S-124 progress

Development of a S-100 Product Specification for Navigational Warnings (S-124)

Submitted by:	Leader of the S-124 Correspondence Group (Mr Yves Le Franc – France)
Executive Summary:	This paper reports on the work of the S-124 CG since HSSC7.
Related Documents:	On IHO/IRCC/WWNWS-SC/S-124 CG web pages
Related Projects:	E-navigation, Modernization of GMDSS.

Membership

Brazil, Canada, China, Republic of Korea (KHOA), C-MAP, TRANSAS and Inmarsat joined the CG during the period. C-MAP is no more involved since September 2016.
The members are:
Australia, Brazil, Canada, China, Denmark (Danish Maritime Authority - DMA), France, Greece, Japan, New-Zealand, Norway, Republic of Korea, Sweden, Turkey, United-Kingdom, United States, CIRM, KRISO, TRANSAS, Inmarsat and Eivind Mong.

Activities since NIPWG 2 - Points to be considered

Introduction

The S-124 CG is focused on the development of the S-100 ProdSpec for the Navigational Warnings (NWs) of the World Wide Navigational Warning Service[1] which is part of the MSI service of the GMDSS. This includes NAVAREA, Sub-area and coastal warnings produced by Coordinators and currently broadcast via SafetyNET and NAVTEX. It is of course highly wished that S-124 be also suitable for local NWs. MET forecasts and MET warnings are not in the perimeter of the CG tasks.
S-124 will be a component of the e-navigation and of the modernization of the GMDSS.

Modeling

The modeling was the main activity during the period.
A NW is essentially HAZARD + POSITION. The goal of S-124 is to structure the data to allow new functionalities on board in response to the end user needs like the improvement of the filtering of the NWs, the automatic report of the NWs in a graphic overlay, over the ENC on ECDIS. The CG previously reviewed the needs and outlined solutions.
NWs are additional information to the chart but they are independent of the ENC content and can be used as a standalone product. So, S-101 ENCs is not a condition for S-124 NWs.

In August 2015, the CG adopted a harmonized model[2] from KRISO-Jeppesen with input from DMA (ACCSEAS project) for the continuation of its work.
This model was modified to reach some expectations:
- Detection by the ECDIS of an event not on the ship's route but in the neighborhood of the route and affecting the safety of navigation along the route (eg. a light unlit on the coast).
- Filtering according to the period of time when the danger subject of the NW is active.
- NWs in English and in national language.
- Easy cross reading from the descriptive text and the associated locations on the chart display.

The last point above is to be addressed more generally for products which provide additional information to the chart via descriptive texts. In the S-124 modeling, the result is that a NW may be a set of several geo-objects (FeatureType) reflecting the separate localized parts of the NW. The use of labels on geometries[3] could also ease the cross reading but the feasibility of that option in using S-100 (GML) has to be confirmed.

[1] Monitored by the IHO WWNWS Sub-Committee.
[2] Beyong the perimeter of the S-124, this model covers also T&P NMs.
[3] Including labels on the nodes of a polygon. The labels are within the descriptive text where locations are indicated, the same labels are shown on the graphic display.

InformationType is also used for information which is not localized (eg. a NW about a malfunctioning of a satellite-navigation service).

The first version of the draft ProdSpec has been issued thanks to C-MAP and data samples of S-124 NWs were produced. They are important results even if the ProdSpec including the model is not stabilized and will evolve further on. It is why the S-124 CG didn't create new elements in the IHO S-100 Registry at this stage.

The GC achieved a "paper" encoding exercise based on various samples of real NWs to review the draft ProdSpec (paper forms reflecting the model were used). The comments provided by members gave indications on how the model should be amended. The changes to be done are under discussion.

Members who are coordinators worry about the complexity of the model and recall that NWs must be easily and quickly promulgated. The structuring of the data must be justified by obvious benefits to the end user noting that the ergonomics of the production systems should help to overcome some difficulties in data creation.

In the close future, demonstrators and test-beds will be useful to make things more concrete and so refine the ProdSpec. DMA has already offered that some of the testing of the model will take place into the EfficienSea 2 project.

The WWNWS context

Coordinators will need a production system for issuing S-124 NWs while the NWs are currently produced using simple text editors of messaging. Thus, S-124 strongly impacts the coordinators.
During the period of transition, NWs will be produced both as current NWs (compliant with S-53) and as S-124 NWs. This fact has to be considered in the design of the production systems and therefore in the design of S-124.

The NWs of the WWNWS are currently broadcast via NAVTEX and SafetyNET in a TELEX format.
Out of the perimeter of the WWNWS, AIS has the capability to exchange navigation safety information via Application Specific Messages (ASM/Area Notice) in a specific binary format. S-124 NWs will be data in S-100 format, i.e. an ISO format like GML or ISO8211. So, the current NAVTEX, SafetyNET and AIS will not be able to convey NWs in S-124. Therefore, S-124 NWs should be distributed by new communication systems (NAVDAT, VDES, …) identified in the modernization plan of the GMDSS under development. The developpement of technical and operational recommendations for the services of these new communication systems should be included in the modernization plan of the GMDSS.

Development of new systems on-board

The S-124 CG was involved in the IHO response to the new IMO draft Module F of the Performance Standards for INS (Display of information received via Communication Equipment – coordinated by China).

The S-124 CG contributed to the Product Specification Interoperability Analysis carried out by the S-100WG.

The S-124 CG will liaise with the NIPWG which is part the correspondence group coordinated by Norway on the development of the "Guideline for the Harmonized display of information received via communication equipment".

These items will contribute to define the portrayal of the NWs. This subject will be addressed when the model is stabilized (2017).

Way ahead

The group's work will continue schematically on the following topics (tentative schedule):

- Review the ProdSpec for a version ready for test-beds (2017)
- Define the portrayal of the NW (2017-2018)
- Proceed to test-beds in relation with projects (2017-2018)

- Submit S-124 PS for endorsement (2019 ?)

The S-124 CG will continue to liaise and cooperate with NIPWG on subjects of common interest. Action Required of the NIPWG

The NIPWG is invited to note the report.