

## **S-124 Progress Report**

### **Development of a S-100 Product Specification for Navigational Warnings**

Submitted by Leader, S-124 Correspondence Group

<b>Submitted by:</b>	Leader of the S-124 Correspondence Group (Mr Yves Le Franc – France)
<b>Executive Summary:</b>	This paper reports on the work of the S-124 CG since WWNWS7.
<b>Related Documents:</b>	On IHO/IRCC/WWNWS-SC/S-124 CG web pages
<b>Related Projects:</b>	E-navigation, Modernization of GMDSS.

#### **Membership**

Brazil, Canada, Republic of Korea (KHOA), C-MAP and TRANSAS joined the CG during the period.

The members are:

Australia, Brazil, Canada, Denmark (Danish Maritime Authority - DMA), France, Greece, Japan, New-Zealand, Norway, Republic of Korea, Sweden, Turkey, United-Kingdom, United States, CIRM, C-MAP (ex Jeppesen Marine), KRISO and TRANSAS.

#### **Activities since August 2015 - points to be considered**

##### **S-124 product specification**

The activity of the CG was focused on the modelling of the navigational warnings (NWs). The KRISO-Jeppesen harmonized model with input from DMA was presented to the CG during its last meeting (28<sup>th</sup> August 2015). The CG decided to adopt this model for the continuation of the work.

A “paper” encoding exercise was planned to review the model on the base of examples of NWs that members provided. The objective is that modelers and coordinators work in a closely way.

Preliminary discussions between DMA, C-MAP, France, and KRISO have led to make some changes in the model before launching the exercise.

The first version of the draft product specification (PS) has been issued. It is an important result even if the PS is not stabilized and will evolve further.

The “paper” encoding exercise was launched at the end of April 2016. It appears that the exercise is difficult and makes coordinators puzzled in general. Several reasons could explain this issue:

- The technical description of the model is not easy to understand for people not familiar with modeling (UML, S-100...) which is primarily for system integrators and software developers.
- The paper form of the exercise: new production systems will be needed to produce S-124 data. The producer will only see the user interface. The ergonomics of the user interface of such systems are missing in the paper exercise.
- The proposed model is complex. The complexity of the data structure must be justified by the expected functions requiring it for the use of NWs via the on board system (ECDIS) and by the ability of coordinators to produce such data. This review is the main task of the CG in the next future.

It is essential that coordinators members of the CG take ownership of the PS and contribute to its development, even if it is a hard task.

The way should be to explain the model in a better manner, without further technical details, to facilitate the exercise. The goal is to catch the views and so, to amend the model on some points.

After that, demonstrators for the production of NWs and for the use of S-124 data on board would be very helpful to refine the PS.

DMA has already offered that some of the testing of the model will take place into the EfficienSea 2 project (2015-2018).

A mechanism for the management of S-124 NWs status (in force - cancelled) by the system on board should be defined. The current methods as defined in the Joint IMO-IHO-WMO Manual are imperfect and then, cannot be replicated.

The issues with the current methods were reported to DRWG14 meeting.

### **Modernization of GMDSS and S-124 NWs**

The NWs of the WWNWS (NAVAREA, sub-area and coastal warnings) are currently broadcast via NAVTEX and SafetyNET in a TELEX format (a limited text format).

Out of the perimeter of the WWNWS, AIS has the capabilities to exchange navigation safety information via Application Specific Messages (ASM/Area Notice) in a specific binary format.

S-124 NWs will be files in an S-100 format, ie an ISO format like Geography Markup Language (GML) or ISO8211 (binary file).

So, the current NAVTEX, SafetyNET and AIS will not be able to convey NWs in S-124.

S-124 NWs should be distributed by communication systems able to convey digital files without imposing a format. It is the condition of the interoperability of the data. That means that the data is not specific to one communication system with its associated receiver aboard. The data complies with the common maritime data structure (CMDS) for e-navigation (ie S-100).

This point should be considered in the modernization plan of the GMDSS under development. Reciprocally, the S-124 CG will have to consider the capabilities and the requirements of the communication systems of the modernized GMDSS (systems like NAVDAT and others).

S-124 is a component of the modernization of the GMDSS/WWNWS. The modernization should integrate a scenario of transition where S-124 NWs coexist with the current NWs. This dual production must be taken into account in the design of S-124 (ie for future dual production systems and dual broadcast) even if capabilities for more advanced services could be considered.

### **Performance standards for Integrated Navigation Systems (INS)**

S-124 is designed to allow functions aboard via INS (graphic display in an overlay, over ENC on ECDIS; indication of dangers along the planned route; time of CPA and period of time of the danger; etc). The CG has previously outlined those functions. This work can be used for IHO contribution to the development of new performance standards for INS or of guidelines related to NWs display.

### **IALA**

The leader of the CG reported on S-124 progress during the 17th meeting of the IALA's ENAV committee (October 2015). The CG's work was explained and its perimeter was clarified:

- Only NWs within MSI (not MET info)
- Firstly focused on NWs of the GMDSS (WWNWS): NAVAREA, sub-area and coastal warnings as described in the Joint IMO/IHO/WMO Manual on Maritime Safety Information.

The presentation was welcomed. IALA work on S-100 PS for NWs has ceased, in recognition of the IHO development of S-124.

Within IALA, France suggested that IALA PS S-201 "Aids to navigation information" describes the casualties to aids to navigation for exchanges from Lighthouse Authorities to coordinators.

### **HSSC**

The S-124 progress was reported at HSSC 7 (November 2015). It was explained, for HSSC consideration, that the KRISO-Jeppesen harmonized model with input from DMA is a combined model for NWs and Temporary & Preliminary NMs, specifying that the S-124 CG is only focused on the NW aspects of the model. It was recalled that temporary and preliminary notices for ENCs are taken into account in the S-101 development and more generally studied by NIPWG within Maritime Service Portfolios (MSP) specifications.

### **Way ahead**

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

- Review the PS for a version ready for test-beds (2017)
- Define the portrayal of the NW (2017-2018)
- Provide outputs toward other relevant organizations (INS performances standard, Guidelines for the provision of NWs, consistency with others products and services...) and exchange. (when appropriate)
- Proceed to test-beds in relationship with projects. (2018)
- Reach a consensus on the draft S-124 by demonstrating its contribution to the development of solutions and its feasibility (impact on the stakeholders) including the scenario of transition. (2018)
- Submit S-124 PS for endorsement.(2019)

**Action Required of the WWNWS-SC**

The WWNWS-SC is invited to:

- a. note the report
- b. advice the group as appropriate