

HSSC16 PRIMAR activities in support of the S-100 Implementation Roadmap

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Acivities in support of roadmap - general examples



 Operational infrastructure ☐ IHO SA Application Technical standardization ☐ Partake in the IHO technical Working Groups Coordinated implementation of services □ Conducted Dual Fuel Task Force project Developing S-57/S-101 service Collaboration with industry Continued use and testing of software Capacity Building of Hydrographic Offices ☐ Training Portal and technical workshops. Development of Global Distribution Capability

Implementation and development of S-100 services

Roadmap for the S-100 Implementation Decade (2020 - 2030)

Version 3.0, October 2023

References: A: Decision A2/29: endorsement by the Assembly of version 1.0 Rev1

following Proposal A2/2.1

B: List of actions and decisions from 2nd Meeting of IHO Council (C-2) 2018

C: List of actions and decisions from 3rd Meeting of IHO Council (C-3) 2019

D: List of actions and decisions from 4th Meeting of IHO Council (C-4) 2020 E: List of actions and decisions from 5th Meeting of IHO Council (C-5) 2021

F: HSSC13 Report to IHO Council (C-5)

G: IRCC13 Report to IHO Council (C-5)

H: IHO Report to IMO (NCSR8/13/1 dated 09 February 2021)

I: IHO Resolution 1/2021 - WEND 100 Principles

J: Decisions and Actions IHO Council (C6/32 to /36, October 2022)

K: Decision A3/13 Dual Fuel Concept for S-100 ECDIS

L: Decision A3/14 S-100 Infrastructure Center

The Roadmap for the S-100 Implementation Decade (2020-2030) constitutes a transition plan aiming to the regular and harmonized production and dissemination of S-100 based products The referenced Meetings of the IHO Council confirmed repeatedly the decision to task the chairs of the Council, HSSC, IRCC and the Secretary-General, supported by subject matter experts and Member States as appropriate, to maintain the Roadmap as an incremental version-controlled document (including parrative and timelines) on an annual basis.

This task includes the mandate of the Secretary-General to engage with the IMO to regularly update on the status of the S-100 framework and potential future impact on IMO instruments (Ref. B: Action C2/32).

Based on the evolutionary process made with the subject matter under the auspices of IRCC and HSSC since C-2 in 2018 and in view of the recent Decisions made by A-3, the noted group of office bearers decided to review this document which now includes endorsed amendments as proposed by HSSC as described in Annex 2 of the HSSC report and by the WENDWG as contained in Annex A of the IRCC report to C7. The structure of Version 2.1 of the document remains unaltered for Version 3.0:

1 Operational infrastructure

2. Technical standardization

3. Coordinated implementation of services

4. Synchronization with IMO

5. Collaboration with industry

6. Capacity Building of Hydrographic Offices

7. Development of Global Distribution Capability

Version 3.0 also include four Annexes as follows:

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Topics



- □PRIMAR S-100 services
- □PRIMAR S-100 ongoing projects
- □PRIMAR capacity building
- □PRIMAR contribution to IHO
- □PRIMAR concerns and recommendations



PRIMAR S-100 Services

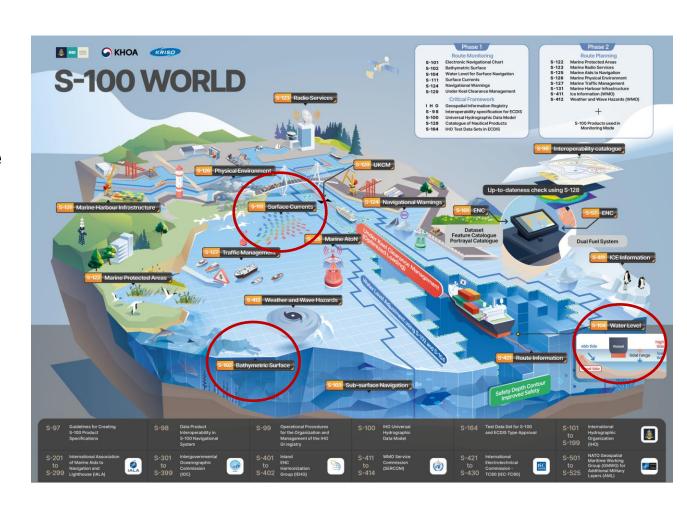
FREEDOM TO CHOOSE



PRIMAR S-100 service status

S-102 & S-111 services launched in June 2020.

☐ The S-104
service became ready for receiving data in October 2022.





PRIMAR S-100 service status

PRIMAR Production

S-102

- 90 from Norway
- 1308 from Canada

S-111

- 1467 from Canada

S-104

- No official data yet

PRIMAR Test Environment

S-102

- 150 from Norway
- 461 from Canada
 Latvia, Sweden, Vietnam,
 Estonia, France

S-111

- 3 from Norway
- 1347 from Canada
 - 1482 from USA
- 29 from Taiwan France

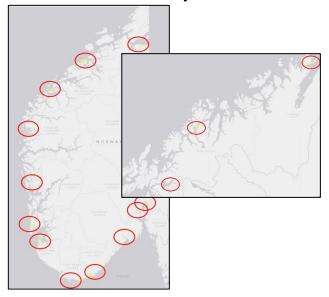
S-104

- 56 from Canada

Canada



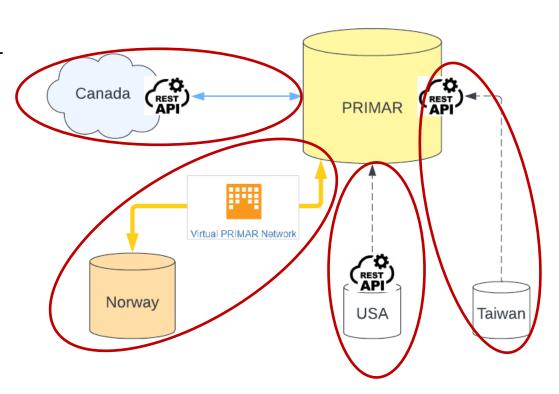
Norway





S-100 Data supply

- □ Canada S-102/S-111 & S-104 harvested from the Teledyne CARIS Cloud Service via a REST API integration
- Norway use the PRIMAR VPN Service for Upload of S-102.
- USA S-111 is harvested from NOAA's AWS S3 API service.
- ☐ Taiwan is testing the PRIMAR ExchangeSetLoader REST API Service for automatic upload of their S-111 datasets.





S-100 Data Validation

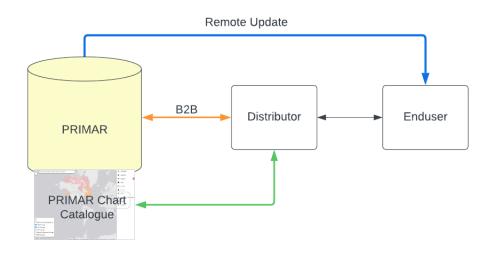
- ☐ Automatic validation tests carried out during upload.
 - ☐ Errors and warnings distributed either as reports in VPN interface or as a Service for those using API integration.
- ☐ Only a handful of checks are implemented at this stage. Mainly due to maturity of the individual product standard.
 - ☐ More checks will be carried out as we continue to grow and learn from our experiences.



S-100 Data Distribution

- ☐ S-100 Part 15 encryption
- Userpermit registration
- Catalogue service
- ☐ Licensing:
 - 3, 6, 9, 12 month, Trail, Demo, R&D
- Multi product purchase
- Multi product delivery

CellDownloadService (Remote Update Protocol/B2B Protocol)





PRIMAR S-100 ongoing projects

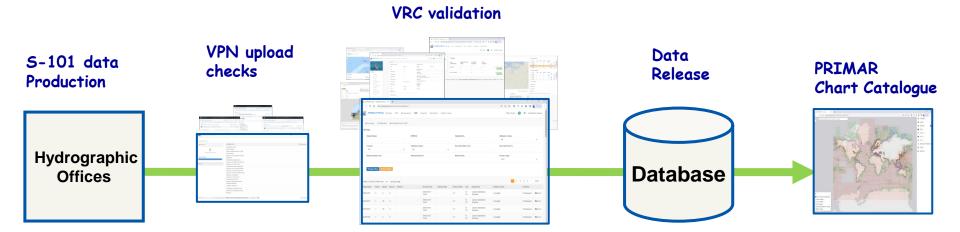


Ongoing S-100 projects

- ☐ CHS & PRIMAR S-100 Adaptation
- ☐ Data Protection Multi signatures
- ☐ Baltic Sea E-navigation
- ☐ Web Chart Service to Support S-102
- ☐ Validation Report Checker S-102
- ☐ PRIMAR S-100 Explorer
- ☐ S-128 Phase 2
- □ S-100 Adaptation 2024



PRIMAR S-101 Data Management and Validation PRIMAR®



- PRIMAR defined Checks
- IHO Checks

- S-57/S-101 Validation History
- Check of S-101 Validation logs from 7Cs Analyzer
- Visual compare of S-57/S-101
- Data coverage overview of S-57/S-101 data
- 5-101 Overlap Checker?

S-100 Coverage Viewer



S-57 ENC Validation



S-101 Validation



COS CAPACIANA CLIEFT Volyman - Viris - Vol Agramment - Volument -

New tool for HOs that shows the data coverage of S-57 ENCs and S-101 datasets simultaneously.

- ☐ Shows data coverage for S-57 ENC and S-101 datasets.
- Show data that are released and available in PRIMAR Chart Catalogue.
- Shows S-57 ENCs and S-101 datasets in combination with S-102 and S-111 datasets.
- □ To be made available in Betaversion in VRC for HOs during spring 2024.

PRIMAR®

Encryption and Digital Signatures

☐ All datasets encrypted.	
☐ No encryption for S-128 Catalogue of N	Nautical Products.
☐ <u>ALL</u> files in exchange set and servic ☐ All signatures compliant with S-100e5.2	
☐ ENC S-101e1.x will be digitally signed u	
☐ S-57 datasets will be signed/encrypted	using S-63.
Separate project for signature testin established.	g and management



PRIMAR Capacity Building

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PRIMAR®

PRIMAR S-100 Training Portal

- ☐ Capacity building content for Member States.
- ☐ Exchange & knowledge sharing.
- □ Reputation as a knowledge center.
- □ <u>2021</u>: Training portal launched.
- □ S-100
- □ S-101 and conversion
- □ <u>2022</u> Continued development.
- □ S-102
- □ S-111
- □ 2023 Continued development.
- ☐ S-104 (Ongoing)
- ☐ S-100 upgraded (5.0.0)
- ☐ S-101 upgraded (1.1.0)
- □ 2024 Continued development.
- □ S-104



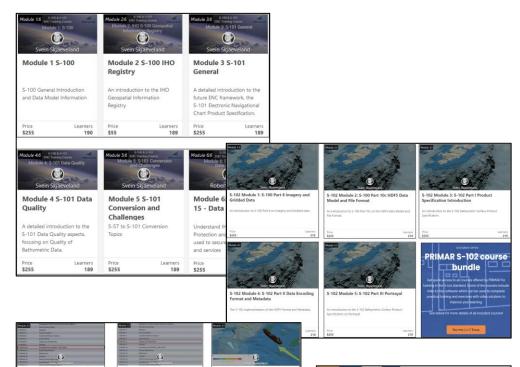
Launch of PRIMAR Learnworlds training portal June 2021

https://primar.learnworlds.com



Status

- □ Flexibility
- □ Always available
- Discussion forum
- Unlimited replays
- ☐ Full slide access
- ☐ Training software available
- Testdata available
- □ Content details
- 22 training modules
- □ ~27 hours video
- □ ~375 Quiz questions
- □ ~65 practical exercises
- ☐ High usage rate
- 477 Students
- 419 certificates



PRIMAR S-111 course bundle Certificate of Completion

Module 1 S-100

Ola Nordmann

PRIMAR

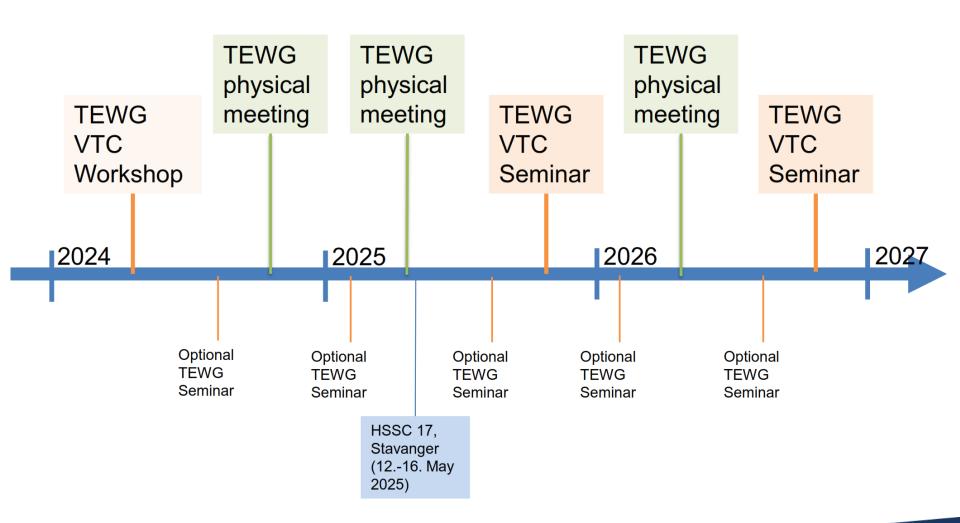
PRIMAR offer to CBSC



- □ PRIMAR to provide IHO Member States access to the PRIMAR Training Portal, based on applications through the CBSC.
- □ Access to the PRIMAR Training Portal for 5 nations annually 5 users each (25 altogether).
- Non-RENC nations.
- □ Apply to the CBSC for access.
- ☐ Annual monetary value: USD 80.000

PRIMAR TEWG increased activity







PRIMAR S-100 Contribution to IHO

FREEDOM TO CHOOSE



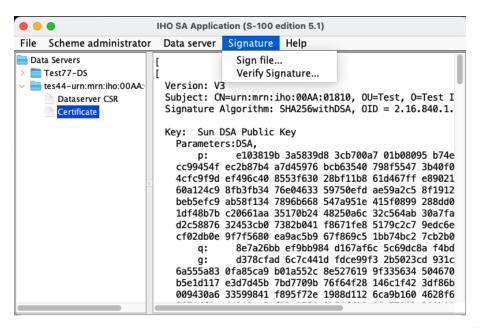
User Manual

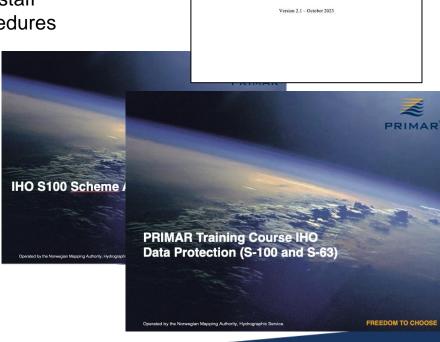
IHO Scheme Administrator application

For S-63, S-100e4 and S-100e5.1

Main Activities & Achievements

- ☐ IHO Scheme Administrator application
 - ☐ One application at IHO supports all: S63/S100e4/S100e5
 - Functionality:
 - Create Data Server Certificates
 - ☐ IHO to digitally sign FC/PC/IC catalogues S-100e5.2
 - ☐ IHO digital certificates:
 - Root certificate for Data Server Certificates
 - Data Server certificate for catalogue signing
- Training of IHO Protection Scheme Administrator staff
- Training in IHO Scheme Administrator Work Procedures







PRIMAR contribution to IHO

Formalized through an IHO - PRIMAR Letter of Intent

PRIMAR: supports IHO in maintaining and developing data protection standards. ■ supports IHO in its operation as data protection Scheme Administrator for S-100. operates a catalogue polling service for IHO to provide metadata information about all chart datasets available in the PRIMAR services. ☐ supports IHO in the promotion and operationalization of the S-100 family of standards among stakeholders ☐ to provide the IHO staff members access to the PRIMAR Training Portal. ■ to provide IHO members states access to the PRIMAR Training Portal, based on applications

through the CBSC.





PRIMAR concerns and recommendations

PRIMAR concerns and recommendations



☐ Framework stability.
☐Important for S-100 producers and implementers.
Promotion and information sharing.
Limited number of future S-100 implementers partake in the framework development.
☐ Ensure S-100 knowledge throughout the marine domain.
☐ Resources and risk.
☐ Availability of resources allocated to the S-100 development.
☐ Capacity Building.
☐ Embrace capacity building opportunities and initiatives.



Thank you for your attention

www.primar.org

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