For TSM7

Report of the S-124 Correspondence Group

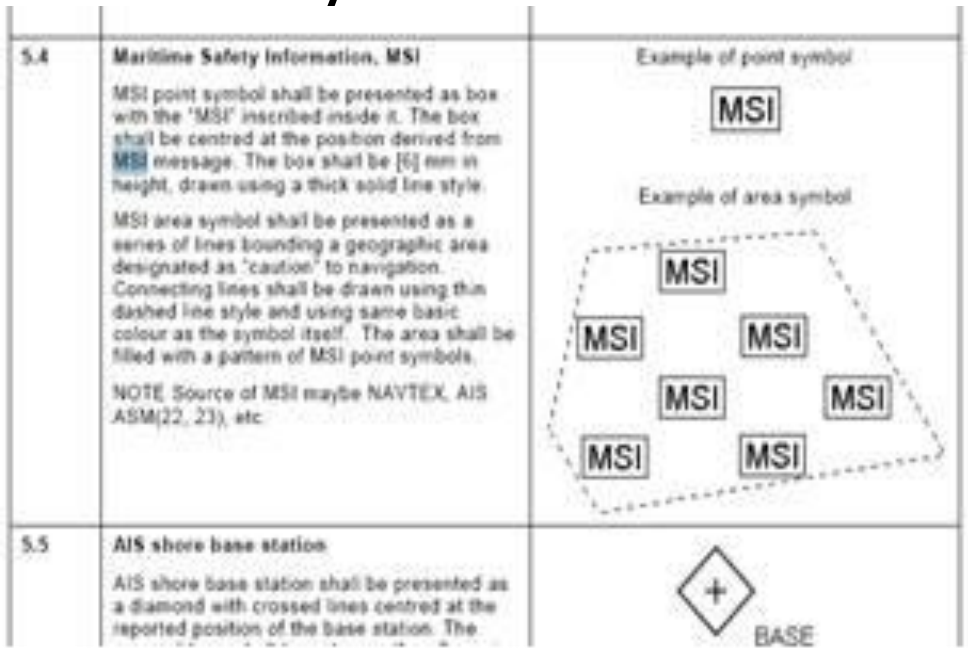
Ongoing Activities

- Data Modelling
  - Input from STM and SMART Navigation projects improved data model.
  - WWNWS10 decided NtM T/P should not be included.
  - The warning type code list is very long (growing).
    - List is under review by WWNWS-Sc
- Product Specification
  - First draft released for review in October 2018.
  - Second draft released for review in June 2019.
  - Comments being adjudicated.

S-124 Developments

- S-124 workshop held in parallel with WWNWS11 in Halifax.
- WWNWS11 agreed that S-124 should align with S-100/S-52 where S-53 differ. E.g. Format of time, adding metres as UoM.
- WWNWS11 agreed that S-124 will only have one MRN ID to maintain alignment with current NW paradigm.

Portrayal limitations imposed by IMO and IEC



5.4	**Maritime Safety Information, MSI** MSI point symbol shall be presented as box with the 'MSI' inscribed inside it. The box shall be centred at the position derived from MSI message. The box shall be [6] mm in height, drawn using a thick solid line style. MSI area symbol shall be presented as a series of lines bounding a geographic area designated as "caution" to navigation. Connecting lines shall be drawn using thin dashed line style and using same basic colour as the symbol itself. The area shall be filled with a pattern of MSI point symbols. NOTE Source of MSI maybe NAVTEX, AIS ASM(22, 23), etc.	Example of point symbol MSI Example of area symbol MSI MSI MSI MSI MSI MSI MSI
5.5	**AIS shore base station** AIS shore base station shall be presented as a diamond with crossed lines centred at the reported position of the base station. The	BASE

Screen shot from IEC 62288

Topic	Symbol	Description
MSI	Example of point symbol MSI Example of area symbol MSI MSI MSI	MSI point symbol should be presented as a box with the "MSI" inscribed inside it. The box should be centred at the position derived from the MSI message. The box should be drawn using a thick solid line style. The MSI area symbol should be presented as a series of lines bounding a geographic area designated as "caution" to navigation. Connecting lines should be drawn using thin dashed line style and using the same basic colour as the symbol itself. The area should be filled with a sparse pattern of MSI point symbols. Note that the source of MSI may be NAVTEX, AIS ASM function identifier 22 or 23 (SN.1/Circ.289), etc.

Screen shot from NCSR6 WP 4 report [GUIDELINES FOR THE PRESENTATION OF NAVIGATIONAL-RELATED SYMBOLS, TERMS AND ABBREVIATIONS]

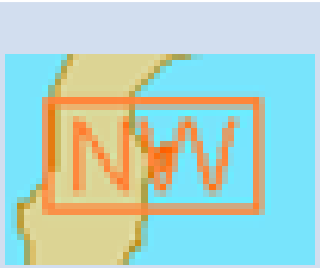
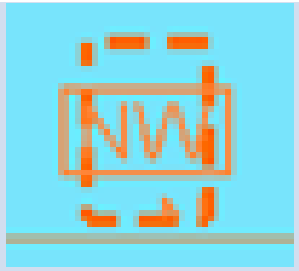
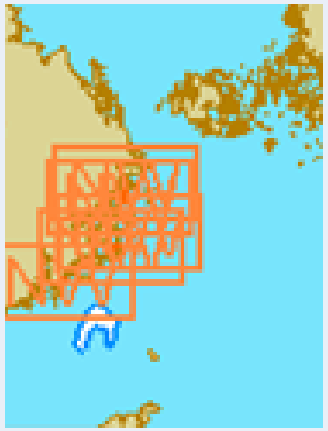
Limitations imposed by IMO and IEC

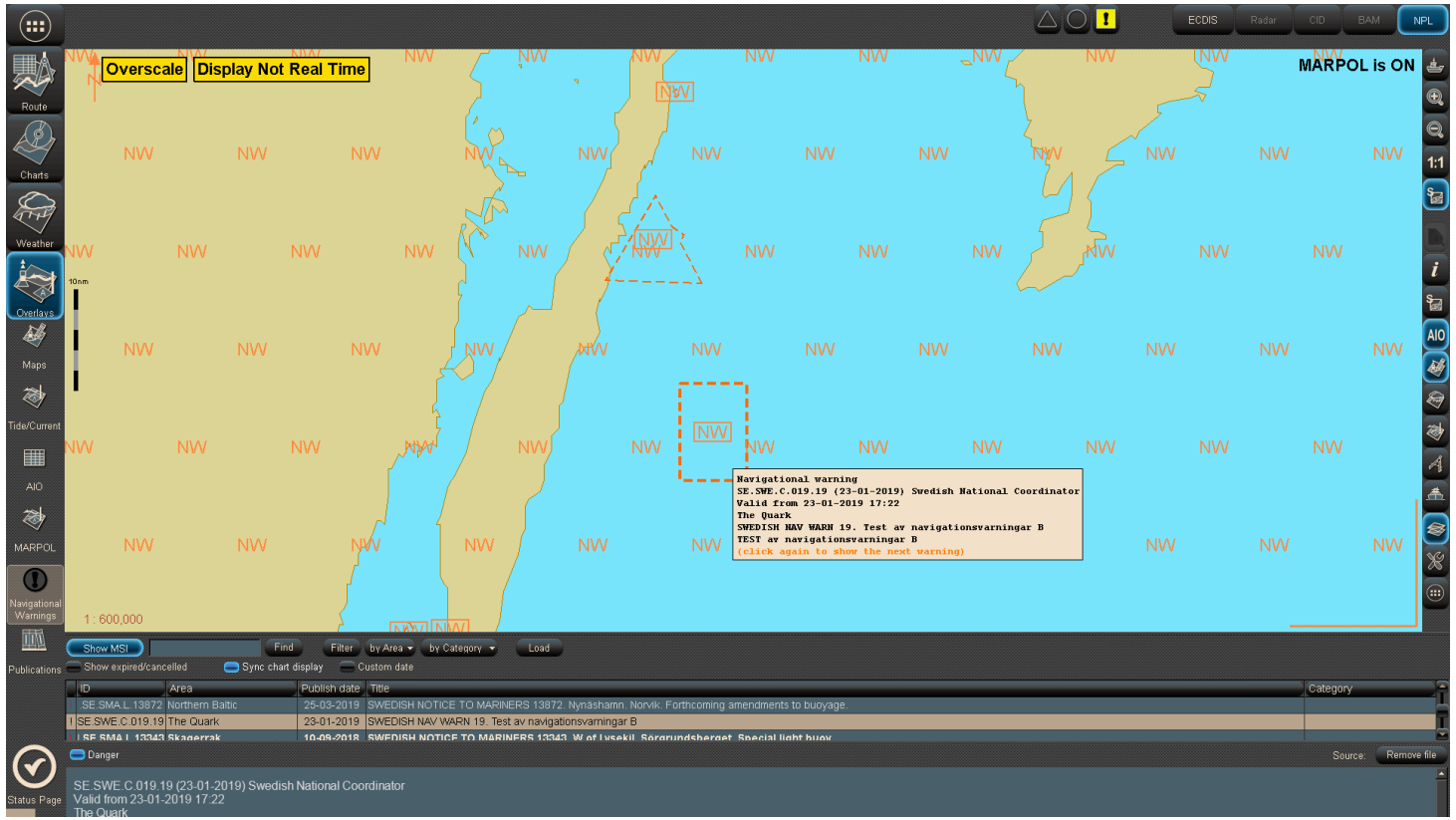
From NCSR 6 WP4 Report

5.9 As there was **no time for developing new symbols at this stage**, and recognizing a need to avoid conflicts with the presentation and display of information received on board for use in navigation equipment, the Group noted that several international organizations were developing information **product specifications that would make available revised or new information in the coming years**. The Group also noted that the IHO's S-100 Working Group was dealing with harmonization issues between developing information product specifications within their remit, and in this respect, encouraged participation in the IHO's S-100 Working Group. The Group was of the view that after completing its work on e-navigation maritime services, the Organization should continue its work on the harmonized display of information received by communications equipment by revisiting the *Interim guidelines for the harmonized display of navigation information received via communication equipment* (MSC.1/Circ.1593).

Decisions regarding Portrayal of NW messages from WWNWS11

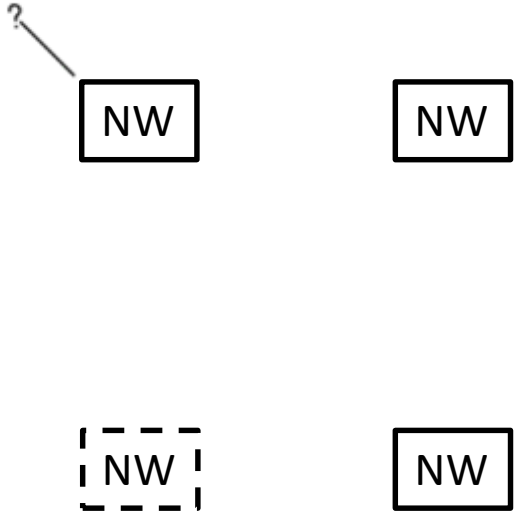
- Navigational Warning and Weather Warning (S-412) should have different symbols.
  - These are both MSI, but have different packaging.
- One symbol for all types of navigational warnings. (“NW” in some format).
  - No colour differentiation between types of hazards.
- Navigational Warning layer should not be turned off during route monitoring mode.
- Filtering: no filtering of which types of warnings (e.g. local vs coastal), no spatial, topic, or route. Temporal filtering is still important.
  - Navigational Warnings will be filtered by the extend of the chart pane (i.e. show all NW within chart pane, except those temporally out of range).

	Point, line and area representation Day, night and dusk colour palettes.
 	Common problem for all products. S-124 should follow align with ENCs portrayal logic to resolve this.
 	Proposal to reduce clutter into a symbol indicating NW symbol both individual and to indicate a group of NW. NCWG will be requested to support this.
	Symbol should have two version, one for not acknowledged information and one for acknowledged information. Portrayal should also include a function to reset the new navigational warnings received for when a new officer comes in to see what they are.



There needs to be a visualization of the affected area that is not intrusive (e.g. a temporary light tinting of the selected area). E.g. outage of a light has an affected area related to its nominal range.

It is agreed that NW information is by default approximate positions. It should be possible to flag a position as accurate.
Portrayal of this is an open question. E.g. should all NW by default have the '?' or should accurately known NW have a slightly different symbol.



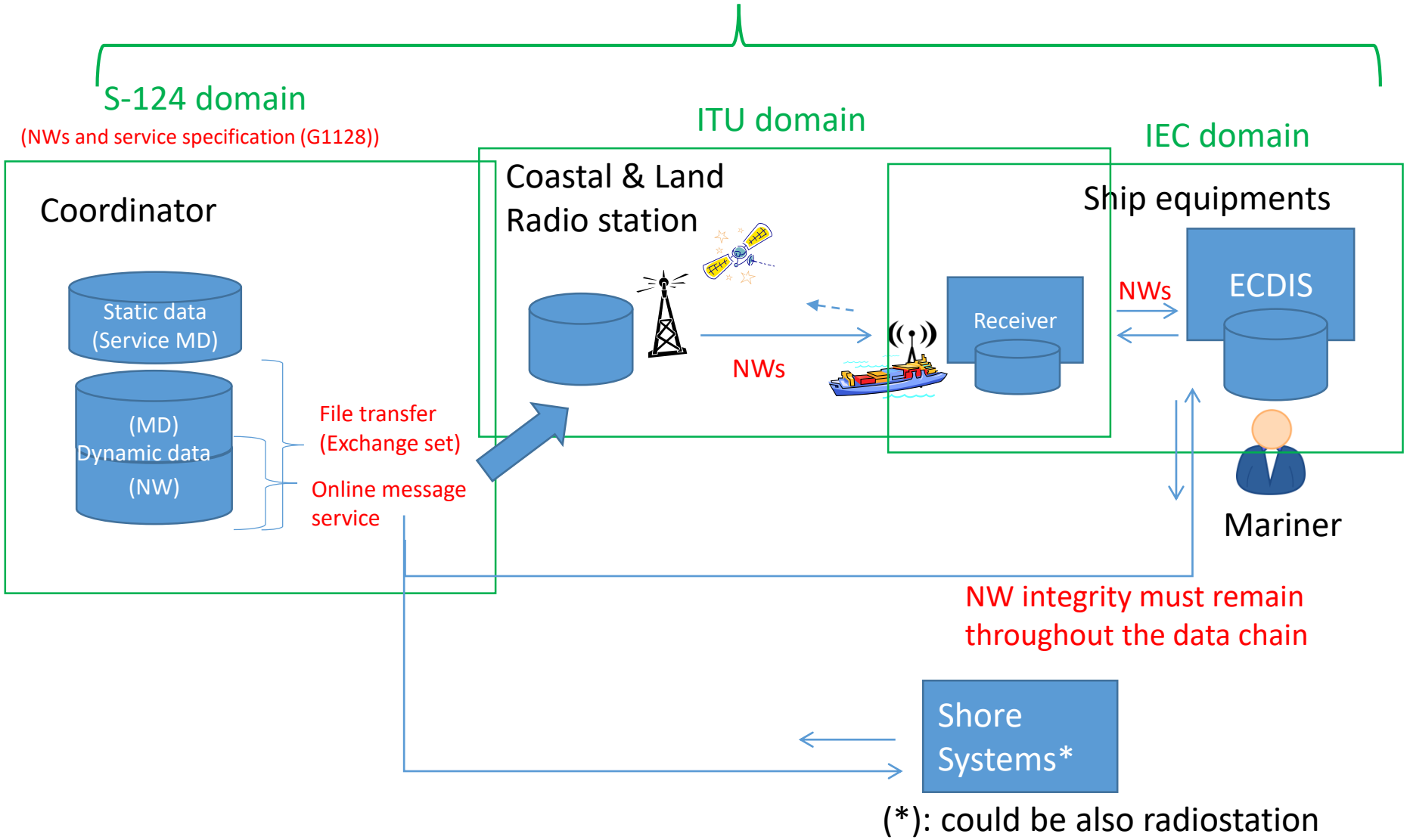
Ongoing Activities

- Data Classification and Encoding Guide (DCEG) will be using the S-53 example NWs, mapped to S-124 format, as a comprehensive discussion on how to use the data model for various types of NW.
  - Annex of S-124 Training Manual.
  - Important to keep alignment with current paradigm for backwards compatibility.

Ongoing Activities – open questions

- Data volume
- The S-100 defined exchange set structure imposes a discovery metadata file on each S-124 dataset of approximate 10KB, while preliminary tests indicate an average NW dataset to be about 3-5KB. This means that for the total exchange set, metadata will account for 66-75% of total data amount. This issue can, to some extent, be mitigated by compression. S-100 Ed 4.0.0 permits ZIP compression (see S-100 part 15).
- Use a different encoding (e.g. 8211 or HDF5)? **However**, metadata is external to the dataset, the improvements offered are limited and likely offset by increased complexity in the production systems
- Another option to reduce data volume is to use the Online Communication Exchange (OCE) (see S-100 Part 14) which would not use the exchange set methodology, but rather send metadata at the beginning of a session and then send only the NW datasets. A drawback is that this specification is still new and largely untested. The IALA ENAV committee is working on testbeds and improved documentation (WWNWS11_S124WS_4.2).

IMO/GMDSS/WWNWS
(GMDSS modernization plan – NCSR 4/29 annex 11
Maritime Connectivity Platform (MCP) could be added)



WWNWS11 recommended to change the correspondence group into a project team to speed up the development with the aim of a version 1.0.0 at the end of 2020 and an operational version 2.0.0 at tend of 2024.