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Input paper for the following Committee(s): check as appropriate Purpose of paper:

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Technical Domain / Task Number 2 Working Group 2 / Task 5.1.11

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S-201 Test bed Project of ROK

# Summary

## Purpose of the document

The S-201 AtoN Product Specification has developed using the S-100 infrastructure and tools according to how to create S-100 based PS. The content of S-201 is rather complicated and contains a lot of conceptual contents. A test bed was required to test S-201 and check the expected benefits.

From the reason, ROK has been developing the S-201 test bed. Since the S-201 test bed was included in the IALA ARM work program 2018 ~ 2022, the progress of the development will be reported accordingly.

## Related documents

* S-201 AtoN Product Specification, draft 0.0.8
* S-100 IHO Universal Hydrographic Data Model, Edition 3.0, December 2018
* ARM8-X.X S-200 test bed project

# Background

A testbed is a platform for trialling development projects. Testbeds generally involve rigorous, transparent and replicable testing of scientific theories, innovative solutions, computational tools and new technologies.

Ideally, testbeds should be conducted in a controlled environment, so that they do not adversely affect real‐life situations, existing services and, more widely, maritime safety. Conclusions can be drawn for many aspects such as functionality, usability, feasibility and risk.

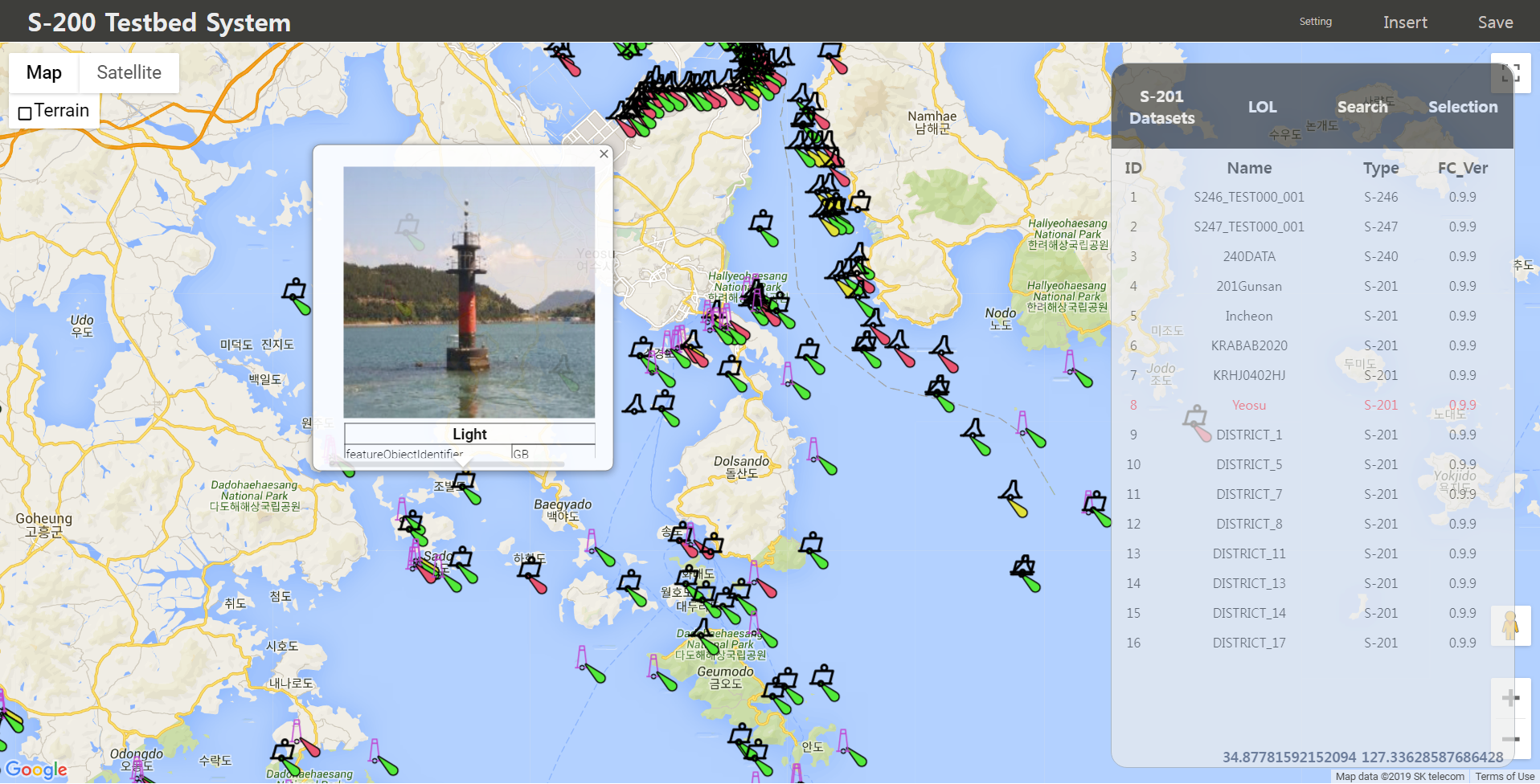
IALA started to develop AtoN product specification and decided to be involved in the S-100 Universal Hydrographic Data Model developed IHO. In order to test the S-201 AtoN Product Specification, it’s agreed for S-201 test bed to be a platform to verify it. ARM committee included a new task to monitor the development of S-201 testbed.

# Discussion

## Status of S-201 test bed

ROK developed a web based S-201 test bed and created the S-201 GML TDS (Test Data Set) using the source of Korea AtoN. The current status is like the followings;

* Creation of S-201 GML for three ports (Gunsan, Yeosu, Incheon)
* Geo spatial DB based on Postgre DBMS
* Ingesting the S-201 GML to Database
* Web Map based interface to query and display AtoN objects
* S-201 portrayal functions based on the S-201 portrayal catalogue
* Exchange set catalogue
* Validation check function according to the S-201 validation rules
* Testing some part of the ATONIS data



1. Screen shot of S-201 test bed

## Update plan of S-201 test bed

ROK has planned the following topics to fulfil the review of S-201 PS, transition plan based on S-201, service implementation based on S-124 Navigational Warning/S-125 Marine Navigational Services/S-201 AtoN and cooperation with member states.

Update of S-201 improvements

* Reflect the major updates of S-201 submitted in ARM10
* Exchange set data model, S-201 GML Schema
* SVG Symbol of S-201 portrayal catalogue

Validation rules of S-201

* Improvement of validation functions based on S-201
* Reporting function of validation results

Extension of the scope and contents of S-201

* The current S-201 is the equivalent level to the AtoN data model of ENC
* In order to address further requirement like internal equipment for managing AtoN facilities, the test bed will be used for revised data models

Aton services based on S-124/S-125/S-201

* AtoN service can be different depending types and characteristics of AtoN information.
* Review the creation and service based on the S-201 AtoN database

S-201 AtoN Service Specification

* Discussion of AtoN maritime service between stakeholders systems
* Review of Restful API typed S-201 maritime service

## Proposed way of members participation in S-201 test bed

An effective way for member states to become familiar with the S-201 AtoN product specification is to produce their own S-201 GML dataset. However, there are many difficulties in reality because the data model and GML encoding of S-201 are complex and new to them.

If a spread sheet compatible with the S-201 data model can be developed, member states can produce S-201 AtoN data using the template. A function to read the spread sheet and inject Aton data into S-201 database will be developed. The proposed way will make it easier for member states to participate in the S-201 test bed.

ROK would propose to discuss the need to draft a spread sheet compatible with S-201 Aton data model.

# Action requested of the Committee

The Committee is requested to:

1. Note this paper
2. Discuss the need to draft a spread sheet compatible with S-201 Aton data model

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-1)
2. Leave open if uncertain [↑](#footnote-ref-2)