

From: IALA ARM Committee  
To: IHO NIPWG

ARM12-11.3.1.2  
22 October 2020

## LIAISON NOTE

### S-125 Marine Navigational Services Product Specification – Vision outline

#### 1 INTRODUCTION

IHO NIPWG welcomed the IALA offer in drafting of S-125, Navigational Services, as a dataset-based on S-201, Aids to Navigation Information, and requested that S-125 should provide navigationally significant information additional to the data currently available in S-101. ARM11 drafted the S-125 vision outline and ARM12 finalized this outline.

This paper provides an update of how IALA ARM Committee proposes to develop S-125 in-line with the instructions from NIPWG.

#### 2 DETAILS

S-201 is a standard for exchanging all information related to any AtoN including metadata like maintenance schedules, equipment types (such as battery and bulb types). S-201 is intended to be the means of communicating such information within an AtoN organization or between AtoN organization and its main partners such as hydrographic offices. S-201 is not intended to be for navigation systems like ECDIS, and therefore is not constrained by ECDIS requirements. This means the S-201 can include additional cartographic information to inform about AtoN services that would not be appropriate in a navigation system.

S-125 meanwhile, would be a derivative of S-201 service as the public facing information for use in ECDIS/ECS. In other words, S-125 would be the digital equivalent of the extended list of lights in order to meet IMO SOLAS V requirements of having list of lights on board and serve as a continually updated list of AtoN, including virtual AtoNs. It is also envisioned that following scenario illustrates how S-125 would work with the S-124 MSI Product Specification:

- ❖ An AtoN Outage is reported and immediately communicated by S-124. Upon confirmation of the outage, the responsible AtoN authority will move the report of outage from S-124 into the S-125, thereby relieving S-124 of old, but still active information.

S-125 will include the attributes necessary to digitally populate discrepancies, proposed changes, Advance Notice of Change and Temporary Changes.

S-125 will support both route planning and route monitoring functions of any voyage. It is further envisioned that S-125 can contribute to the check route function of S-100 based ECDIS. This means that S-125 and S-421 can complement each other.

In order to support the above vision, S-125 will be developed using S-100 Edition 4 but may utilize later versions should these become available during the development phase. S-125 compliant datasets will contain the AtoN information within the dataset area of coverage and delta changes to these datasets will contain the change information.

An S-125 service will be able to issue any change information more rapidly than what is expected from an ENC service. This is required to provide the navigationally significant information additional to the data currently available in ENC. Should the ENC service subsequently include the updated information, this information status change can then be reflected in the S-125 service.

Portrayal of AtoN information in an S-125 compliant dataset will be governed by a portrayal catalogue. This will be a required component of S-125 in order to meet the sufficient S-100 compatibility level that allows for use in ECDIS. The development of a portrayal catalogue also allows IALA to specify the appropriate portrayal for AtoN information. It is important to remember that since ECDIS is a target user system, all portrayal specifications must follow relevant IMO guidelines, such as SN.1/Circ.243 as amended.

S-125 product specification development will explore functionality within GML, including upcoming enhancements that better permit delta change functionality, as the means of packaging relevant data into datasets for ingestion into ECDIS/ECS.

It may be necessary to enhance the S-100 framework standard to support these envisioned goals which will necessitate writing and submitting change proposals to S-100WG. Such submissions can be done jointly between ARM Committee and NIPWG.

AtoN information must be of highest possible quality to be considered useful in ECDIS/ECS. Some AtoN information currently in ENC have been altered from the source information to better fit with related features such as coastline using cartographic principles. Providing for such alterations would be unlikely in a S-125 service, and the focus should therefore be on providing the most accurate positional and descriptive information possible. S-125 will contain sufficient instructions to highlight the need to focus on data quality.

S-125 will require an implementation guide that should act as a living document which captures lessons learned and provides best practice for implementation and operation of an S-125 service. In order to keep such a guide relevant and up to date regularly, it may be beneficial to keep such guidance outside of the S-125 document bundle and thus reduce the risk of having to update the other S-125 documents with version changes of the implementation guide. The ARM committee envision itself to be the maintainer of this guidance document as an IALA document.

Since S-125 is intended for ECDIS, it is required that S-125 consider any impact on S-98, which is the Interoperability Catalogue Specification for ECDIS. This standard will govern how the various product layers will interact within an ECDIS and it is therefore important that the intentions with S-125 be communicated to the IHO. Within the IHO, S-98 is developed and maintained by S-100WG. Such communication can be undertaken jointly between the ARM Committee and NIPWG.

It will be necessary to develop an operational service specification (according to the final version of ARM12-11.3.1.1 and ARM12-11.3.1.1.1), and service specification/ service technical design (G1128).

### **3 RELATED PAPERS**

- G1143 – Unique Identifiers for Maritime Resources.
- IHO S-100 4.0
- IALA S-201 Aton Product Specification 1.0, 2019.
- IALA ARM12-11.3.1.1 and ARM12-11.3.1.1.1 Guideline on the development of a description of a maritime service in the context of e-Navigation plus annex.

### **4 Related Meetings**

- IALA ARM12 (28 September – 22 October 2020)
- IALA ARM13 (Planned for 12 – 16 April 2021)
- IHO NIPWG8 (22 - 26 March 2021)

## 5 Action requested

The IHO NIPWG is requested to:

- 1 Review the S-125 vision outline and provide feedback and comments to the ARM Committee, by the input paper deadline for consideration at ARM13.