



16th Meeting of the Hydrographic Services and Standards Committee

IALA Activities affecting HSSC

Agenda Item 7.3A

Minsu JEON, Technical manager IALA

HSSC-16, Tokyo, Japan, 27 – 31 May 2024



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IALA'S ROLE ON S-200 DEVELOPMENT

International
Hydrographic
Organization

- IHO has approved IALA as a **Submitting Organization** and **Domain Control Body**
- IALA Product Specifications compliant with the IHO S-100 standard, use the numbering series S-201 to S-299
- **IALA Domain covers:**
 - Aids to Navigation (AtoN)
 - Vessel Traffic Services (VTS)
 - Communication Systems
 - AIS, ASM, VDES
 - Positioning Systems



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PUBLICATIONS: S-200 PS

International Hydrographic Organization



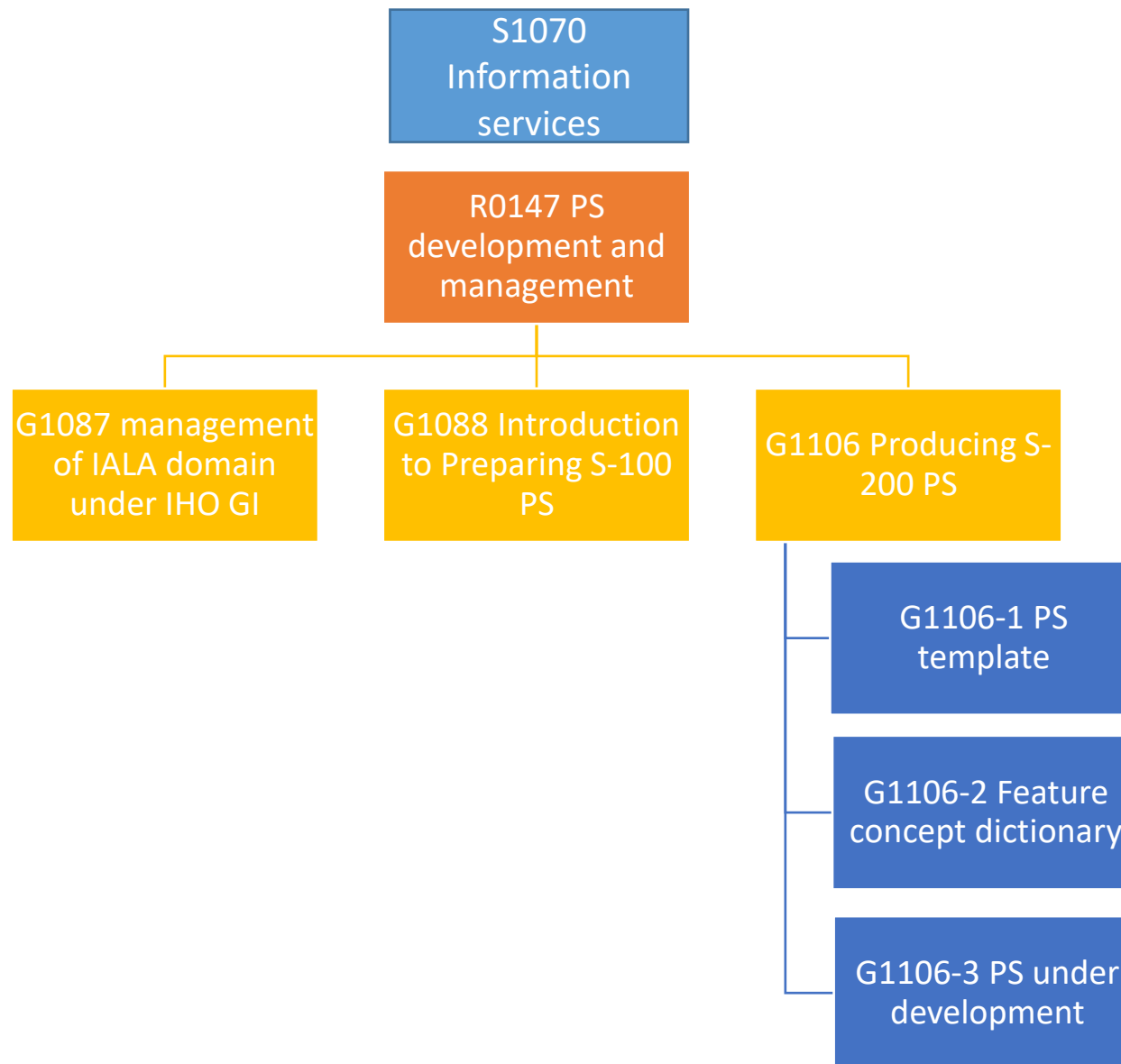
IALA RECOMMENDATION (NORMATIVE)

R0147 (e-NAV-147)
PRODUCT SPECIFICATION DEVELOPMENT AND MANAGEMENT

Edition 2.1
June 2017

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International Association of Marine Aids to Navigation and Lighthouse Authorities
Association Internationale de Signalisation Maritime



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DEVELOPMENT STATUS OF S-200 SERIES

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S-200 series development summary table

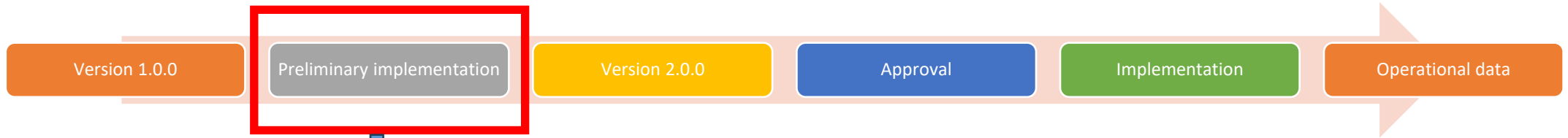
Domain	PS	Title	Developing Committee	Version
AtoN	S-201	Aids to Navigation Information	ARM	1.1.0
	S-125	Marine Aids to Navigation (AtoN)	NIPWG (ARM)	0.0.4
Positioning	S-240	DGNSS Station almanac	ENG	1.2.0
	S-245	eLoran ASF Data	ENG	1.0.0
	S-246	eLoran Station almanac	ENG	1.0.0
	S-247	Differential eLoran Reference stations almanac	ENG	1.0.0
Comms.	S-230	Application Specific Messages (ASM)	DTEC	Planned
VTS	S-210	Inter VTS exchange format (IVEF)	VTS	Started
	S-211	Port Call Messages	IPCDMC	1.0.0
	S-212	VTS digital information service	VTS	0.6.4



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WHAT SHOULD BE DONE?

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- **Trainings on S-200 Product Specifications**
 - Introductory course on S-200
 - Course on S-201/125: Aids to Navigation (AtoN)
 - Course S-210/212: Vessel Traffic Services (VTS)
- **S-200 series Product Specifications Testbed**
 - S-201
 - S-240
 - others
- **Sea trials**

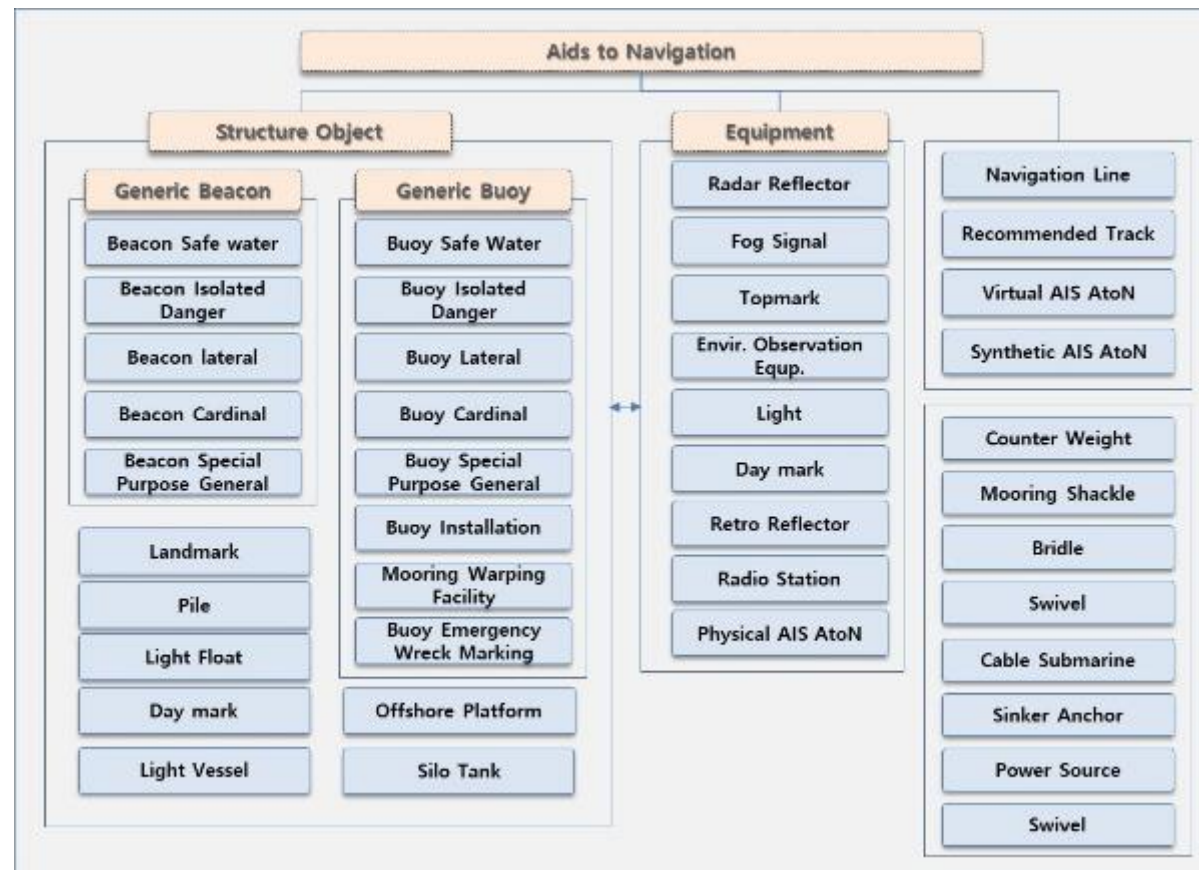
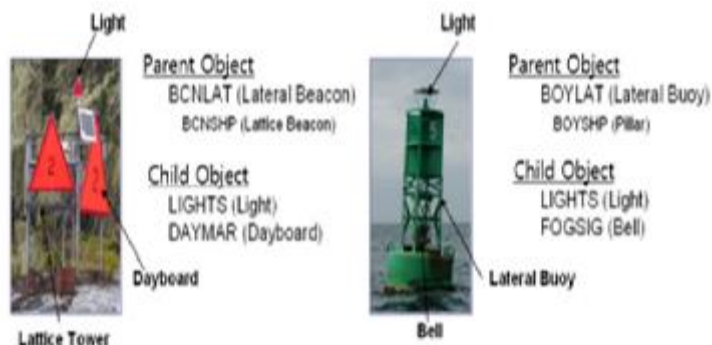


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S-201 ATON INFORMATION

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- Standardised method of exchanging information on AtoN between lighthouse authorities, hydrographic offices, and related organisations.
- The product contains the positions, properties, operational status and general comments related to an AtoN

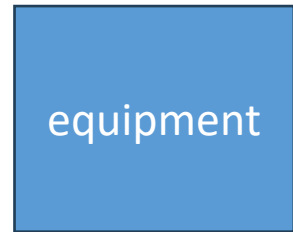




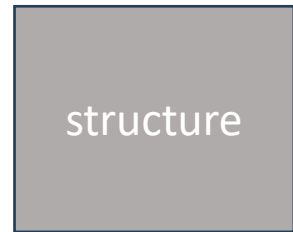
S-201 DATA MODELING – EXAMPLE ON FEATURE LEVEL

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- Fixed AtoN (lighthouse, leading lines, etc.)

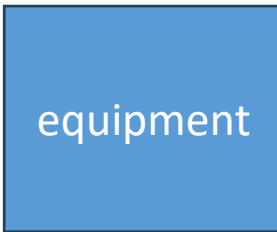


Light, Topmark,
Daymark, Fog signal,
RadarReflector, etc

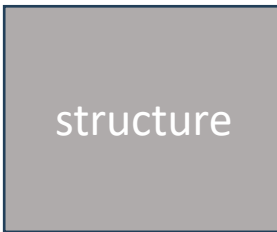


Beacon,
Landmark, Pile, Light
Float, Offshore
Platform, Light vessel,
Silo Tank

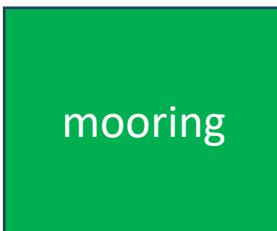
- Floating AtoN (Buoy, LANBY, etc.)



Light, Topmark, etc



Buoy



Bridle, Mooring shakle,
Sinker Achor, Swivel,
etc

- Virtual AtoN





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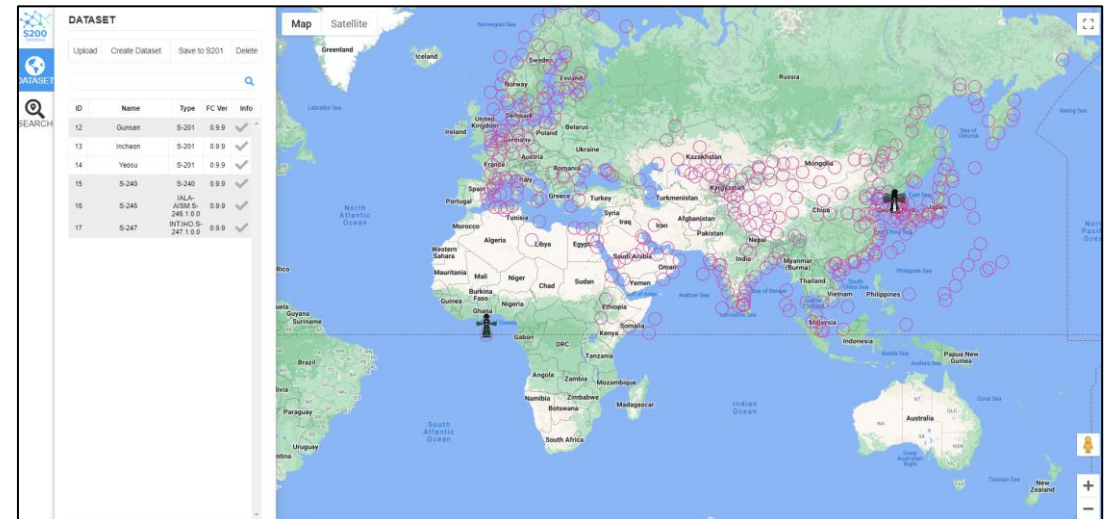
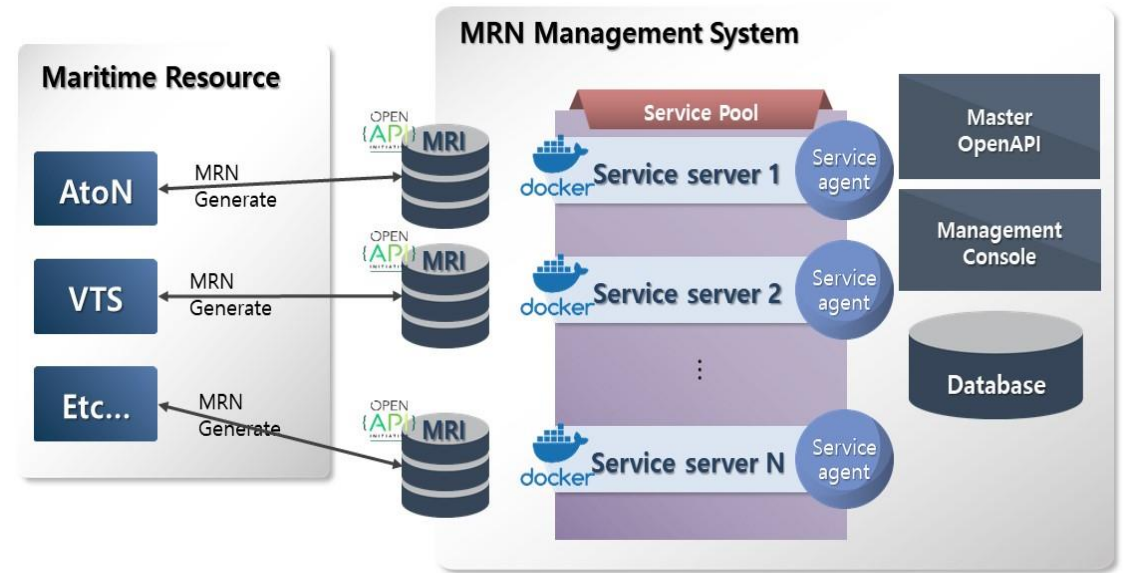
IALA S-200 TESTBED VER 1.1.0

<http://s200testbed.iala-aism.org> (<http://tds.bluemap.kr/>)

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- Data converter
- Updating the datasets
- Input and export S-200 data model
 - AtoN authority, Hydrographic office and national authorities
- Portrayal
- Quality validation
- MRN testing
- Based on S-100 version 5.0 architecture

Testbed powered by MOF/KRISO





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FINDINGS FROM S-201 PRELIMINARY EXERCISE

Sample data from the US, Canada, France, UK, Sweden, Finland, Korea and more

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Comments on the testbed from the user side

- Different terms
- Require clarification on fields
- Include additional values
- Typo
- Functional errors
- Language issue

Comments on the sample data from the developer side

- Some dataset have national feature
- README file (Explanatory file) required
- AtoN data converter required
- Or S-101 AtoN data extractor required

Aid ID	Information entered into the testbed		Resulting information	
	Latitude	Longitude	Latitude	Longitude
J1	45° 14' 12.1" N	66° 2' 40.5" W	45° 14' 12.098" N	66° 2' 40.498" W
J3	45° 14' 24.1" N	66° 2' 48.9" W	45° 14' 24.1" N	66° 2' 48.901" W
J7	45° 14' 34.7" N	66° 2' 56.3" W	45° 14' 34.699" N	66° 2' 56.299" W
J9	45° 14' 44.1" N	66° 3' 2.9" W	45° 14' 44.098" N	66° 3' 2.901" W
J12	45° 15' 6.1" N	66° 3' 10.4" W	45° 15' 6.098" N	66° 3' 10.4" W
J14	45° 15' 16.7" N	66° 3' 17.8" W	45° 15' 16.7" N	66° 3' 17.798" W
JC	45° 14' 55" N	66° 3' 2.7" W	45° 14' 54.999" N	66° 3' 2.699" W
JC4	45° 15' 11" N	66° 2' 50.2" W	45° 15' 11.001" N	66° 2' 50.2" W
JC5	45° 15' 15.4" N	66° 3' 0" W	45° 15' 15.4" N	66° 2' 59.999" W
JC8	45° 15' 23.6" N	66° 2' 47.1" W	45° 15' 23.601" N	66° 2' 47.101" W
JC9	45° 15' 29.5" N	66° 2' 54" W	45° 15' 29.498" N	66° 2' 53.998" W
JC10	45° 15' 33.4" N	66° 2' 43.8" W	45° 15' 33.4" N	66° 2' 43.799" W
JC15	45° 15' 51.3" N	66° 2' 40.8" W	45° 15' 51.299" N	66° 2' 40.801" W
JC16	45° 15' 52.6" N	66° 2' 32.6" W	45° 15' 52.599" N	66° 2' 32.6" W
JC20	45° 16' 11.15" N	66° 2' 23.51" W	No change	No change
JD	45° 15' 43.4" N	66° 3' 26.6" W	45° 15' 43.401" N	66° 3' 26.6" W



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AtoN

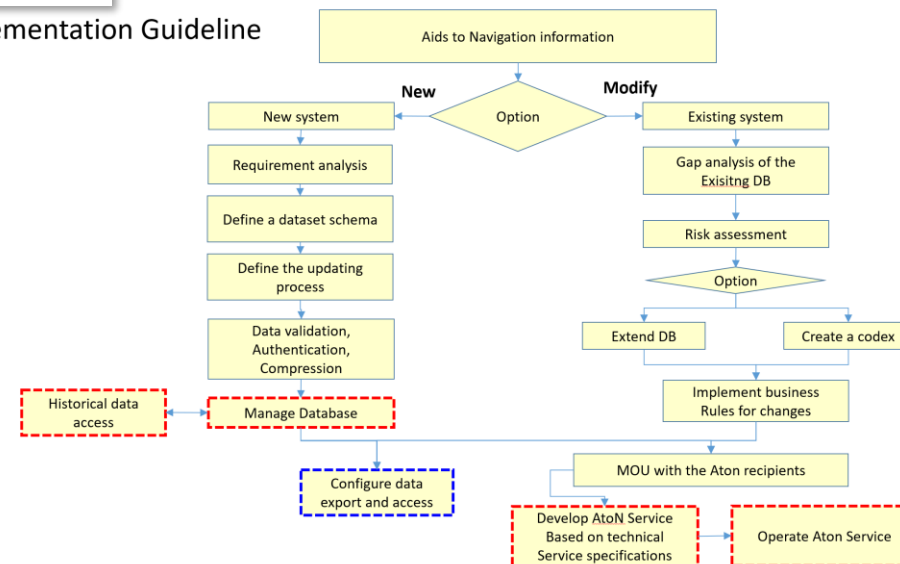
Data sets (including README file)

AtoN data

S-125

S-201

Implementation Guideline

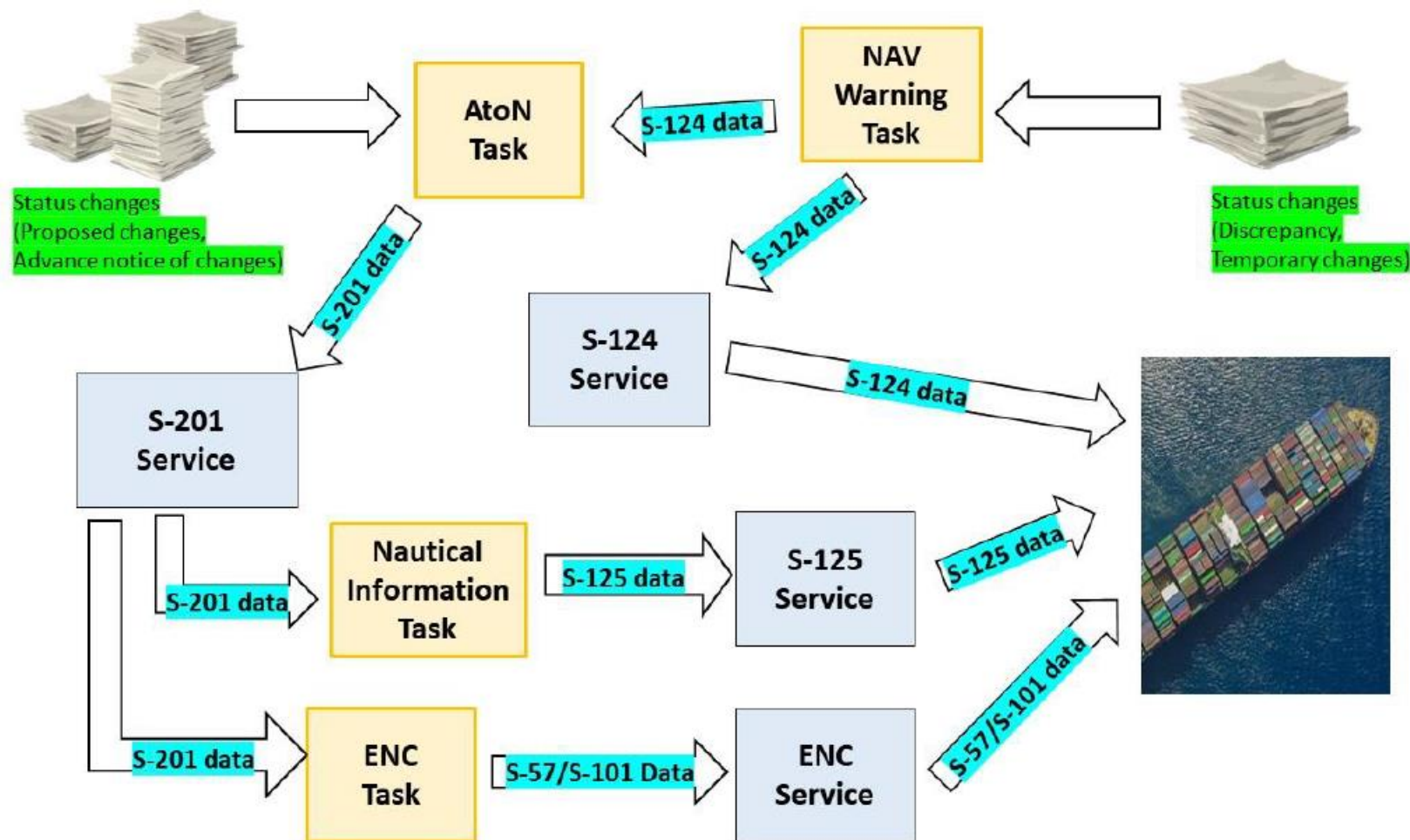




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SEA TRIAL: S-125, S-124 AND S-201

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S-125 is a product specification owned by NIPWG, but has a close relation to S-201. IALA ARM volunteered to develop this PS in cooperation with NIPWG.

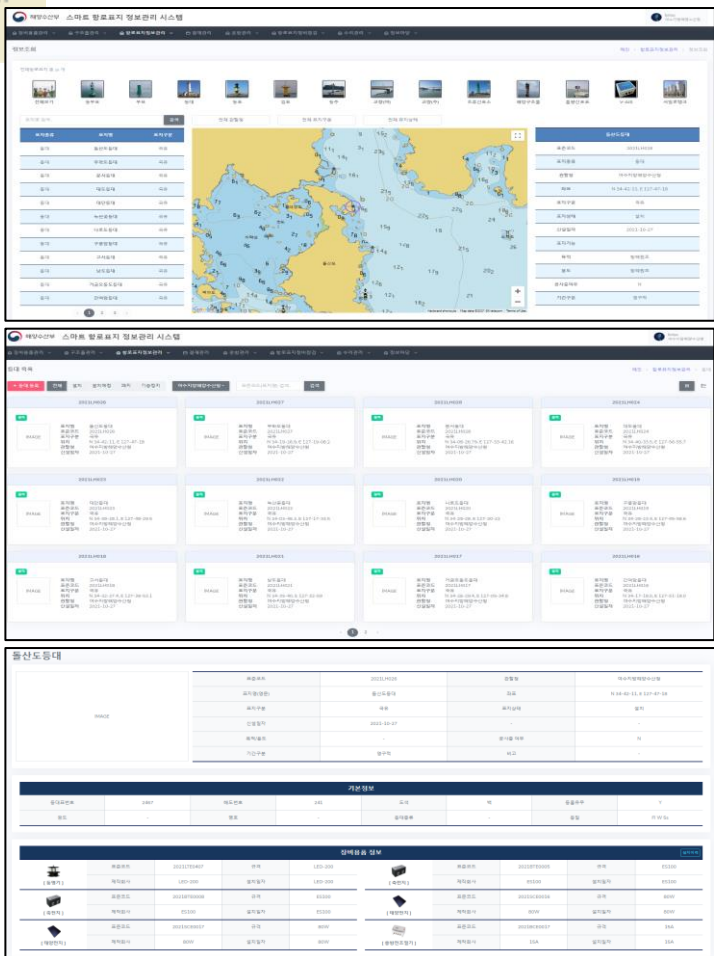


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SEA TRIAL S-124/125

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Aton information management system



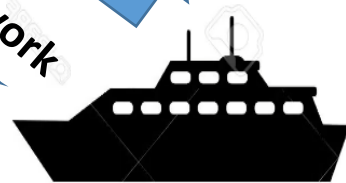
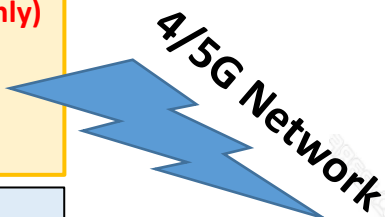
AtoN Information Management System (Compatible with S-201)



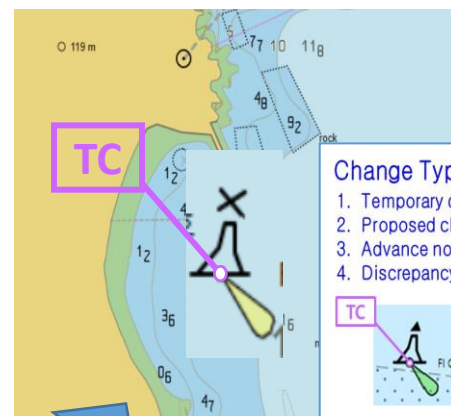
S-124/S-125 (AtoN info only) Maritime Service (RESTful API)

S-124 NW dataset

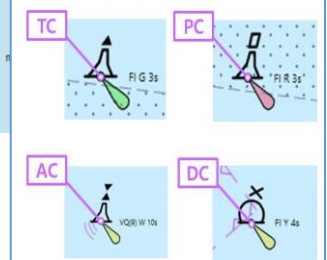
S-125 AtoN dataset



S-100 testbed system



- Change Types**
1. Temporary changes : TC
 2. Proposed changes : PC
 3. Advance notice of change : AC
 4. Discrepancy : DC



(Interoperability)

- S-124
- S-125
- S-101



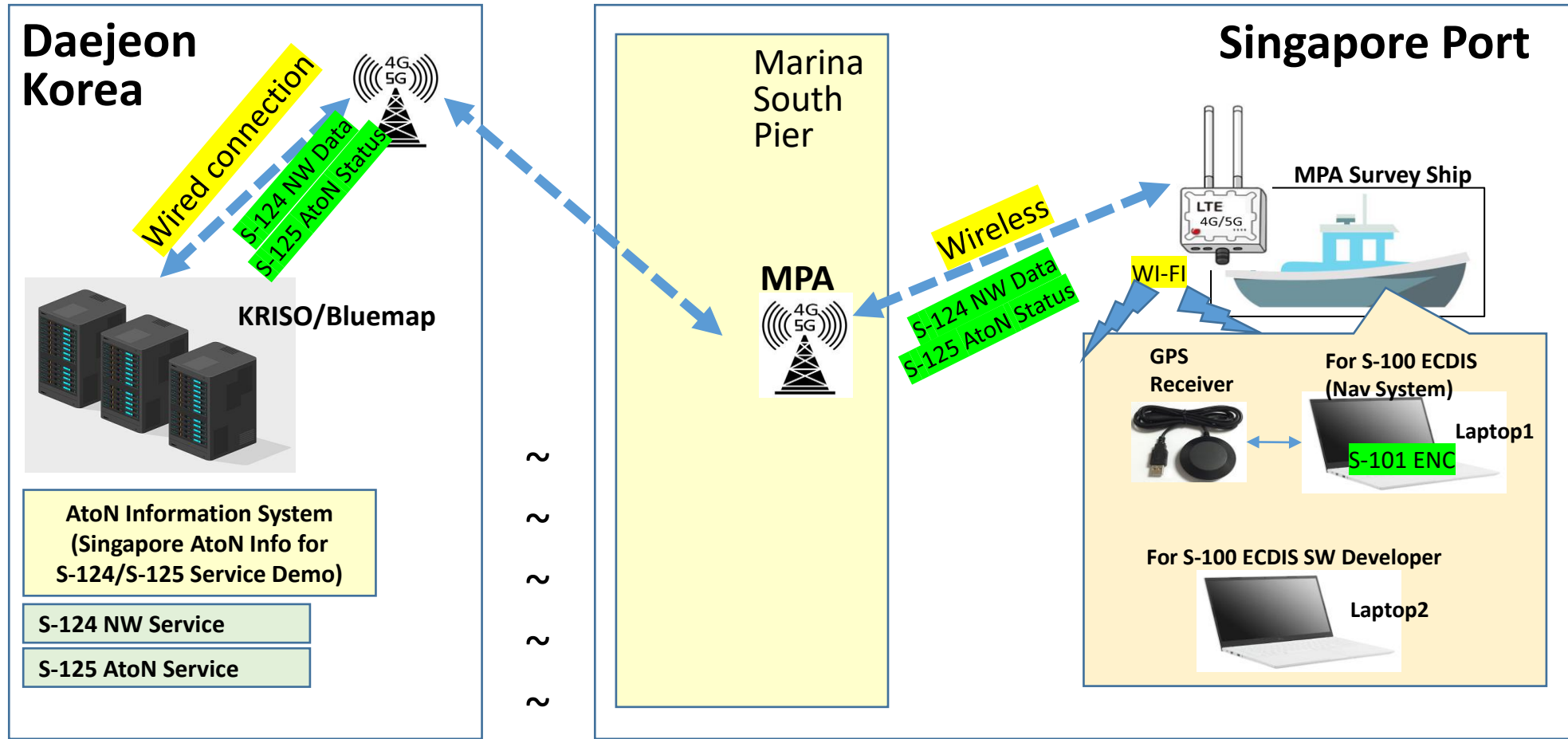


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SEA TRIAL S-124/125

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Network diagram of S-124/S-125 Service Sea Trial





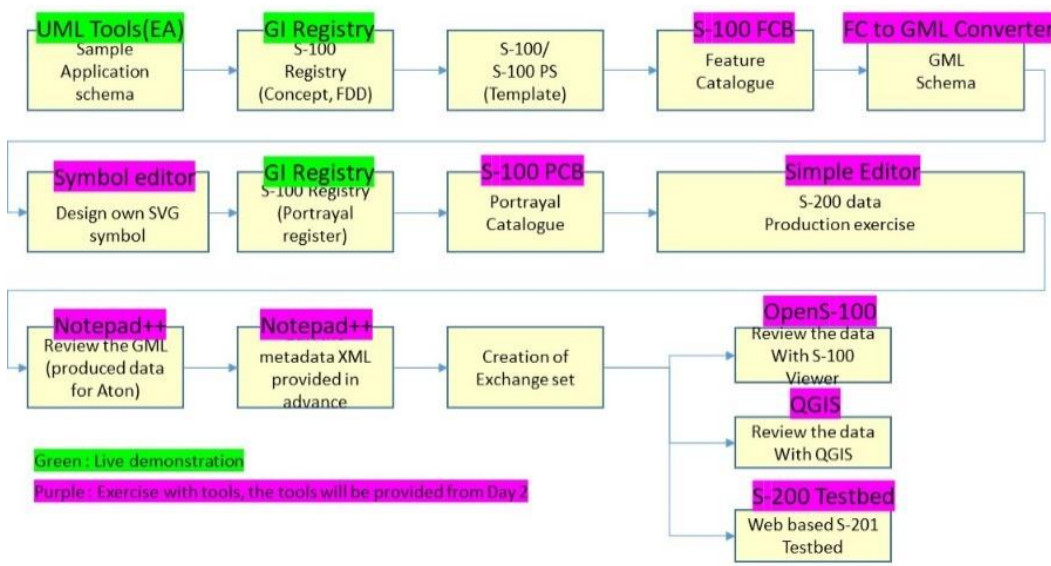
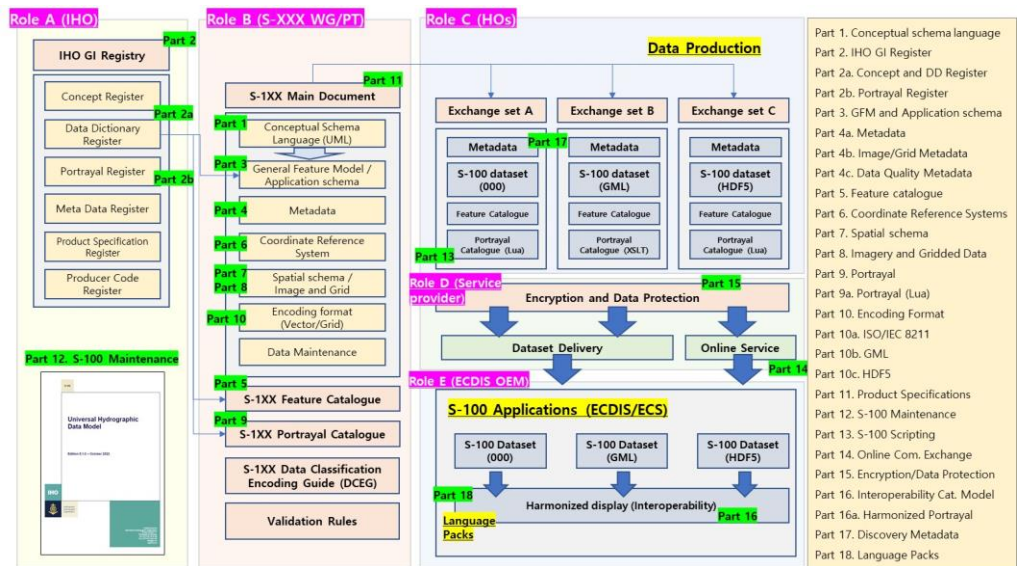
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S-200 PILOT TRAINING

International Hydrographic Organization

IALA Pilot training on S-200 Product Specifications, Feb 2024, IALA HQ

- Describe the Universal Hydrographic Data Model (UHDM), its development and benefits.
- Identify the fundamental concepts of Data product specification development
- Recognize the elements of Product Specification (S-97)
- Explain the S-200 series Product Specification
- Make an example data product using a sample of S-201





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2ND IALA-IHO JOINT WORKSHOP ON S-100/200 DEVELOPMENT

International
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9-13 September 2024, Annapolis, Maryland, US

Registration on IALA website

Purpose: To gain a common understanding between organizations regarding the concepts and use of the S-100 framework to advance the development and delivery of e-Navigation maritime services. Examine current efforts with the goal of harmonization between organizations.

The objective of the workshop is to:

- Harmonize and open feedback channels between IHO and IALA regarding Product Specification requirements and development processes.
- Share visions of the use of S-100 based Product Specifications of IHO and IALA and relevant stakeholders.
- Identify possible updates and recommend amendments existing documents.
- Provide clarity regarding development of S-100 / S-200 series Product Specifications for IHO/IALA.



1st IALA IHO joint workshop on S-100/200 in Aalesund, Norway in 2022