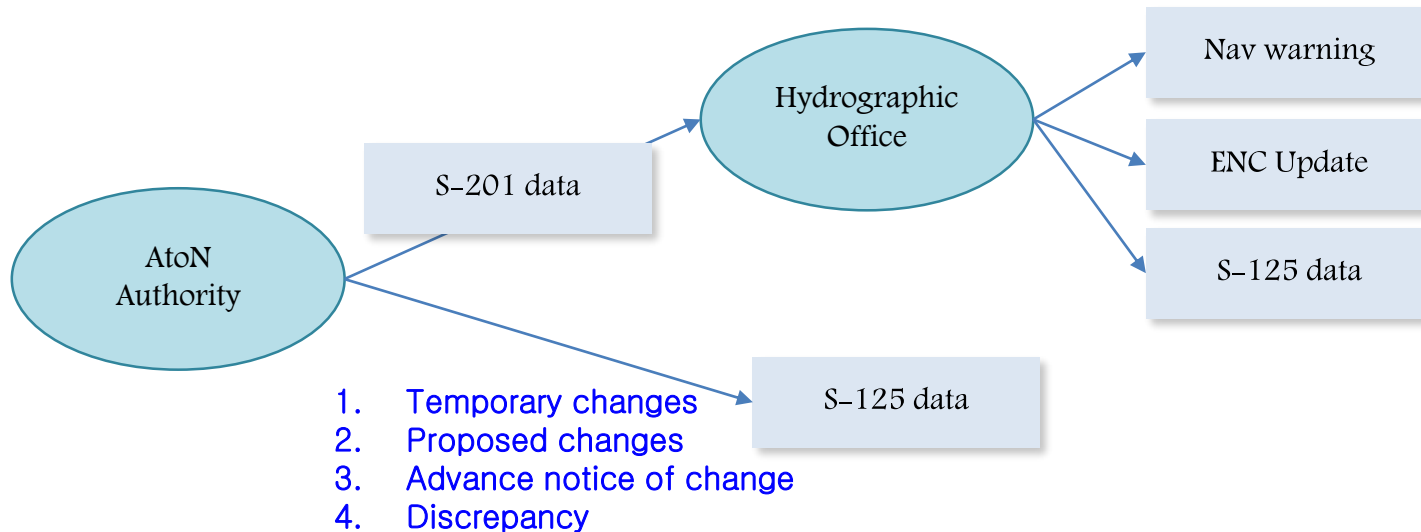# Report of S-125 progress

23 March 2022

Sewoong OH (KRISO)

# Overview

- NIPWG planed to develop S-125 Maritime Navigational Service Product Specification but low priority

- IALA ARM Committee developed to S-201 AtoN information product specification which aims to exchange AtoN information between AtoN authorities, hydrographic offices and other organizations
  - common structure for the exchange of information about AtoNs
  - buoys, beacons, racons, lights sound signals and AIS
  - the positions, properties, operational status and general comments related to an AtoN

- IALA developed the S-125 and agreed to provide it to IHO
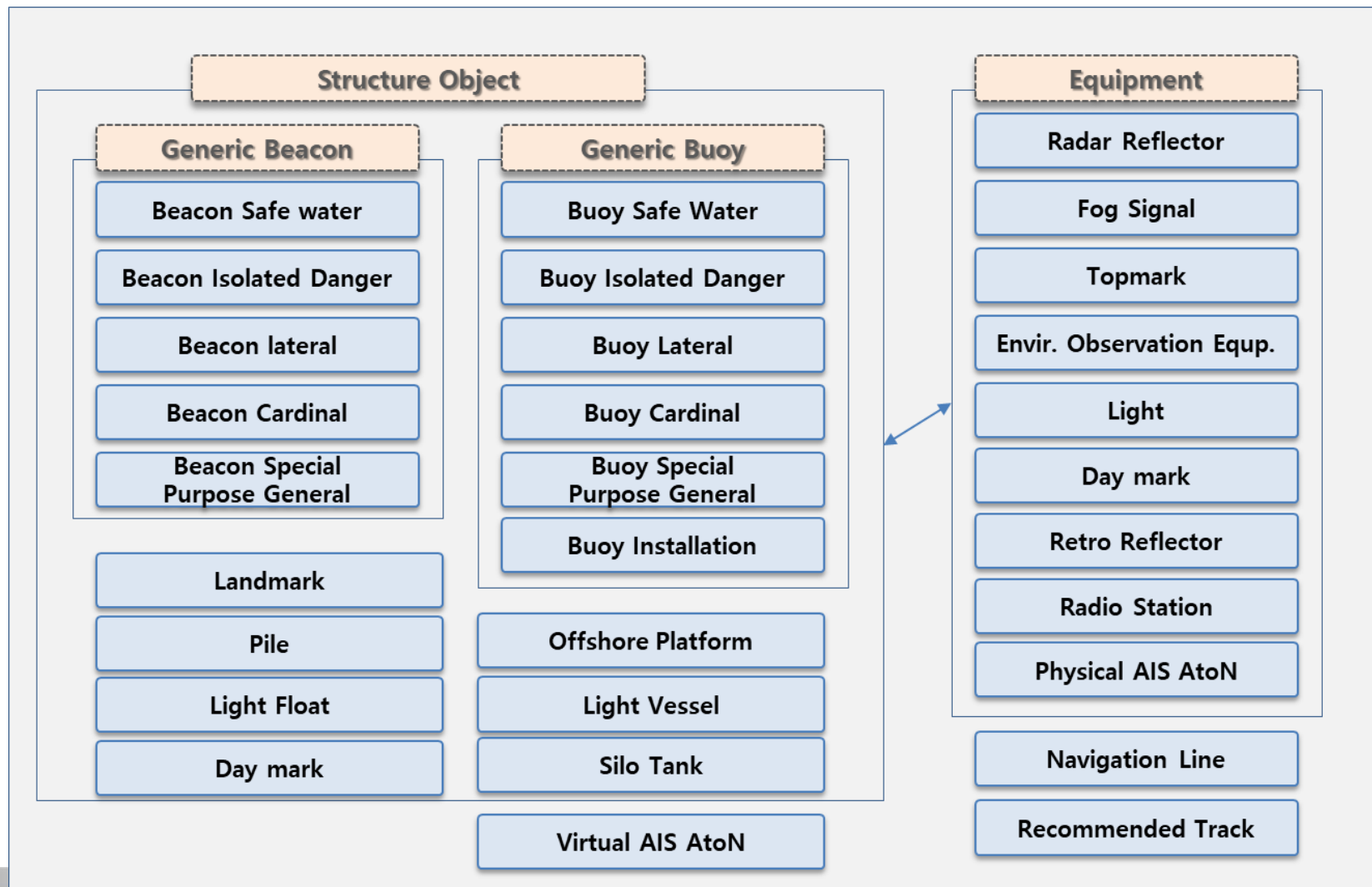  - S-125 is subset of S-201

# Vision outline of S-125

- IALA ARM WG2 drafted the document and sent to IHO
  - IHO provided the response
  - ARM is preparing a liaison note for IHO

- Vision of S-125
  - S-125 MNS intends to be digital list of AtoNs
  - S-125 services aims to provide near real time data

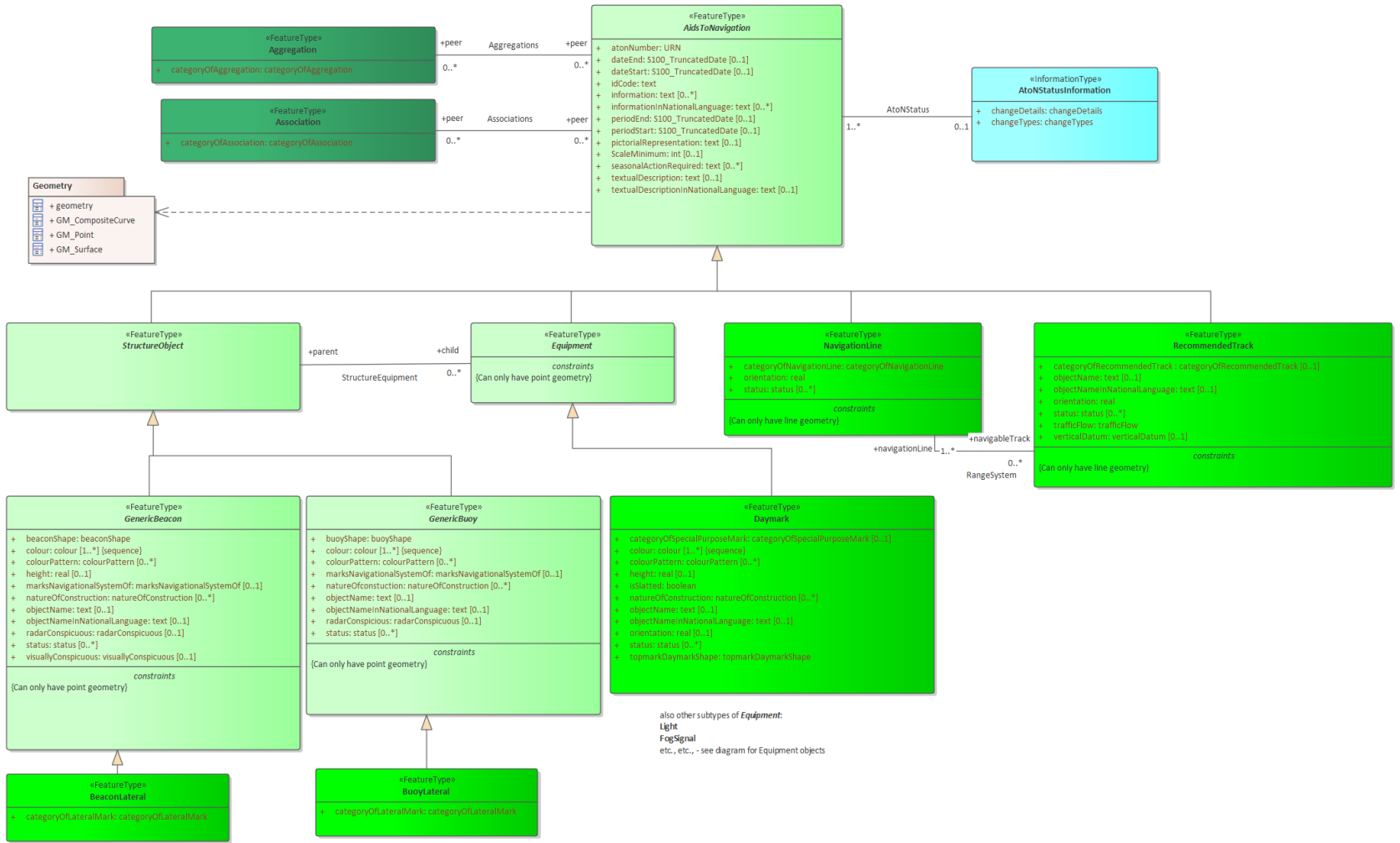AtoN Authority → S-201 data → Hydrographic Office → Nav warning, ENC Update, S-125 data

AtoN Authority → S-125 data

1. Temporary changes
2. Proposed changes
3. Advance notice of change
4. Discrepancy

# Application schema

- S-201 data model

| Structure Object | | Equipment |
|---|---|---|
| **Generic Beacon** | **Generic Buoy** | Radar Reflector |
| Beacon Safe water | Buoy Safe Water | Fog Signal |
| Beacon Isolated Danger | Buoy Isolated Danger | Topmark |
| Beacon lateral | Buoy Lateral | Envir. Observation Equp. |
| Beacon Cardinal | Buoy Cardinal | Light |
| Beacon Special Purpose General | Buoy Special Purpose General | Day mark |
| | Buoy Installation | Retro Reflector |
| Landmark | | Radio Station |
| Pile | Offshore Platform | Physical AIS AtoN |
| Light Float | Light Vessel | |
| Day mark | Silo Tank | Navigation Line |
| | Virtual AIS AtoN | Recommended Track |

# Application schema

- ## S-125 data model

# Application schema

- S-125 data model



class Domain Overview - Print

«InformationType»
**AtoNStatusInformation**

+ changeDetails: changeDetails
+ changeTypes: changeTypes

class Enumerations - All

«Enumeration»
**changeTypes**

Temporary changes
Proposed changes
Advance notice of changes
Discrepancy

class Enumerations - All

«ComplexAttributeType»
**complex attributes::changedetails**

«simpleAttributeType»
+ atonCommissioning: atonCommissioning [0..1]
+ atonRemoval: atonRemoval [0..1]
+ atonReplacement: atonReplacement [0..1]
+ beaconChange: beaconChange [0..1]
+ buoyChange: buoyChange [0..1]
+ fogSignals: fogSignals [0..1]
+ leadingLightsChange: leadingLightsChange [0..1]
+ lightChange: lightChange [0..1]
+ radioAidschange: radioAidschange [0..1]

# Application schema

- S-125 data model

Enumeration

⬇

Codelist

---

**class Enumerations - AtoNStatus**

### «Enumeration» buoyChange

Light buoy Light unlit.
Light buoy Light unreliable
Light buoy Light not sychronized
Light buoy Light damaged
Buoy missing
Buoy off position
Buoy move
Buoy adrift
Buoy damaged
Buoy restored to normal
Buoy destroyed
Buoy re-establishment
Buoy topmark missing
Buoy topmark damaged
Buoy daymark unreliable
Buoy will be withdrawn
Buoy withdrawn
Lifted for Winter
Replaced by Wintr Spar
Decommissioned for winter
Recommissioned for navigation season
Marine Aids to Navigation unreliable
Seasonal decommissioning complete
Seasonal decommissioning in progress
Seasonal recommissioning complete
Seasonal recommissioning in progress

### «Enumeration» lightChange

Light unlit.
Light unreliable
Light re-establishment
Light range reduced
Light without rhythm
Light out of synchronization
Light daymark unreliable
Light operating properly
Sector light Sector obscured

### «Enumeration» beaconChange

Beacon missing
Beacon damaged
Light beacon Unlit
Light beacon Unreliable
Light beacon Not symchronized
Light beacon damaged
Beacon topmark missing
Beacon topmark damaged
Beacon daymark unreliable
Floodlit beacon Unlit
Beacon restored to normal.

### «Enumeration» leadingLightsChange

Front leading/range light Unlit
Rear leading/range light. Unlit.
Front leading/range light. Unreliable
Rear leading/range light. Unreliable
Front leading/range light. Light range reduced.
Rear leading/range light. Light range reduced.
Front leading/range light without rhythm.
Rear leading/range light without rhythm.
Leading/range lights out of synchronization.
Front leading/range beacon . Unreliable
Rear leading/range beacon. Unreliable
Front leading/range light is operating properly.
Rear leading/range light is operating properly.
Front leading/range beacon restored to normal.
Rear leading/range beacon restored to normal.

### «Enumeration» fogSignals

Audible signal out of service.
Fog signal out of service.
Audible signal operating properly.
Fog signal operating properly.

### «Enumeration» radioAidsChange

AIS transmitter out of service.
AIS transmitter unrealiable.
AIS transmitter operating properly.
V-AIS out of service.
V-AIS unrealiable.
V-AIS operating properly.
RACON out of service.
RACON unrealiable.
RACON operating properly.
DGPS out of service.
DGPS operating properly.
DGPS unreliable.
LORAN C. operating properly.
LORAN C. unrealiable.
LORAN C. out of service.
eLORAN operating properly.
eLORAN unrealiable.
eLORAN out of service.
DGLONASS operating properly.
DGLONASS unrealiable.
DGLONASS out of service.
Chayka operating properly.
Chayka unrealiable.
Chayka out of service.
e-Chayka operating properly.
e-Chayka unrealiable.
e-Chayka out of service.
EGNOS operating properly.
EGNOS unrealiable.
EGNOS out of service.

### «Enumeration» atonCommissioning

Buoy establishment.
Light establishment.
Beacon establishment.
Audible signal establishment.
Fog signal establishment.
AIS transmitter establishment.
V-AIS establishment.
RACON establishment.
DGPS station establishment.
eLORAN station establishment.
DGLONASS station establishment.
e-Chayka station establishment.
EGNOS station establishment.

### «Enumeration» atonReplacement

Buoy change.
Buoy temporary change.
Light change.
Light temporary change.
Sector light change.
Sector light temporary change.
Beacon change.
Beacon temporary change.
Fog signal change.
Fog signal temporary change.
Audible signal change.
Audible signal temporary change.
V-AIS change.
V-AIS temporary change.
RACON change.
RACON temporary change.

### «Enumeration» atonRemoval

Buoy removal.
Buoy temporary removal.
Light removal.
Light temporary removal.
Beacon removal.
Beacon temporary removal.
Fog signal removal.
Fog signal temporary removal.
Audible signal removal.
Audible signal temporary removal.
AIS transmitter removal.
AIS transmitter temporary removal.
V-AIS removal.
V-AIS temporary removal.
RACON removal.
RACON temporary removal.
DGPS station removal.
DGPS station temporary removal.
EGNOS station removal.
EGNOS station temporary removal.
LORAN C station removal.
LORAN C station temporary removal.
eLORAN station removal.
eLORAN station temporary removal.
Chayka station removal.
Chayka station temporary removal.
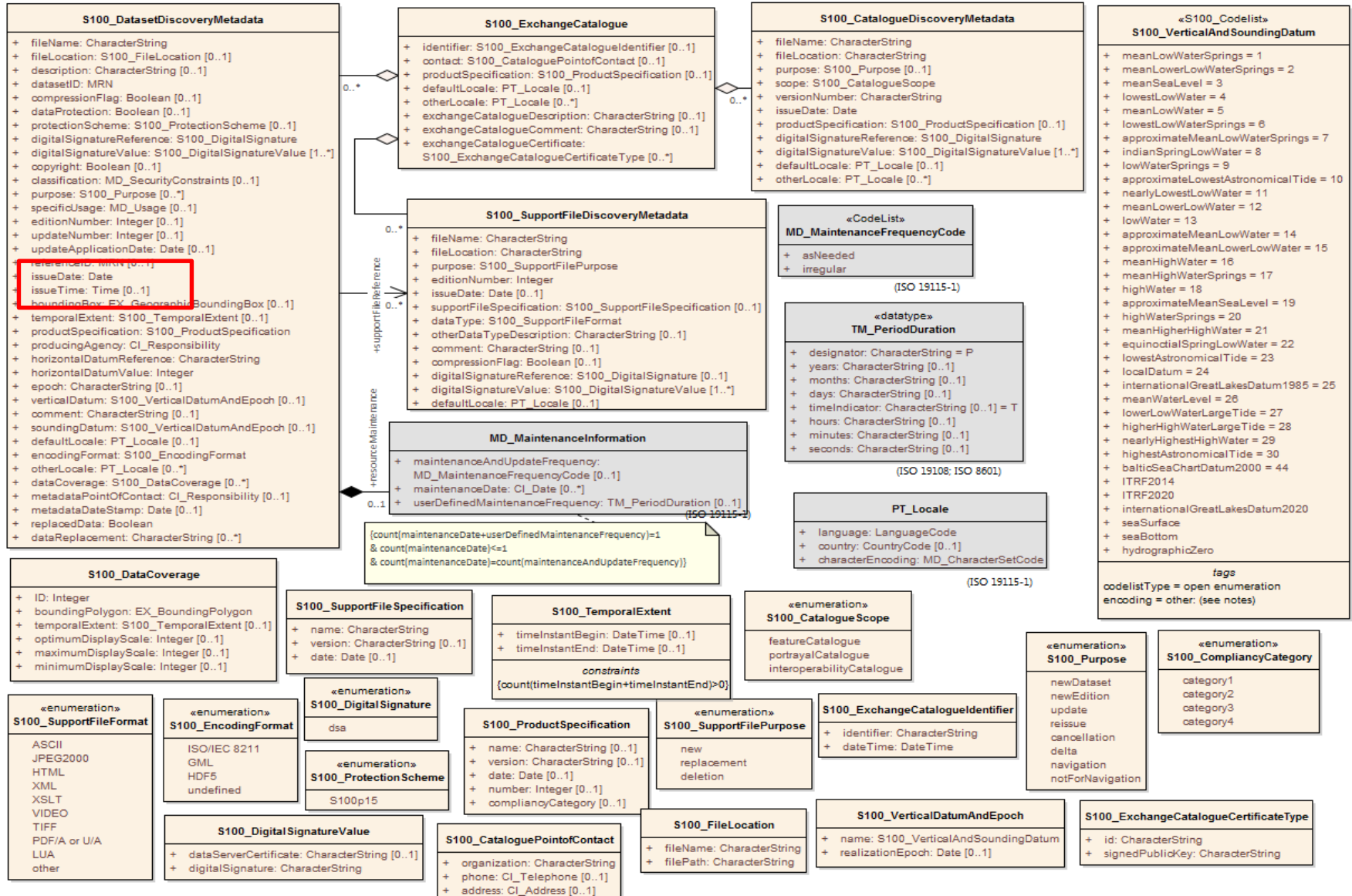e-Chayka station removal.
literal1

# Main document

- How to update S-125 dataset

# Main document

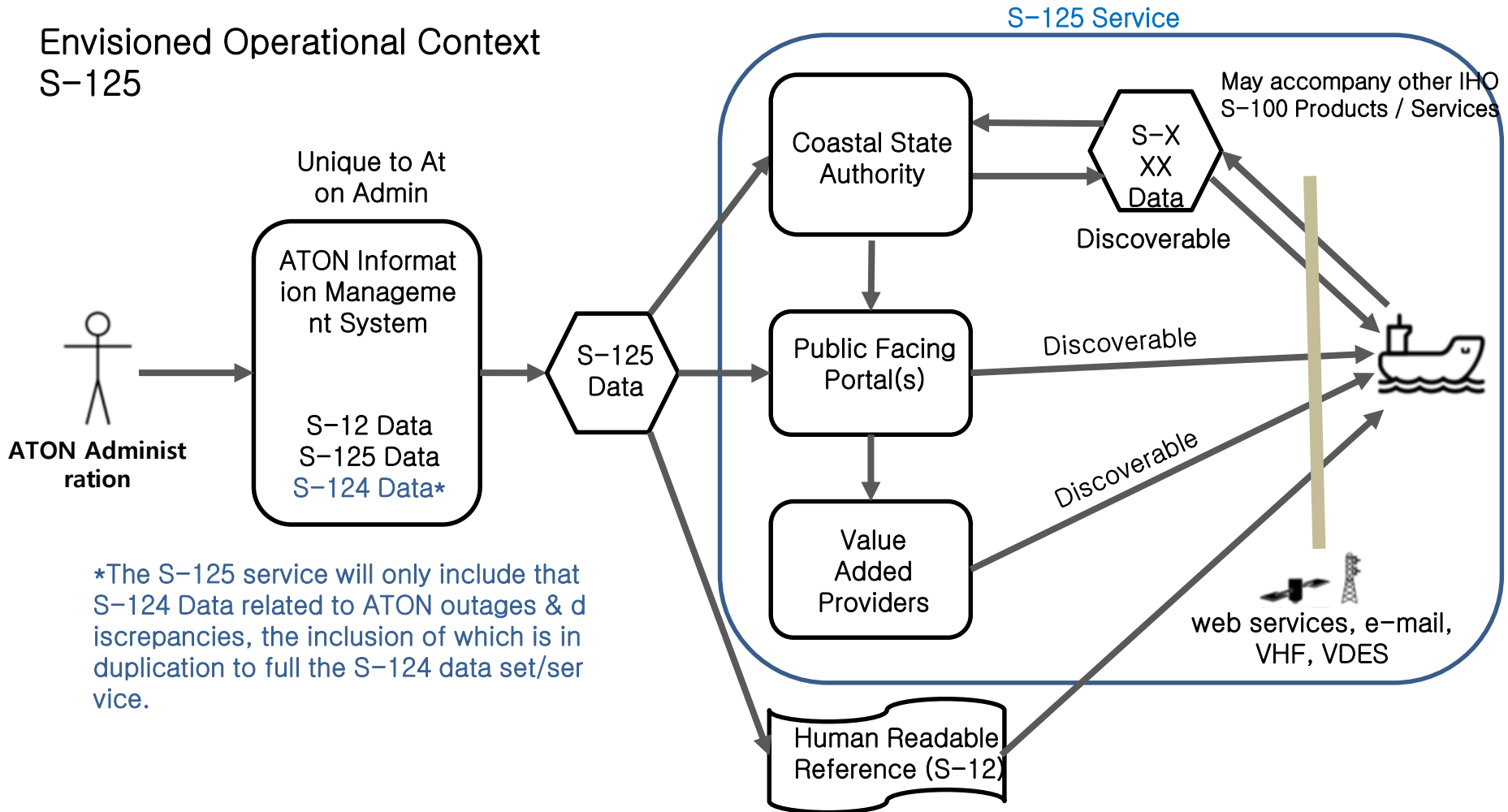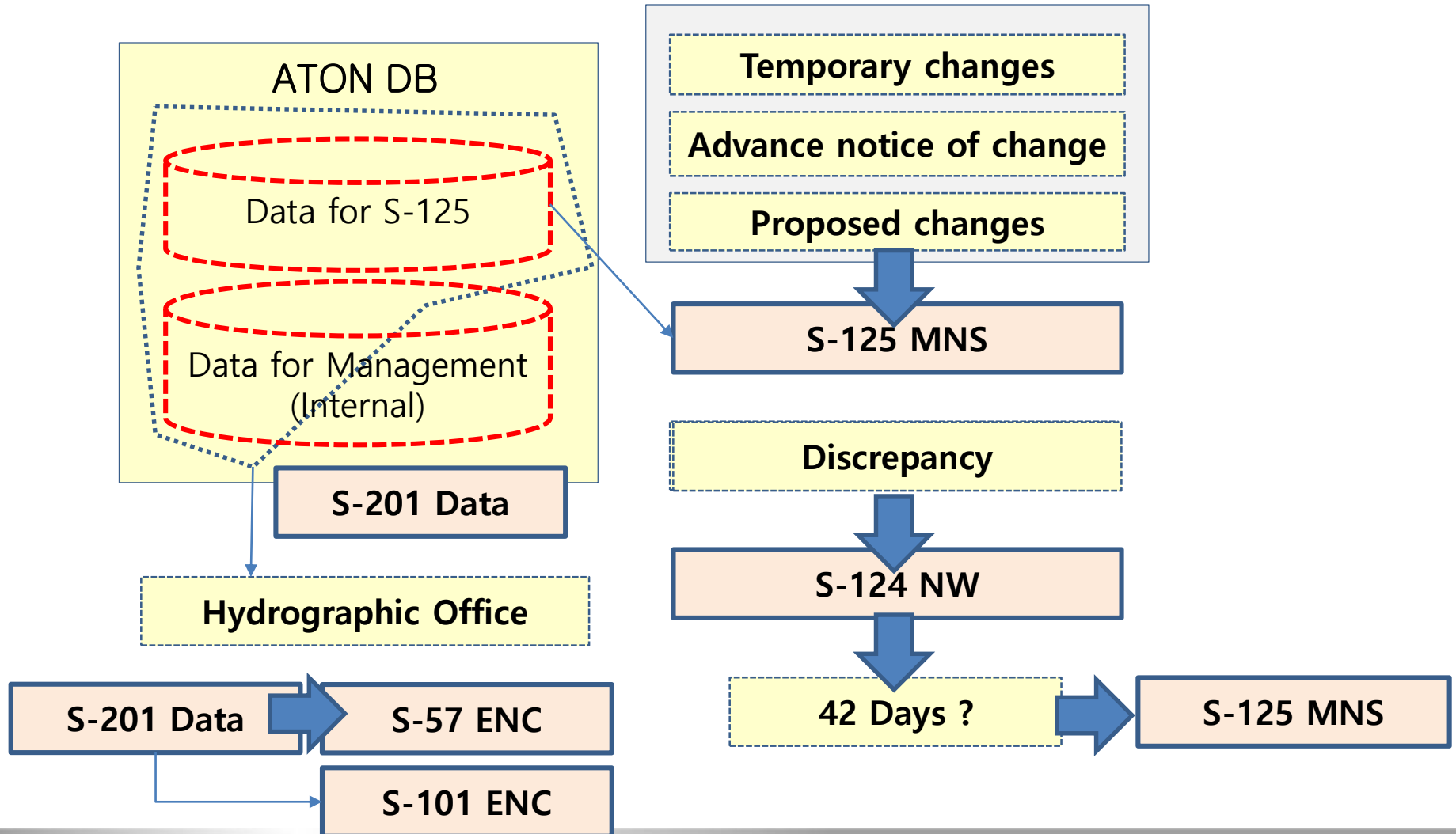- Operational process of S-125

Envisioned Operational Context
S-125

S-125 Service

Unique to At
on Admin

May accompany other IHO
S-100 Products / Services

**ATON Administ
ration**

ATON Informat
ion Manageme
nt System

S-12 Data
S-125 Data
S-124 Data*

S-125
Data

Coastal State
Authority

S-X
XX
Data

Discoverable

Public Facing
Portal(s)

Discoverable

Value
Added
Providers

Discoverable

web services, e-mail,
VHF, VDES

*The S-125 service will only include that
S-124 Data related to ATON outages & d
iscrepancies, the inclusion of which is in
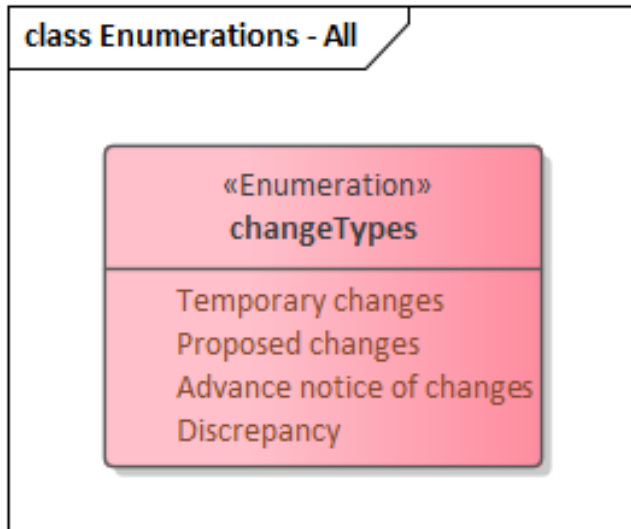duplication to full the S-124 data set/ser
vice.

Human Readable
Reference (S-12)

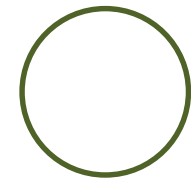# Main document
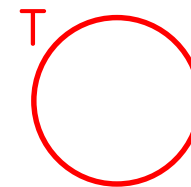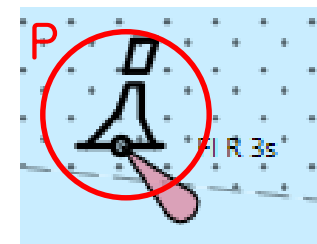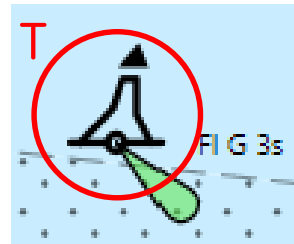
- Operational process of S-125

# S-125 Portrayal

● Discussion in ARM15



## Change Types

1. Temporary changes : T
2. Proposed changes : P
3. Advance notice of change : A
4. Discrepancy : D

(Option) Restored

# Future plan

- Main document
  - Refine the text and application schema
  - Add more text to improve the main document
  - Follow the S-100 edition 5.0 (GML and Metadata)
- Working schedule
  - After ARM15, prepare the S-125 packages.
  - Have a inter sessional meeting and submit for ARM16, 2022

```
                    ┌─────────────────────┐
                    │   S-125 Data Model  │
                    └─────────────────────┘
        ┌─────────────────┼─────────────────────────┐
        ▼                 ▼                          ▼
┌───────────────┐  ┌─────────────┐         ┌────────────────┐
│ Main document │  │  S-125 FC   │         │ S-125 Portrayal│
└───────────────┘  └─────────────┘         └────────────────┘
        ▲            ┌────┴────┐
┌───────────────┐    ▼         ▼
│   Metadata    │ ┌──────────┐ ┌────────────┐
└───────────────┘ │S-125 DCEG│ │ GML Schema │
                  └──────────┘ └────────────┘
                                     ▼
                              ┌────────────┐
                              │ New Sample │
                              │  Dataset   │
                              └────────────┘
```