Paper for Consideration by S100WG

Unique Identifiers for Maritime Resources (IALA G1143)

Submitted by:	IALA – Aids to Navigation Requirements and Management (ARM) Committee
Executive Summary:	Introduction of IALA Guideline G1143
Related Documents:	S-100, S-101, S-125, S-201
Related Projects:	Any related projects that may impact upon considerations

Introduction

The use of unique identifiers is a necessary development of e-Navigation to maintain harmonization across domains and services. Navigationally unique objects such as marine aids to navigation and other maritime services requires identification numbers to avoid duplication and misalignment.

Worldwide harmonised identification of unique identifiers for maritime resources can:
• assist in the development and maintenance of enhanced data exchange applications for ship to ship, ship to shore, shore to ship and shore to shore in the context of e-Navigation;
• assist administrations in the efficient delivery of Marine Safety Information (MSI); and
• reduce the administrative burden associated with the maintenance of international list of lights numbers and other navigation products.

This is not unique to the maritime domain, and this guideline describes a syntax for Maritime Resource Names (MRN) based on proven methods from the internet domain, that will enable members to issue unique identifiers for objects such as AtoN, Nautical products and services, waterways, etc. in a format that is designed to be compatible with existing products such as List of Lights, yet interoperable with usage in different domains such as Electronic Navigation Charts (ENC).

The 'Maritime Resource Name' and the associated 'Experimental' namespaces defined by IALA's guideline can be applied in numerous areas within the maritime domain, and other maritime stakeholders are invited to adopt this syntax for creation of unique identifiers, through registration in the Annexes.

Background

The International Hydrographic Organization (IHO) has noted in the paper HSSC6-5.4B the problems HOs may be confronted with if the existing light numbering schema is subject to changes by either the producing HO (national light numbers) or the UKHO (international light number). The paper discussed the advantages of a Persistent Unique Identifier1 for lights and possible consequences. The support of the IMO e-Navigation solution S3 was highlighted. In addition, the possible effects on the workload for HOs which are deriving their products from a single database were mentioned. It was considered that some technical questions remain open for the time being. The paper proposed the establishment of a close IALA-IHO liaison on the light numbering development in particular and additionally, the harmonisation of the light numbering systems between the IHO and the IALA to the widest extent.

Analysis/Discussion

Persistent global identifiers are needed in order to maintain data object identity as data objects pass through the data chain, are stored in different data stores, transformed to different formats, and re-purposed for different domains. The same chunk of information may be present in different data stores in different formats (ISO 8211, XML, relational database record, etc.). Using a persistent identifier for the same chunk of data in all formats and stores will obviously help harmonization, validation, and tracking of data across multiple application domains and at different places in the data supply chain. Similarly, for data integration, especially references to features in a different data product and data set from the referring feature, require persistent identity.

Uniform Resource Names (URN) as defined by the IETF (Internet Engineering Task Force, which has standardised protocols like IP, http, FTP and other Internet protocols) are intended to serve as persistent, location-independent, resource identifiers and are designed to make it easy to map other namespaces (which

share the properties of URNs) into URN-space. Therefore, the URN syntax provides a means to encode character data in a form that can be sent in existing protocols, transcribed on most keyboards, etc. The URN syntax provides a mechanism to ensure the uniqueness of the name of a resource.

This guideline describes how the URN methodology is applied to identifying maritime resources within a Maritime Resource Name (MRN). This syntax allows decentralisation of the management of identities. It is envisaged that already existing numbering schemes can be fitted into this syntax relatively easily, providing backwards compatibility, while the syntax is extendable to new areas of application.

Action Required of S100WG
The S100WG is invited to note IALA Guideline G1143.
The S100WG is requested to consider the implementation of MRN in future product specification developments.

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