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Technical Domain / Task Number 2 Working Group 2 / Task 5.1.3

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Aton information system compatible with the S-201 data model

# Summary

## Purpose of the document

MOF (Ministry of Oceans and Fisheries, ROK) has been developing an Aton information system compatible with the S-201 data model considering the S-201 Edition 1.0 and implementation guideline. This paper introduces the main characteristics of the system and the future plan.

## Related documents

* S-201 AtoN Product Specification, Edition 1.0.0
* S-100 IHO Universal Hydrographic Data Model, Edition 4.0, December 2018

# Background

IALA started to develop an Aton information exchange standard and endorsed the S-201 Edition 1.0 at the 10th ARM committee meeting. In this regard, MOF conducted a study on mapping between existing Aton asset database and S-201 data model, and is developing a new system to manage the Aton information and produce the S-201 data based on the international standard.

# Discussion

## Requirement analysis for Aton information management

MOF has been managing Aton asset management system which consists of Oracle DB and web interface. The research team reviewed the structure of Aton database and conducted a mapping study against the S-201 Aton model. Based on the research results, the following implications were derived.

* Main functions of existing system: Equipment management, Buoy management, Aton management, Inspection and maintenance, History card, Statistics
* Transition to S-201 data model was possible with the existing database
* Structure information other than buoys is not managed
* Public Aton is managed, but private Aton hasn’t been sufficiently updated
* Transition to S-201 model is available with the existing DB, but it is necessary to establish a new database for more systematic Aton management and production of S-201 compatible data ( Aton information is newly created, management history is linked from the existing DB)
* New development of Aton information system is required using the latest web technology
* Improvements of S-201 data model were proposed in a separate document

## Design of DB schema and management system

MOF decided to develop a new database for Aton information managemet which is compatible with the S-201 Aton data model. The database contains the followings;

* Aton equipment management (Light, Topmark, Fog signal, etc.)
* Aton structure management (Landmark, Buoy, Beacon, etc.)
* Aton information management (Aton Name, Light characteristics, Shape and Colour of structure, Aton Position, Status, etc.)
* Aton inspection and maintenance
* Statistics

C.R.U.D. (Create, Read, Update, Delete) functions and web user interface of Aton information management have been developed. An approval process for information responsibility and ENC based validation process for information reliability were considered. Atons are managed in an integrated database, and the following data will be produced and serviced according to the following product specifications

* Aton warning: S-124 Navigational warnings
* Aton daily changes: S-125 Marine Navigational Services
* Aton weekly changes: S-201 Aton data provided to the national hydrographic office
* Aton annual information: Electronic List of lights

## Use of MRN Service

MOF developed the MRN service to number Aton resource with unique identifier according to the IALA G1143. The MRN service was reported in the WG2 of ARM11 committee meeting. In the Aton resource management, equipment and structures as well as whole Aton can be numbered with the MRN.

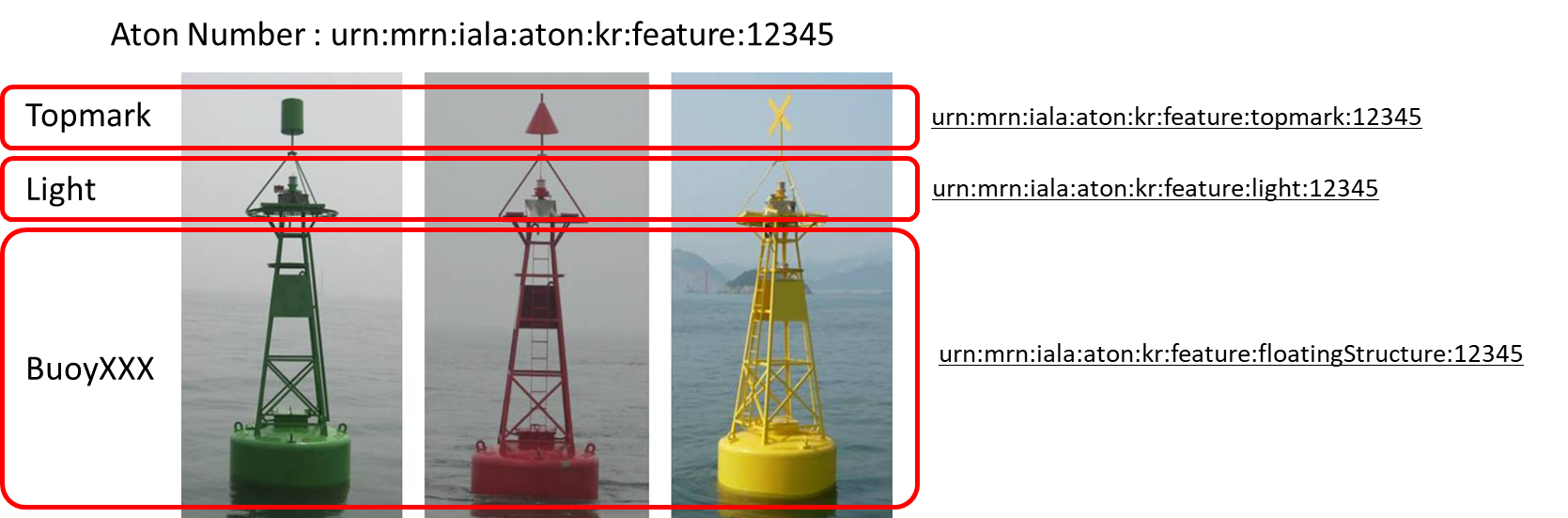


Fig.1 Examples of assigning MRN to Atons

The MRN service was developed as an Open API and operated with the Aton information management system. The MRN can be issued when adding new equipment and structure.

## Future plan

Aton information management system has been developed for integrated management and production of S-201 Aton data. MOF planned a system development and pilot operation as follows.

* Development of new Aton information system: in 2020
* Parallel operation of existing and new systems: in 2021
* Complete transition to new system and full-scale operation: in 2022

Lessons learnt from the development of Aton system could be used to improve the implementation guideline of S-201 Aton product specification

# Action requested of the Committee

The Committee is requested to:

1. Note the major characteristics and plan of Aton information management system compatible with the S-201

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