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Paper for the Information of HSSC

Feasibility Study into Using S-100 for Non Hydrographic Marine Applications

Submitted by:	Norway
Executive Summary:	This paper introduces a report from Norway confirming that it is practical and feasible to use S-100 as the data model for a digital Notice of Arrival and Pilot Request service.
Related Documents:	1. HSSC3-05.1A (para. 2.1)

Introduction

1. The Norwegian Coastal Administration (NCA) is the National Competent Authority for the European SafeSeaNet (SSN) in Norway and thereby maintains a vessel and voyage reporting system intended for use by commercial marine traffic arriving and departing Norwegian ports. The system is intended as a single-window for filing *Notices of Arrival*, *pilot requests*, and other forms required of commercial shipping. Data used in the SSN describes vessels, HAZMAT cargo, voyages, and information used in arranging pilotage. As part of the implementation of SSN, and mindful of the implications for the emerging e-Navigation concept, the NCA sponsored an investigation into the feasibility of using S-100 as the basis for some SSN services.

2. Norway recently presented a paper to the 10th meeting of the IALA e-Navigation Committee describing a successful investigation in modeling substantially non-geographic maritime information using the S-100 framework, specifically Notice of Arrival and Pilot Requests (NOAPR) in Norway. The paper discusses the use of the IHO S-100 Geospatial Information Registry and the NOAPR Model.

3. On behalf of the NCA, Jeppesen developed a product specification (the "NOAPR product specification") based on the S-100 standard, for a subset of information used in the SSN. The product specification describes the data model for ship reporting and pilot requests. The current version is a "proof-of-concept" intended to explore the development of S-100 compatible data models for non-geographic maritime information.

4. For further information, a copy of the paper e-NAV10/INF/7, that includes full details of the Product Specification developed so far, is available for download from the IHO HSSC-3 documents webpage.

Principal Conclusions of the Study

5. The results of the work suggest that:

   a. Development of compatible models under the S-100 framework is feasible for a variety of domains including some which are largely non-geographic.

   b. Content can be readily modelled using S-100, but some inefficiencies in data format and product structure exist when devising a model for non-geospatial data, due to the fact that S-100 is designed for geospatial information. For IALA and IMO domains, it might be advantageous to use the content modelling portions of S-100 (feature classes, information classes, associations, spatial representations, etc.) for content, and adapt the data format, transfer set structure, and metadata portions of S-100 to the special circumstances under which IMO/IALA data is transmitted or "exchanged". Adaptations of the S-100 model should be explored with TSMAD.

      1) The S-100 concepts of cells, exchange set, and data set should be adapted for message-oriented data and temporally focused data, as compared to data with a spatial focus.

2) Metadata and data quality components of S-100 can be used, but may be too complex for IMO and IALA data and should also be reviewed to make them more flexible.

c. S-100 compatible models will facilitate advanced functionality in computer applications, as demonstrated by the use case in this document.

d. For concepts which are already defined in the ENC or Nautical Publications domains, re-use of model elements (objects/attributes) should be encouraged. Data compatibility and cross-domain data integration will need to be addressed when building a data model.

e. Use of the IHO registry for creation and dissemination of data models and product specifications is encouraged.

f. Work in TSMAD and SNPWG on specifications for integration of auxiliary navigation information with ENCs and other forms of S-100 compliant data should be monitored and participated in as appropriate with the purpose of facilitating good integration of IALA or IMO data with S-100 compliant data.

Action required of HSSC

6. HSSC is requested to:

note this paper.