

For WWNWS11

Report of the S-124 Correspondence Group of the WWNWS Sub-committee

submitted by Canada (CCG)

S-124 Product Specification development progress



Membership

- The members are Australia (AMSA), Brazil, Canada (CCG), China, Denmark (DMA), France, Germany (BSH), Greece, Japan, New-Zealand, Norway (NCA), Republic of Korea, Sweden, Turkey, United-Kingdom, United States (NGA), CIRM, Furuno, INMARSAT, Iridium, Kongsberg Norcontrol AS, KRISO, TRANSAS and WR Systems.
- New members include Amund Gjersøe (Kongsberg Norcontrol AS), Elena Maria Gnehm (German Hydrographic Office/BSH), Ed Weaver (WR Systems) and Dave Wilson (Maritime New Zealand) replacing Stuart Caie (LINZ), Mr Malandrenis Panagiotis replacing G. Tyrovolas (Greece).

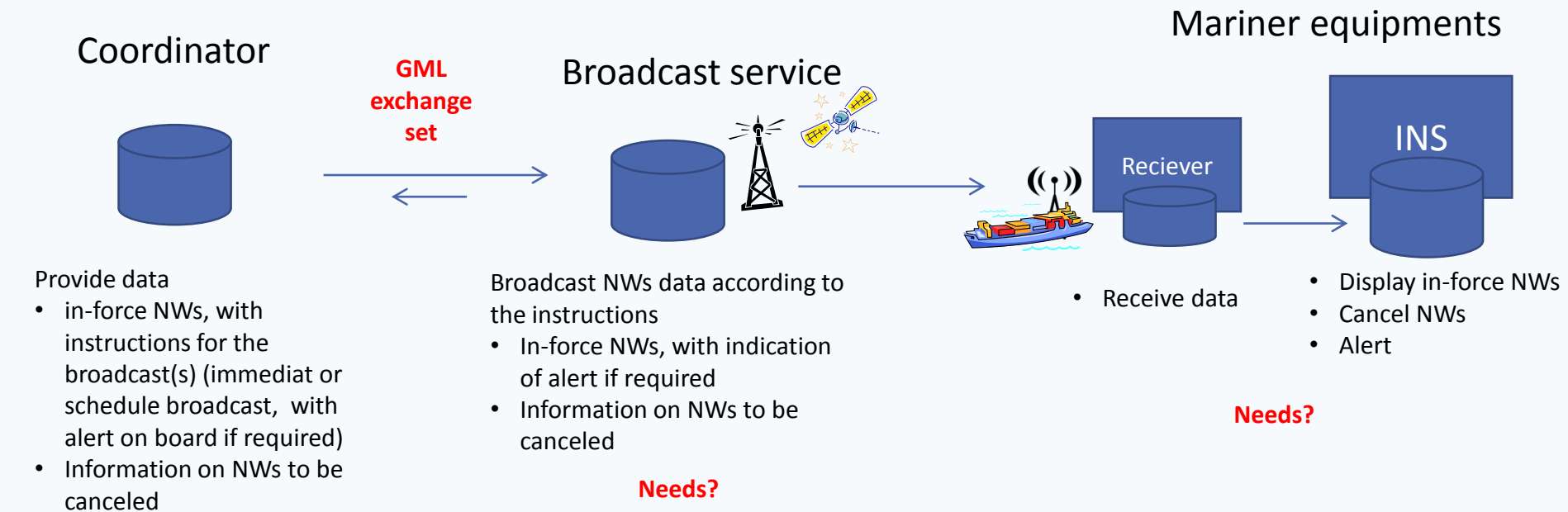


Highlights

- WWNWS10 clarified scope; T and P NtM are not within the current scope of S-124 and data model updated accordingly.
- The data model that included T and P NtM was shared with NIPWG, who is developing an NtM exchange format for printing.
- Ongoing testing of a service in the Baltic area related to STM Validation project.
- Two reviews of draft product specification has been conducted.
- In response to HSSC9/44, CG Chair has attended S-100WG TSM6, NIPWG6 and S-100WG4 to report on S-124 development, seek input on direction of S-124 development, and to remain current with S-100 and related developments.



Development scope



S-124 data + technical services

May provide data to different broadcasters and to other clients.

May broadcast NWs data from different coordinators and from other services

May receive data from different broadcast services or from other applications (including the same NWs data)



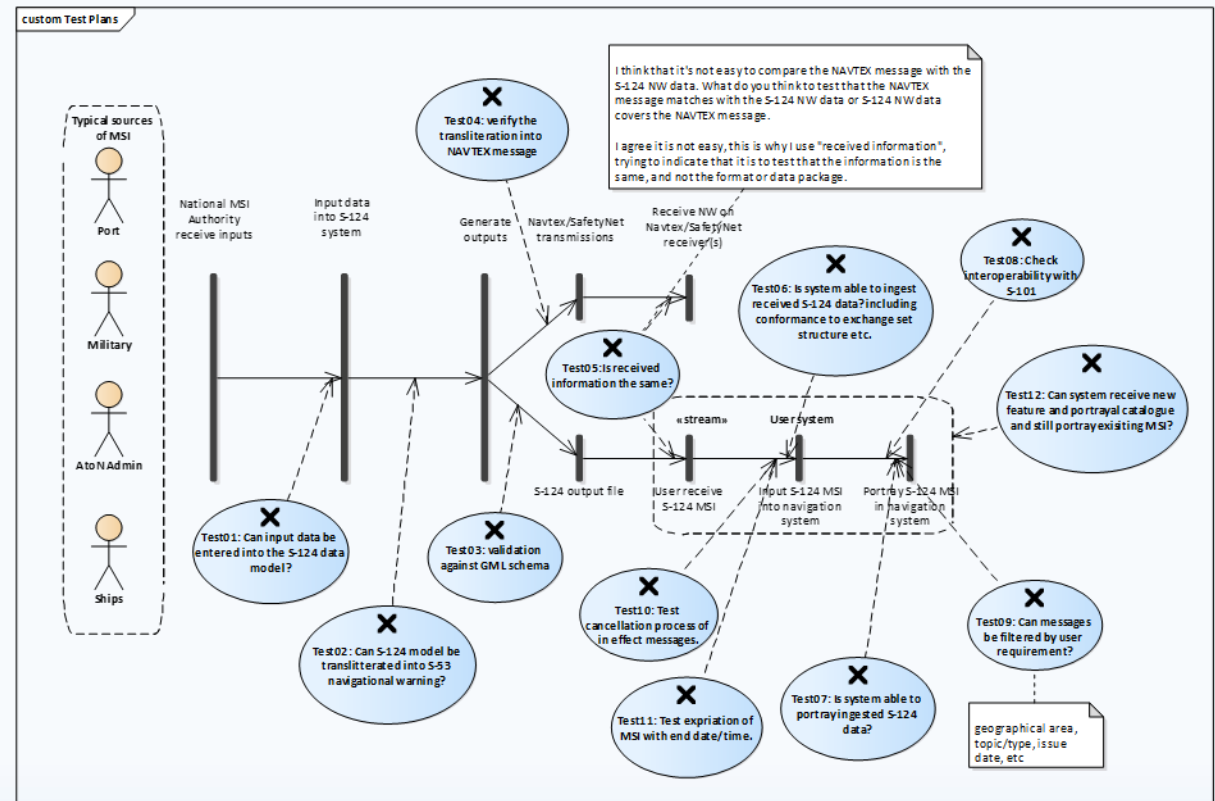
Ongoing Activities

- 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).
 - Consideration given to grouping values and breaking it down into sub lists that are bound together by a complex attributes.
 - Alternative is to accept the list is long and leave each implementation to group the values as best suit the producer.
- Product Specification
 - First draft released for review in October 2018.
 - Second draft released for review in June 2019.
 - Comments being adjudicated.



Ongoing Activities

- Test case development; work lead by KRISO.
- Will include test data.
- Review being done to evaluate the completeness.

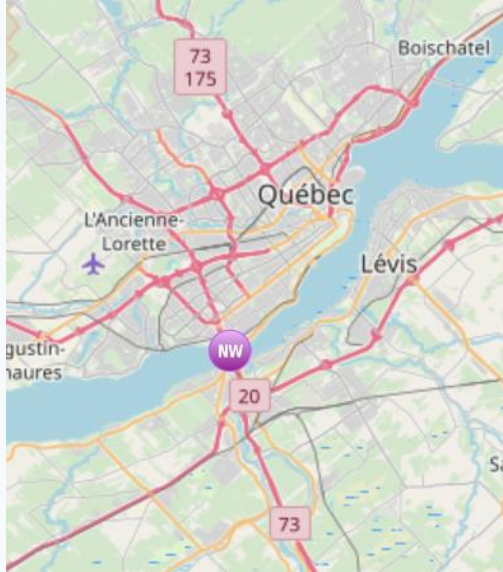


Ongoing Activities

- Valuable input from STM-Validation and SMART Navigation Project continues to support the testing of S-124.
- A team of participants from STM and SMART Navigation meets regularly with the S-124 Chair to coordinate the testing and development of S-124 facilitated by The Marine Connectivity Platform (MCP) consortium.



Ongoing Activities – portrayal



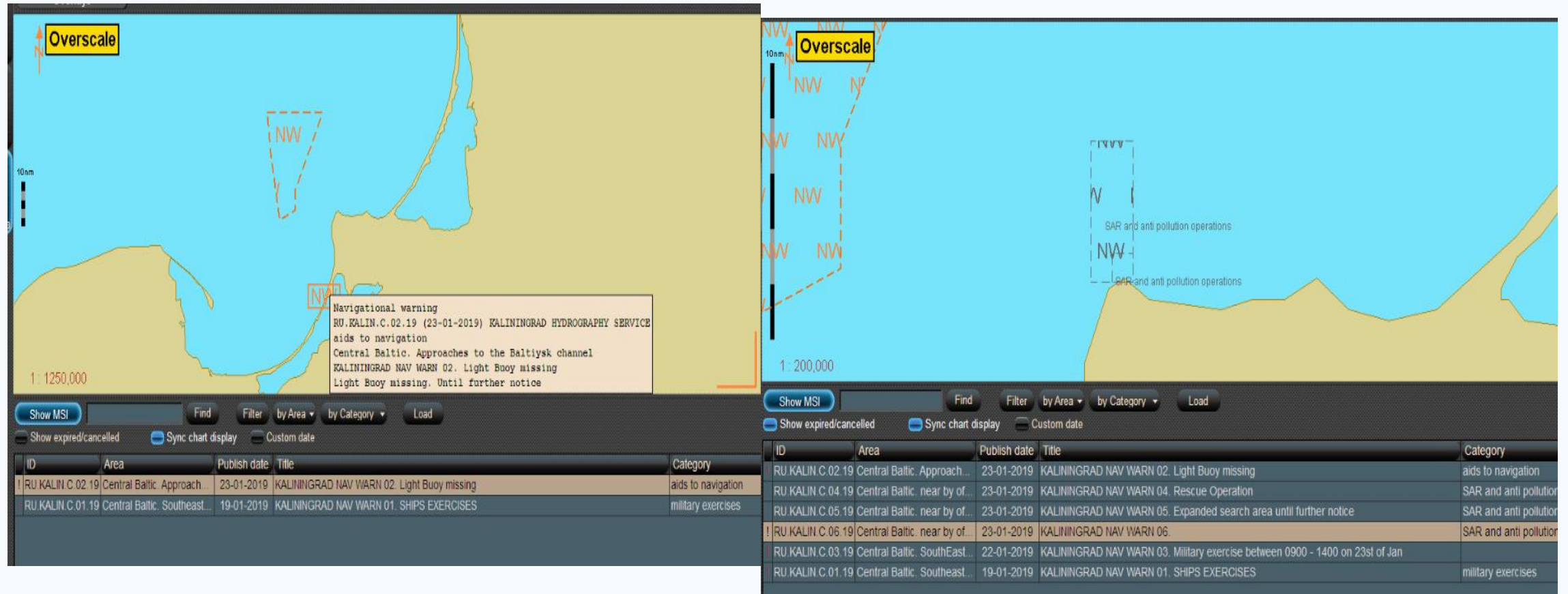
<http://nis.ccg-gcc.gc.ca>



Ongoing Activities – portrayal




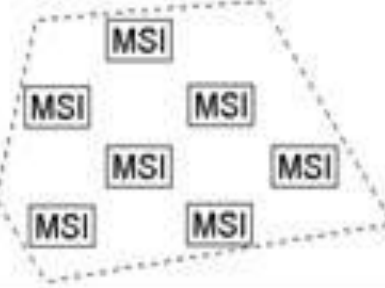

Ongoing Activities – portrayal




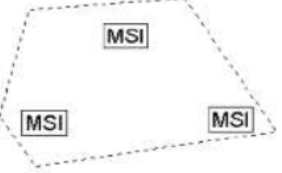
Source: Transas



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 may be NAVTEX, AIS ASM(22, 23), etc.	Example of point symbol  Example of area symbol 
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	

Screen shot from IEC 62288

Topic	Symbol	Description
<u>MSI</u>	Example of point symbol  Example of area symbol 	<p><u>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.</u></p> <p><u>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.</u></p> <p><u>Note that the source of MSI may be NAVTEX, AIS ASM function identifier 22 or 23 (SN.1/Circ.289), etc.</u></p>

Screen shot from NCSR6 report [Guidelines for the Standardization of User Interface Design for Navigation Equipment]

Limitations imposed by IMO and IEC

From NCSR 6 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).



Ongoing Activities – open questions

- Units of measure (UoM)
- Should UoM be more prescriptive in S-124 given that the primary user system is ECDIS and in the ECDIS standards many of the UoM are prescribed? In S-53 Standard Message Element Reference 7, it states NM is the UoM for distances, but it is probably not intended for shorter distances.
- Should we include metres as well?



Ongoing Activities – open questions

- Format of date and time
- The S-53 Standard Message Element Reference 7 for format for the date and time (date time group) is not consistent with S-100 . The S-100 follows ISO 8601:1988 and as a consequence, S-124 inherits this standard too. Though it can be specified to be shown differently in the ECDIS, the overall risk is that S-124 specifies something different from what S-53 currently does.
S-52, Pres.Lib 10.4.1; dd mmm yyyy = Day, Month, Year, example; 28 Jan 2014)
- Are there any circumstances where time/date information must be included in the text attributes? If so, this must be documented in S-124 documents, such as DCEG.



Ongoing Activities – open questions

- Coordinate format in data
- In ISO 8211, encoding coordinates can be encoded as integer values to save data volume. This is achieved by a fixed multiplication factor that makes decimal numbers into whole numbers.
- Is there a need to retain the latitude and longitude multiplication factors in S-124 since GML stores coordinate tuples as a set of float values ? The fields in question are optional (see S-100 10b-9.6.2).



Ongoing Activities – open questions

- Maritime Resource Name (MRN) Identifier
- The GML structure calls for each class/part to have unique identifiers within the dataset.
- Should MRN object identifiers be added for each NW feature part or is a MRN identifier for the whole NW sufficient?



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).



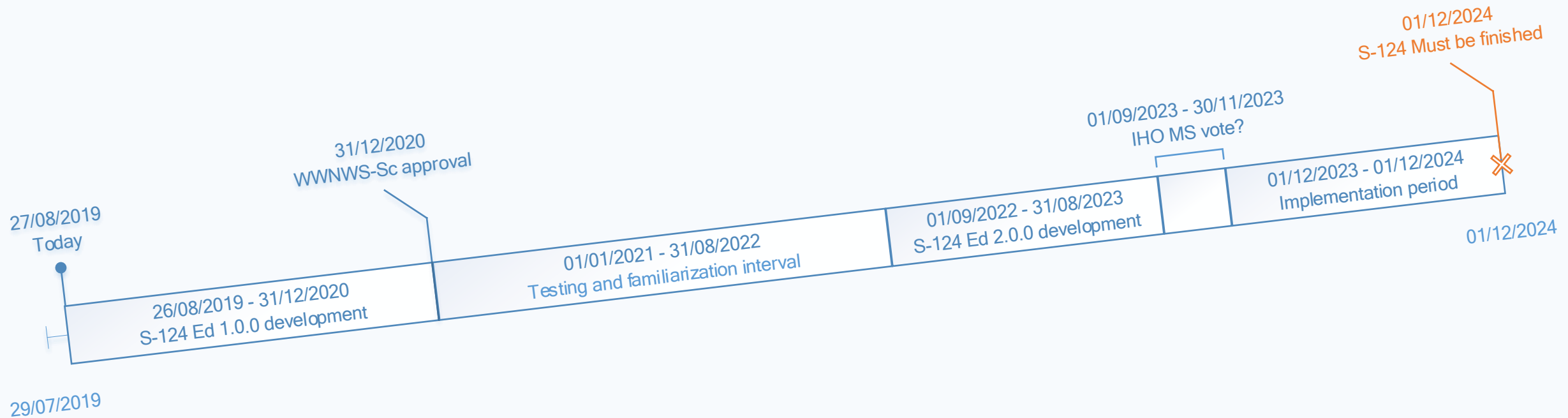
Ongoing Activities – open questions

- Data Classification and Encoding Guide (DCEG) is needed to capture encoding decisions so that the production method of S-124 is as harmonized as possible, and that the risk of unforeseen issues in user systems are reduced as much as possible.
- There may be benefits in 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.



'straw man' timeline

Implications of IHO push for a 2024 operational version (i.e. 2.0 or higher)



Thank you for your attention