

Paper for Consideration by NIPWG

[Work Status S-128 development]

Submitted by:	Republic of Korea (KHOA)
Executive Summary:	This paper describes the status of S-128 development.
Related Documents:	NIPWG5-10.1 S-128 Development: Status Report NIPWG4-19.1 Review of comments on S-128 Application Schema NIPWG3-29.1 Results of designing Application Schema for S-128 Catalogue of Nautical products NIPWG2-29.1 Status of S-128 Product Specification for Catalogue of Nautical Products NIPWG1-21.2 Proposal of a new S-10X Prodspec on catalogue of charts and publications
Related Projects:	KHOA S-100 Test bed project

Introduction / Background

KHOA was tasked to develop S-128 CNP (Catalogue of Nautical Products) Product Specification and reported the draft of S-128 application schema in the NIPWG5. NIPWG5 discussed the application schema and agreed with the continuing development of S-128. This paper describes the status of S-128 development.

Analysis/DiscussionDiscussion of S-128 Application Schema

NIPWG5 discussed which type of Feature type or Information type would be used for the information of S-128 application schema and decided to use Feature type considering that Feature type without spatial information could be defined as no geometry. Based on the NIPWG discussion, Feature types in the S-128 application schema has been retained.

Inclusion of e-Navigation service in the S-128 application schema

The scope of S-128 CNP PS includes e-Navigation service as well as traditional nautical products like charts and nautical publications. The NIPWG discussed the inclusion of e-Navigation services and it has been required to consider the MCP (Maritime Connectivity Platform) which has been developing to develop IMO e-Navigation service. MCP (formerly known as the Maritime Cloud) is a communication framework enabling efficient, secure, reliable and seamless electronic information exchange between all authorized maritime stakeholders across available communication systems.

The core components of MCP are Identity Registry, Service Registry and Messaging Service. The Service Registry is for registering, discovering and using all relevant e-Navigation and e-Maritime services, commercial and non-commercial, authorised and non-authorised, for free and against payment. It can be seen as a sophisticated yellow pages phone book or the equivalent of an App Store. Every e-Navigation services are supposed to be registered in the Service registry and the followings were defined for e-Navigation service instance.

Table 1. Description of e-Navigation service instance

Name	<i>Service instance name</i>
ID	<i>Unique identity of service instance</i>
Version	<i>Version of the XYZ service instance</i>
Technology	<i>Indication of the technology used and supported by this instance (for example REST or SOAP).</i>
Service Specification ID	<i>Reference to the service specification</i>
Service Specification Version	<i>Reference to the service specification</i>
Service Design ID	<i>Reference to the service design</i>
Service Design Version	<i>Reference to the service design</i>

Note: FOR REASONS OF ECONOMY, DELEGATES ARE KINDLY REQUESTED TO BRING THEIR OWN COPIES OF THE DOCUMENTS TO THE MEETING

Description	<i>Short description of the XYZ service instance. The description shall contain an abstract of what a service implementation actually does and what the service consumer should know about how the service implementation works in this instance.</i>
Keywords	<i>Keywords that can be used to find the service instance in the service registry</i>
Supplier	<i>Identification of organisation supplying this service implementation/instance</i>
Status	<p><i>Status of the service implementation/instance in the engineering lifecycle – either “Provisional”, “Released”, “Deprecated” or “Deleted”.</i></p> <p><i>“Provisional”: the service instance is (partly) available, but not yet officially released.</i></p> <p><i>“Released”: the full service instance is ready.</i></p> <p><i>“Deprecated”: service instance is announced to become invalid in near future.</i></p> <p><i>“Deleted”: service instance is not valid any more.</i></p>

In future navigation environment, it is expected that e-Navigation service will be activated based on maritime communication network in addition to traditional nautical products like charts and nautical publications. KHOA updated the S-128 application schema considering the definition of e-Navigation Service Instance for MCP Service Registry. The updated application schema can be found in the S-128 product specification. Based on the discussion of NIPWG, the S-128 application schema will be updated continuously.

Drafting the S-128 PS Document

KHOA assessed that the S-128 application schema was stable and started to develop the S-128 PS document. It was drafted based on the S-100 ed. 3.0 and written considering the S-122 Marine Protected Area, S-123 Radio Services, S-127 Marine Traffic Management. The drafted S-128 PS was separately submitted to the NIPWG6 for reviewing by NIPWG members.

Update of S-128 FC/PC and Test in the S-100 Viewer

KHOA has drafted the S-128 Feature Catalogue, Portrayal Catalogue and Test datasets, and the study results were reported to the NIPWG5. Since major changes of application schema was to include the part of e-Navigation service, there were no changes in the part of traditional nautical products. Fig. 1 and Fig. 2 shows the testing results of paper chart TDS in the S-100 Viewer. Fig. 3 shows the testing results of nautical publication TDS in the S-100 Viewer.

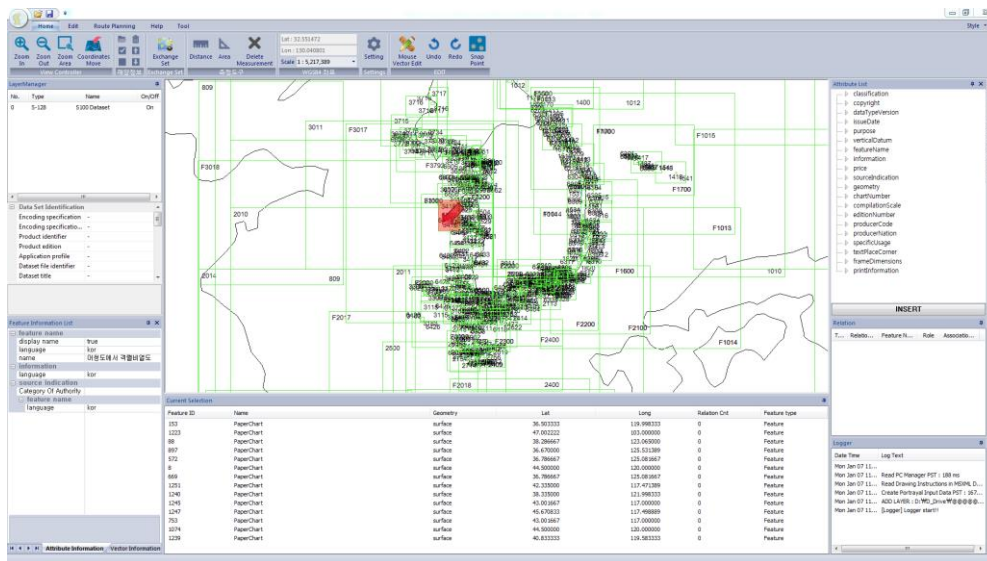


Fig. 1 Testing the S-128 TDS (Paper chart) without S-101 ENCs

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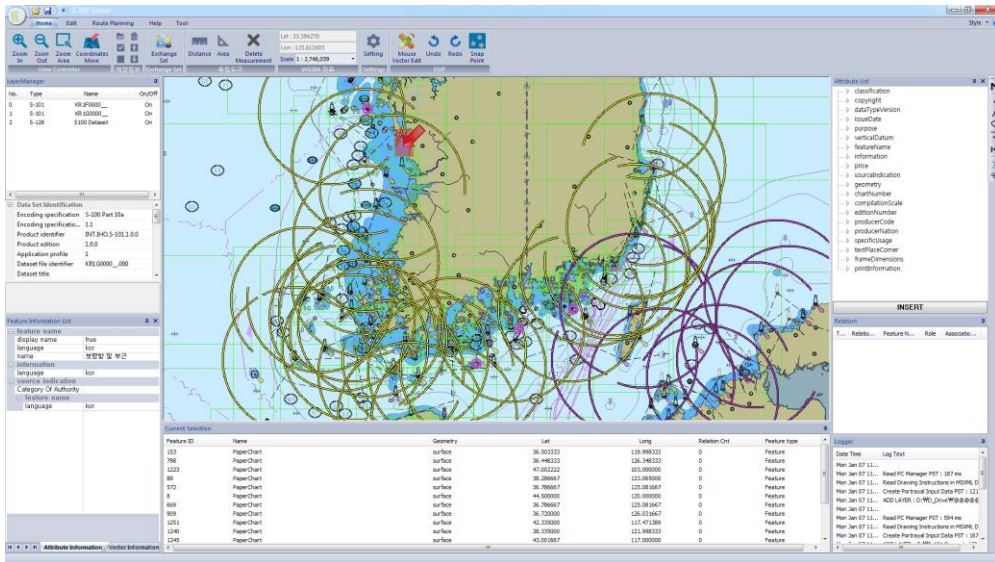


Fig. 2 Testing the S-128 TDS (Paper chart) with S-101 ENCs

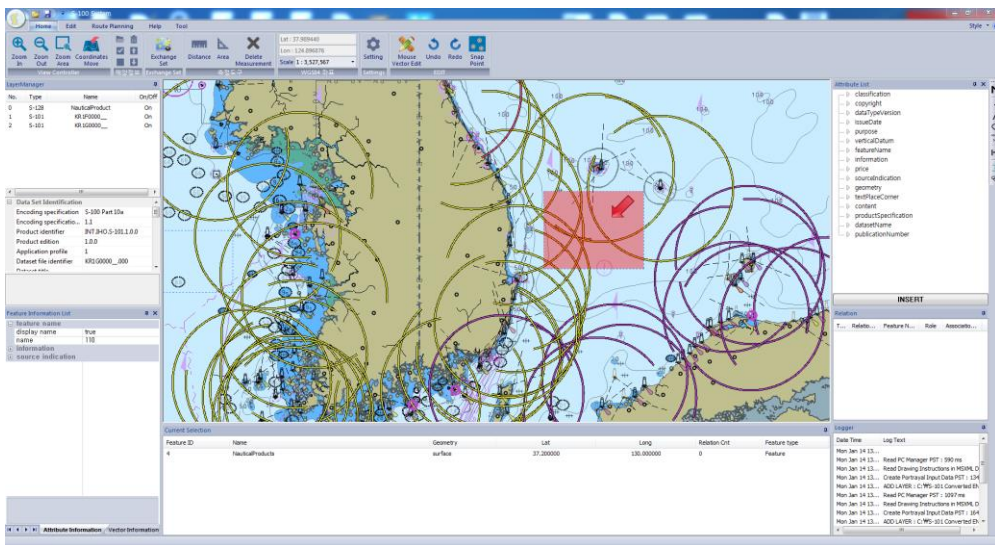


Fig. 3 Testing the S-128 TDS (Nautical publication) with S-101 ENCs

Application to KHOA Chart Catalogue Service

KHOA has been providing a chart catalogue service for paper chart and ENC. The research team applied the S-128 application schema to the service. Fig. 3 shows the screen shots of chart catalogue service and a function was developed to download catalogue of selected nautical products as S-128 data formats.



Fig. 3 Testing the S-128 PS with the Chart Catalogue Service of KHOA

Meanwhile, KHOA contributed to the development of INT chart management system named as INTOGIS project. In 2018, a study was conducted to improve the system. Fig. 4 shows the screen shots of improved system and a function was developed to download catalogue of selected INT charts as S-128 data formats.

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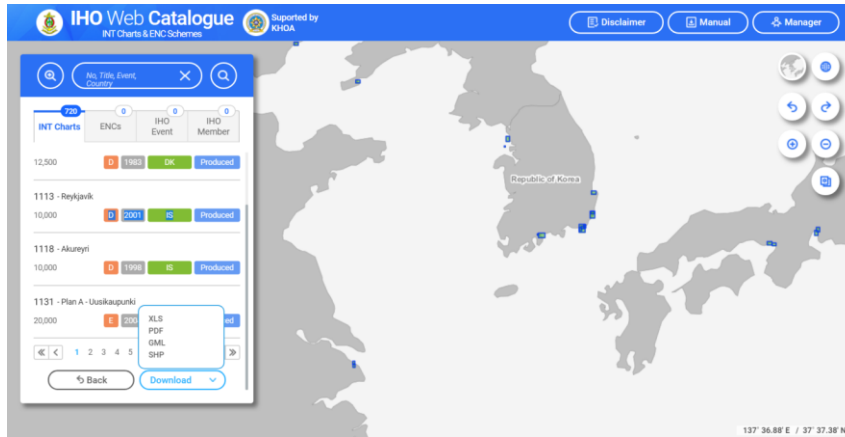


Fig. 4 Testing the S-128 PS with the INT chart catalogue service

Future plan of S-128 development

KHOA updated the application schema and drafted the product specification of S-128. Based on the discussion of NIPWG6, the application schema and product specification will be improved continuously. After the annexes of S-128 CNP are finished, the PS packages to be submitted as ed. 1.0 will be reported to NIPWG7.

Conclusions

KHOA updated the S-128 application schema considering the definition of e-Navigation service instance in the Service Registry of MCP and drafted the PS documents. Based on the S-128 study results, S-128 TDS were created and tested in the S-100 Viewer. The S-128 application schema was also applied to the KHOA Chart catalogue service and research system of INT chart catalogue service.

Recommendations

The scope of S-128 CNP PS was discussed as including e-Navigation service as well as traditional nautical products. In order to consider this requirement, S-128 application schema was updated. It's recommended to review the updated application schema and drafted product specification document.

Action Required of NIPWG

The NIPWG6 is invited to:

- a. Note and discuss the paper.
- b. Review the updated application schema and S-128 PS draft document
- c. Support the continuing development of S-128