019)**
- **Final version sent by NCSR 6 to MSC 101 (2019) where the guidelines were approved as Circular MSC.1/Circ.1609**

# Structure

- **Guidelines comprise:**
  - **Main body text (user needs, standardization design principles)**
  - **Appendix 1**      **Informative annex on human factors research**
  - **Appendix 2**      **Navigation-related terminology and icons of functions**
  - **Appendix 3**      **Logical grouping of information**
  - **Appendix 4**      **List of functions that must be accessible by single or simple user action**

# Implementation

- **The Guidelines have been published as an IMO Circular, meaning implementation is voluntary**
- **However appendices 2 & 3 have been referenced in IMO Resolution MSC.466(101), meaning they will become mandatory for manufacturers to implement:**
  - **on radars, ECDIS and INS installed on or after 1 January 2024**
  - **for all other bridge nav displays installed on or after 1 July 2025**
- **This might seem a long time away... but 5 years is not long in the SOLAS world!**

# Achievements

- **Development of “S-Mode” has demonstrated that different stakeholders can collaborate positively and effectively in the interests of - and with input from - the user**
- **Circular MSC.1/Circ.1609 is a significant step towards improved usability of navigation systems**



**CPRM**

**Thank you!**