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

**X** ARM **□** ENG **□**  PAP **□** Input

**□** DTEC **□** VTS **X** Information

Agenda item [[2]](#footnote-3) 8.4

Technical Domain / Task Number 2 7.1.4

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S-125 Update and Future plan

# Summary

IALA ARM is developing S-125 on behalf of IHO NIPWG and has revised S-125 in connection with the development of the operational version of S-201. IHO NIPWG shared the revision schedule of S-125 in relation to the establishment of the development timeline for Phase 2 product specifications in the S-100 implementation roadmap.

## Purpose of the document

Updates to the S-125 revision, made in connection with the development of the operational version of S-201, were reported, and the development schedule for the operational version of S-125, coordinated with IHO NIPWG, was shared

## Related documents

S-100 IHO Universal Hydrographic Data Model (Edition 5.2.0, June 2024)

S-97 IHO Guidelines for Creating S-100 Product Specifications (Edition 1.1.0, June 2020)

S-201 Aton Information product specification

S-125 Marine Aids to Navigation product specification

# Background

The IALA ARM Committee is developing S-125 on behalf of the IHO NIPWG and is cooperating with the DTEC Committee for the development of the S-125 technical service specification.

# Discussion

## S-125 Updates

At ARM18, it was decided to develop the S-201 to be compatible with the S-57 ENC and to develop S-125 as a subset of the S-201 PS. However, according to the decisions made at ARM19, it was later decided that the S-201 standard would be developed to be compatible with the S-101 ENC. As a result of this decision, the update of S-125 was waited, and the revisions made to the S-201 data model were reflected in the S-125 data model."

The major revisions of S-125 can be considered equivalent to those of S-201, and the following data model changes have been incorporated into the S-125.

* The name of structure featuretype changed to be in line with S-101 ENC
* The Topmark is now associated with a floating structure, rather than a fixed structure.
* Similar to the S-101 ENC, the Light feature has been divided into four distinct features: LightAllAround, LightAirObstruction, LightFogDetector, and LightSectored.
* Bridge and Building features have been added as structures where AtoN equipment can be installed.
* The AtonStatusInformation type, which represents the status of AtoNs, has been refined to eliminate redundancy and errors in its change information enumerations.
* The Complex Attribute types included in the S-201 data model have been updated by referencing the S-101 AtoN model.
* A new abstract class, GenericLight, has been defined to include common attributes shared among different Light features.

Based on the results of the data model revision discussions, the S-125 standard has been updated through the following procedures:

* Updated the application schema
* Developed the S-125 Feature Catalogue (FC) using the S-100 Feature Conceptual Base (FCB) in accordance with UML diagram revisions
* Converted the S-125 FC to GML Schema (Default encoding)
* Compiled the S-125 FC documentation
* Updated the S-125 Portrayal Catalogue

## Components of S-125 package and Download location

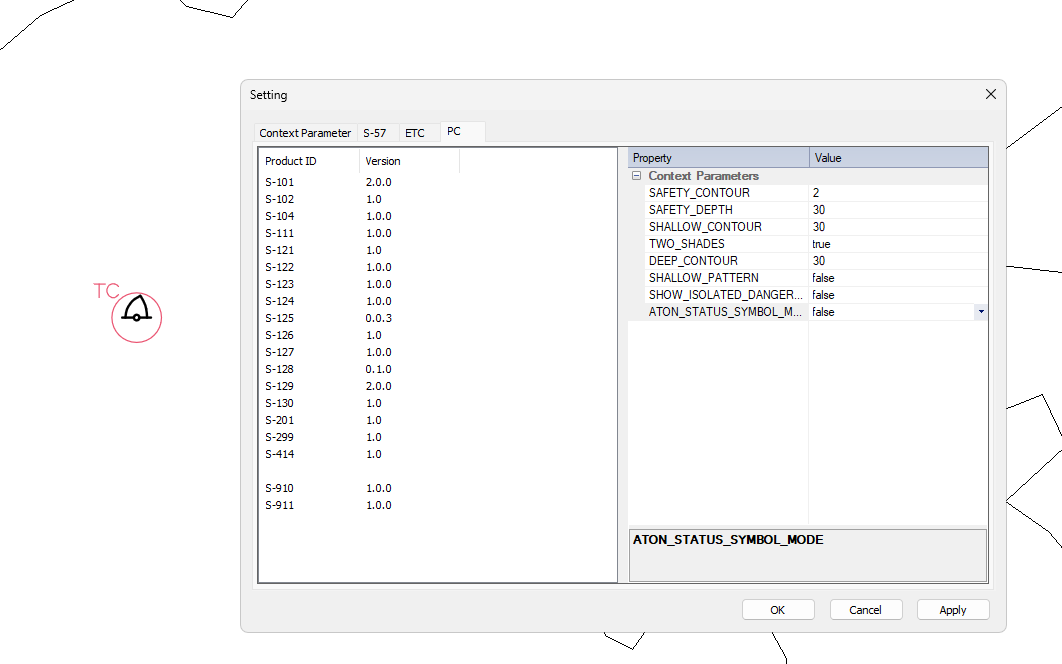
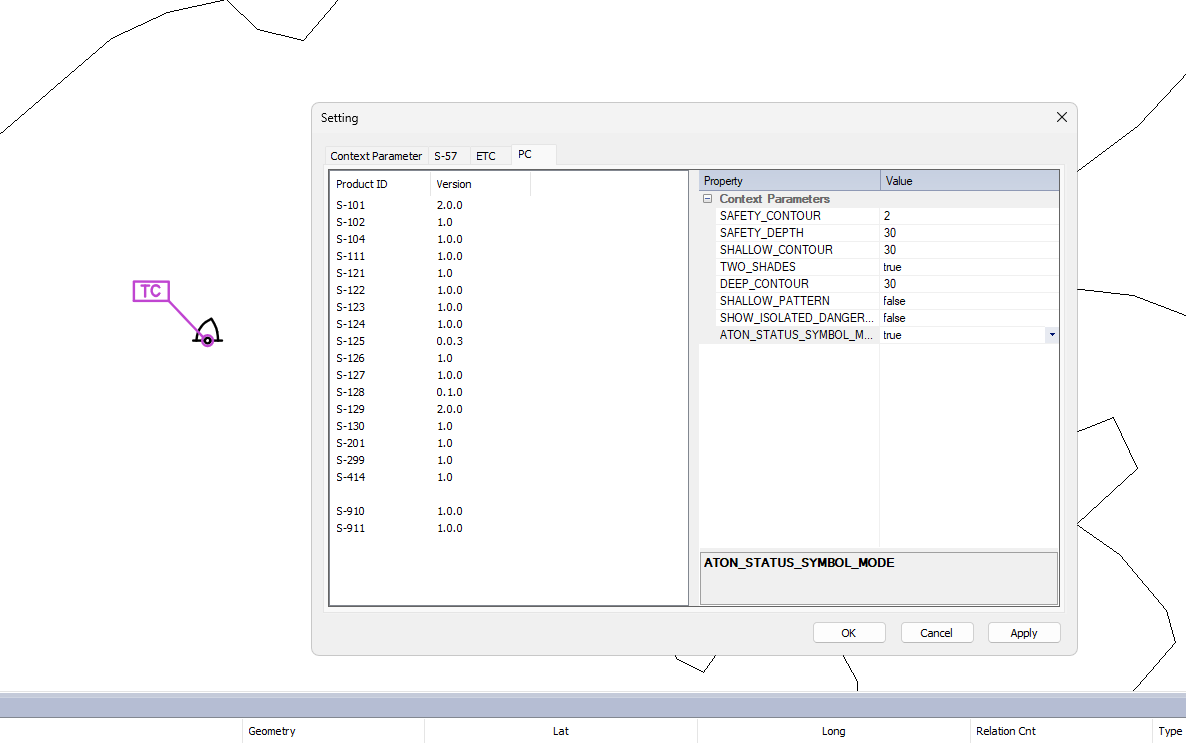
"Taking the S-201 operational version into consideration, the S-125 Product Specification (PS) was updated, and the version of the document under development was revised to 0.0.4. The S-125 version 0.0.4 consists of the following contents.

* S-125 main document: Application schema, management and maintenance of S-201 data, data quality, exchange set including metadata
* Annex. Default encoding (GML Schema): This package contains the S-100 Part 10b compliant GML schemas for the specification of the data product encoding for S-125 datasets.
* Annex. Feature Catalogue: This package is generated from the accompanying XML S-125 feature catalogue and presents the feature catalogue in a human reader-friendly form.
* Annex. Feature Catalogue XML: The package contains the S-125 feature catalogue in a machine-readable XML format, which complies with the IHO S-100 feature catalogue schema. This document is meant for use by systems that are intended to read/write S-125 datasets.
* Annex D. Portrayal Catalogue: The package contains the S-201 portrayal catalogue.

The S-125 version 0.0.4 package can be downloaded from the ARM20 folder on the IALA Fileshare.

## S-125 Dataset Production and Testing

The Ministry of Oceans and Fisheries, Korea and KRISO conducted a sea trial of the AtoN (Aid to Navigation) information service in conjunction with the S-100/S-200 training of the IALA WWA. This trial involved providing S-124 navigational warnings and S-125 AtoN status information to vessels via a 5G network, using Korea’s locally developed AtoN information management system and service platform. During the trial, AtoN data based on S-125 version 0.0.4 was produced, and the service test was carried out considering the S-125 service specification and the SECOM interface requirement. Additionally, two types of AtoN status symbol representations based on S-125 were prepared, and feedback was collected from participants in the trial.



## S-125 시험 및 운영버전 개발 일정

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Fig. 1. Comparison of Aton status symbol in S-125

## Development Plan for the S-125 Test Version and Operational Version

As part of developing the S-100 implementation roadmap, the IHO categorized the application priorities of S-100-based product specifications into two phases. The application priorities of the S-100-based product specifications are as shown below and in the following figure.

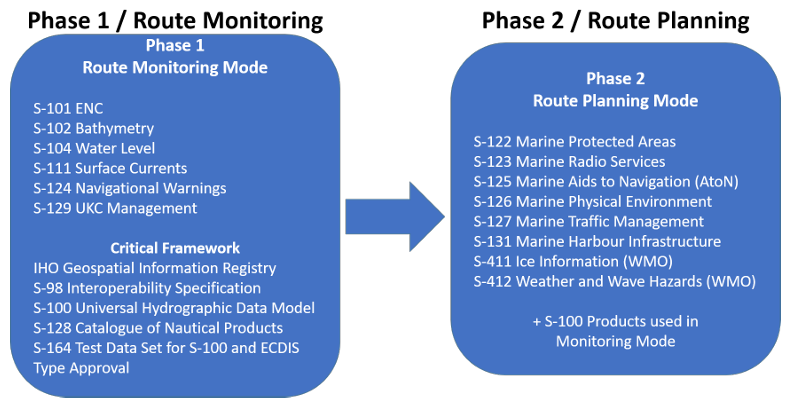


Fig. 2. S-100 Implementation Priorities

Phase 2 includes the S-12X product specifications, which provide overlay information to the S-101 Electronic Navigational Chart (ENC). NIPWG, which is responsible for developing these product specifications, has defined the development timeline for Phase 2. In this context, the development schedule for S-125 has been coordinated accordingly and is shared as follows.

|  |  |  |
| --- | --- | --- |
|  | Start | End |
| Development of Edition 5.x. for S-100  Development of Edition x.x.x for PS | 2019-April | 2025-April |
| Development of Testing version  Implementation, test, evaluation from Ed 1.0.0 to Ed 1.n.n | 2025-April | 2025-Sep |
| Development, test, finalization Ed 2.0.0 | 2025-Oct | 2026-Sep |
| Endorsement and publication of Edition 2.0.0 | 2026-Oct | 2027-Sep |
| Implementation | 2027-Sep | 2028-Mar |
| Operational Data | 2028-Apr | 2030-Dec |
| Next edition | TBD | TBD |

# Action requested of the Committee

The Committee is requested to consider this input paper, and take actions as appropriate.

1. Input document number, to be assigned by the Committee Secretary [↑](#footnote-ref-2)
2. Leave open if uncertain [↑](#footnote-ref-3)