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

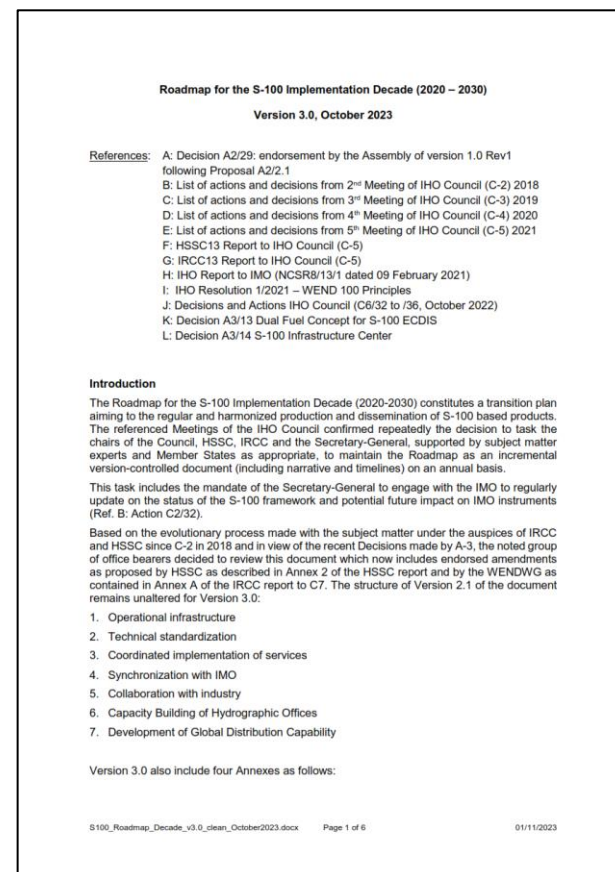
Svein Skjaeveland, Manager International Standardization



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Activities 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



Topics

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



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PRIMAR S-100 Services

Operated by the Norwegian Mapping Authority, Hydrographic Service

FREEDOM TO CHOOSE

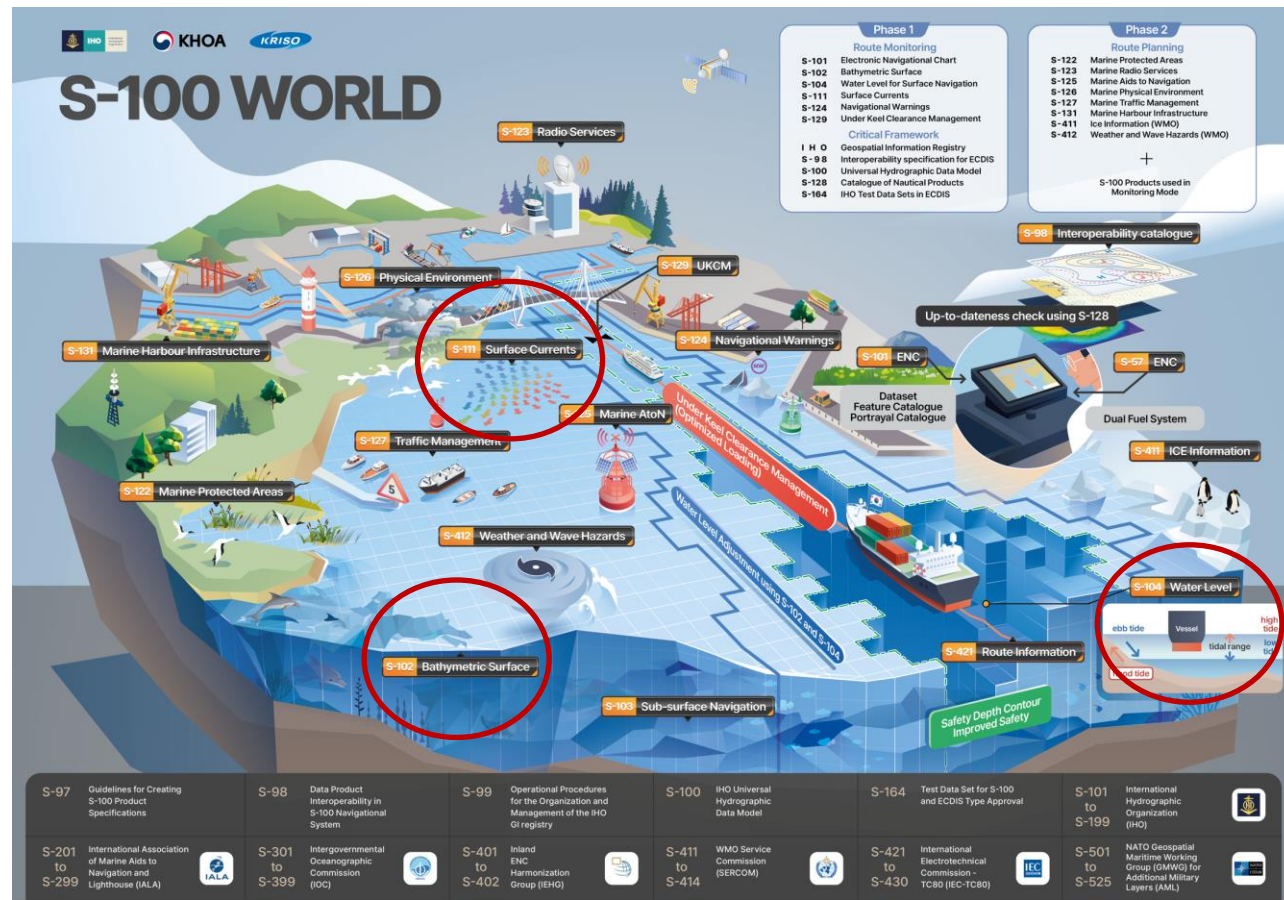


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PRIMAR S-100 service status

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

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





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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

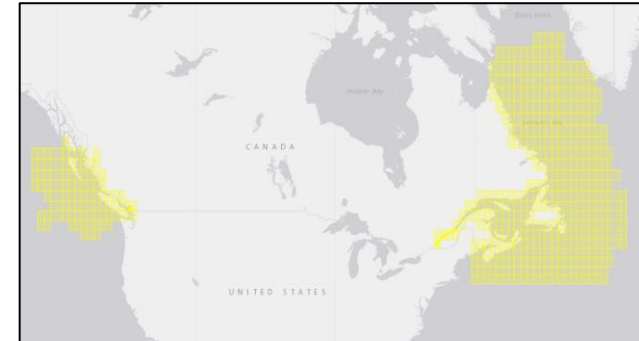
S-111

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

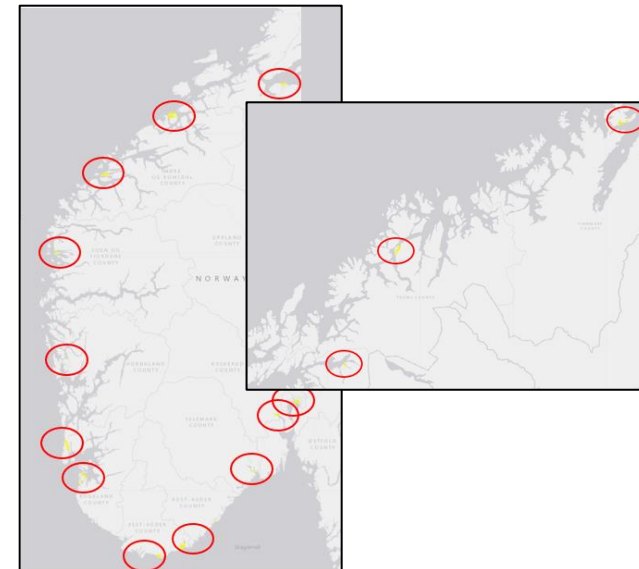
S-104

- 56 from Canada

Canada

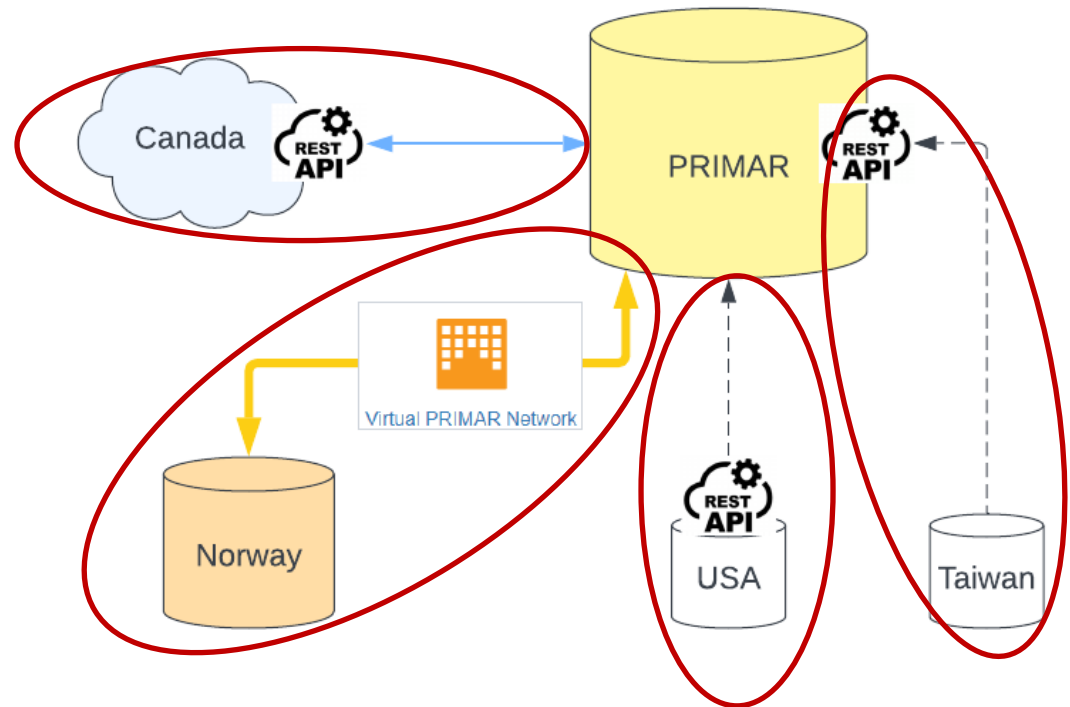


Norway



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.



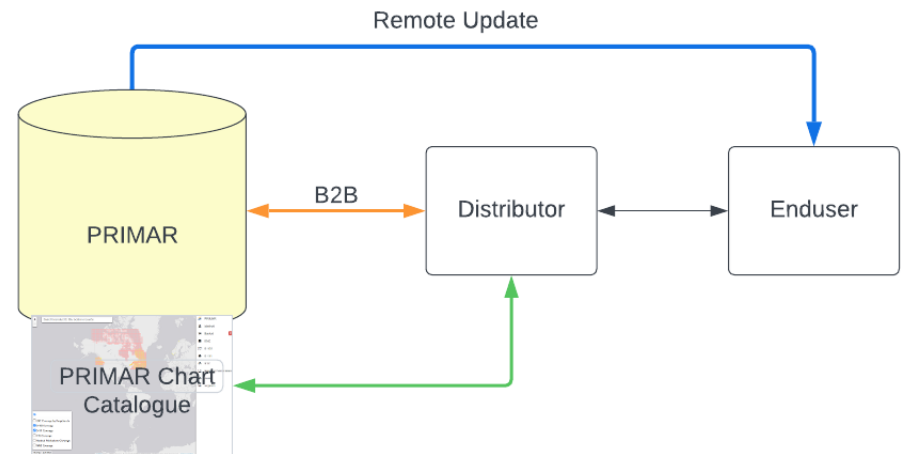
S-100 Data Validation

- ❑ 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
- ❑ User permit 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*)



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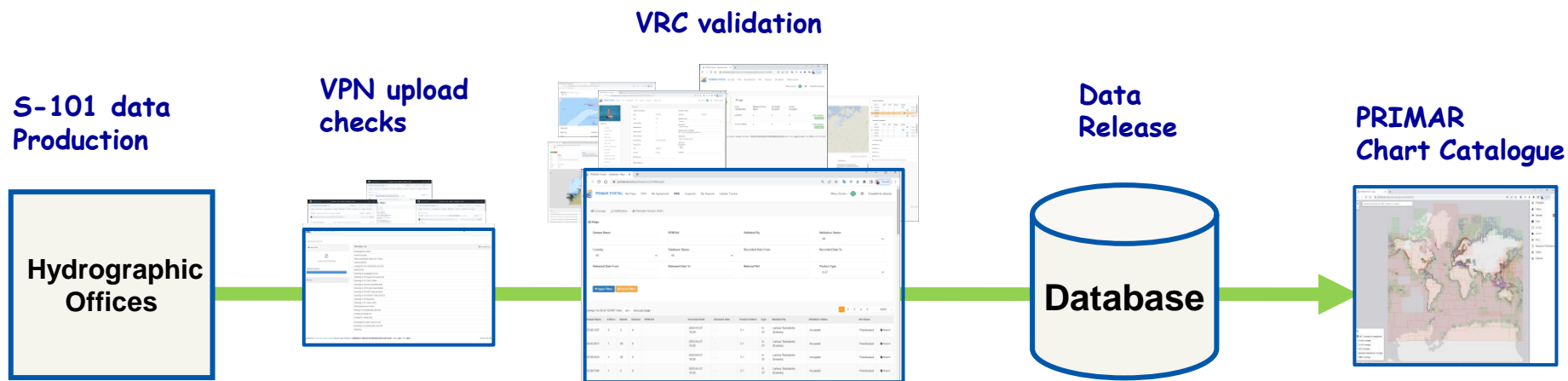
PRIMAR S-100 ongoing projects

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[®]

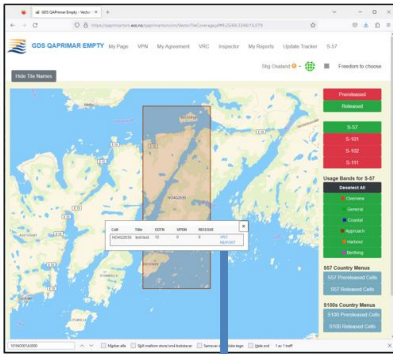


- PRIMAR defined Checks
- IHO Checks

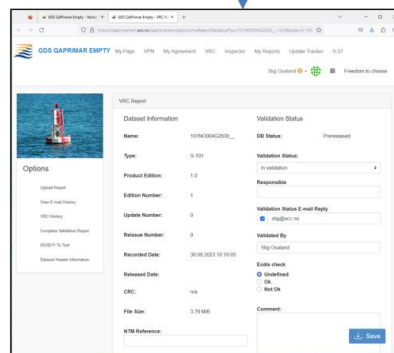
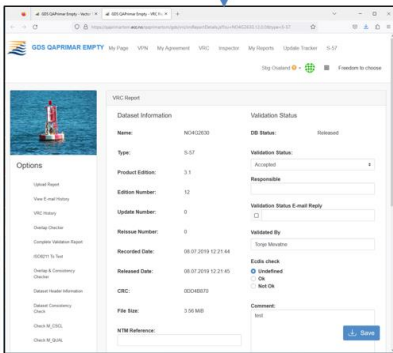
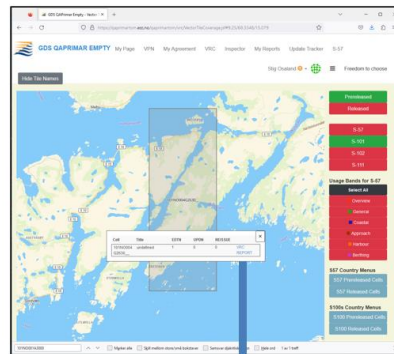
- S-57/S-101 Validation History
- Check of S-101 Validation logs from 7Cs Analyzer
- Visual compare of S-57/S-101
- Data coverage overview of S-57/S-101 data
- S-101 Overlap Checker?

S-100 Coverage Viewer

S-57 ENC Validation



S-101 Validation



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 Beta-version in VRC for HOs during spring 2024.

Encryption and Digital Signatures

- All datasets encrypted.
 - No encryption for S-128 Catalogue of Nautical Products.

- ALL** files in exchange set and service files digitally signed.
 - All signatures compliant with S-100e5.2.
 - ENC S-101e1.x will be digitally signed using S-100e5.2.
 - S-57 datasets will be signed/encrypted using S-63.

- Separate project for signature testing and management established.



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PRIMAR Capacity Building

PRIMAR S-100 Training Portal

- Capacity building content for Member States.
- Exchange & knowledge sharing.
- Reputation as a knowledge center.

- 2021: Training portal launched.
- S-100
- S-101 and conversion

- 2022 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

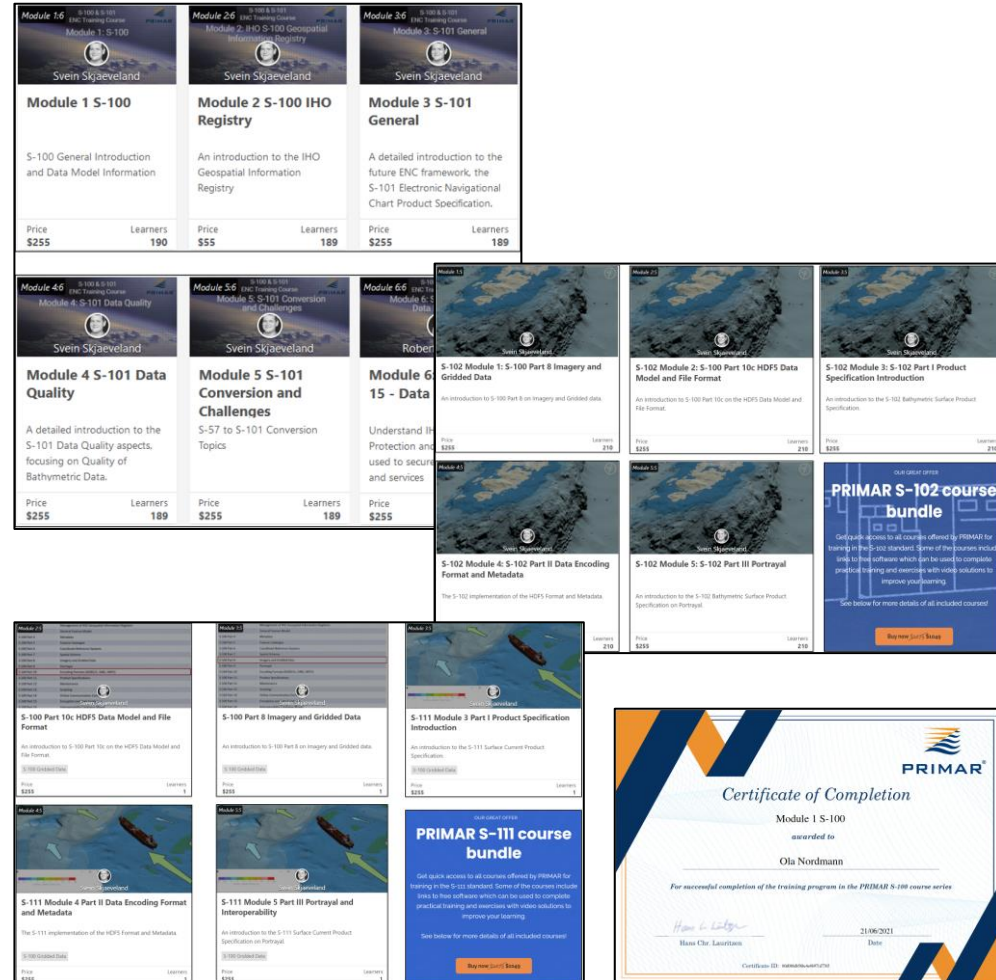
- Always available
- Discussion forum
- Unlimited replays
- Full slide access
- Training software available
- Testdata available

Content details

- 22 training modules
- ~27 hours video
- ~375 Quiz questions
- ~65 practical exercises

High usage rate

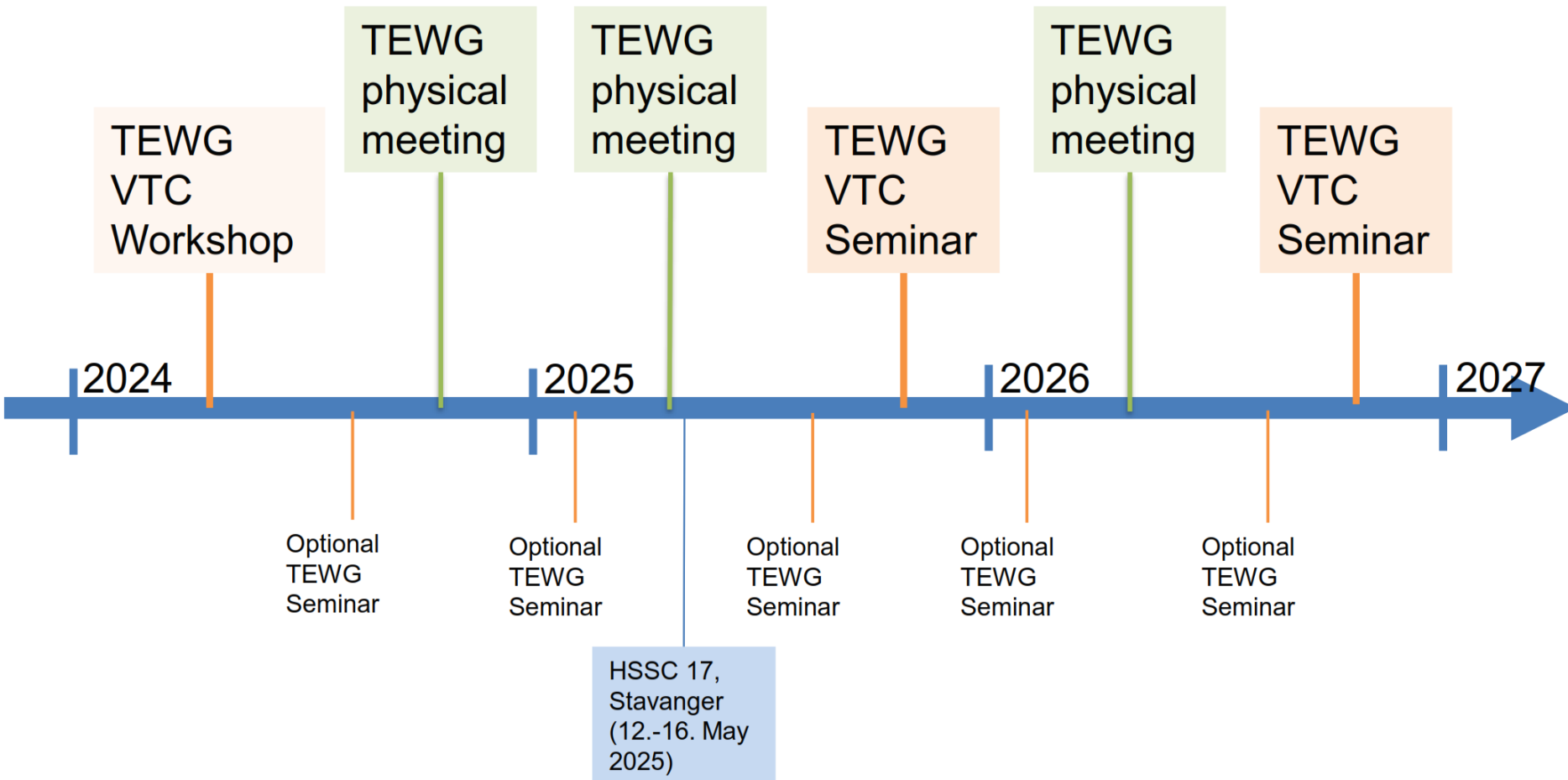
- 477 Students
- 419 certificates



PRIMAR 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





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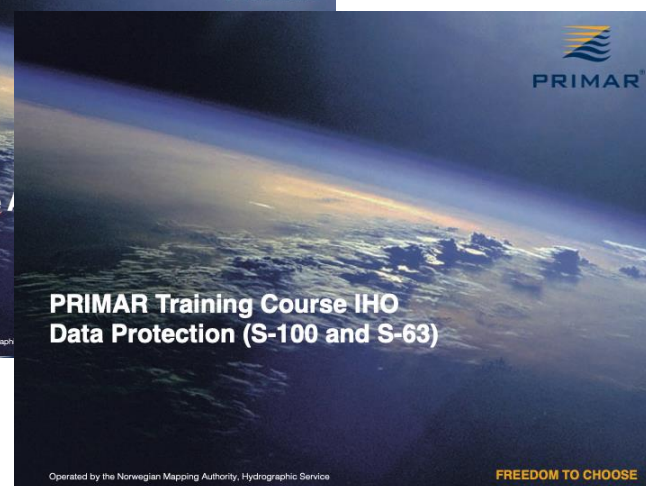
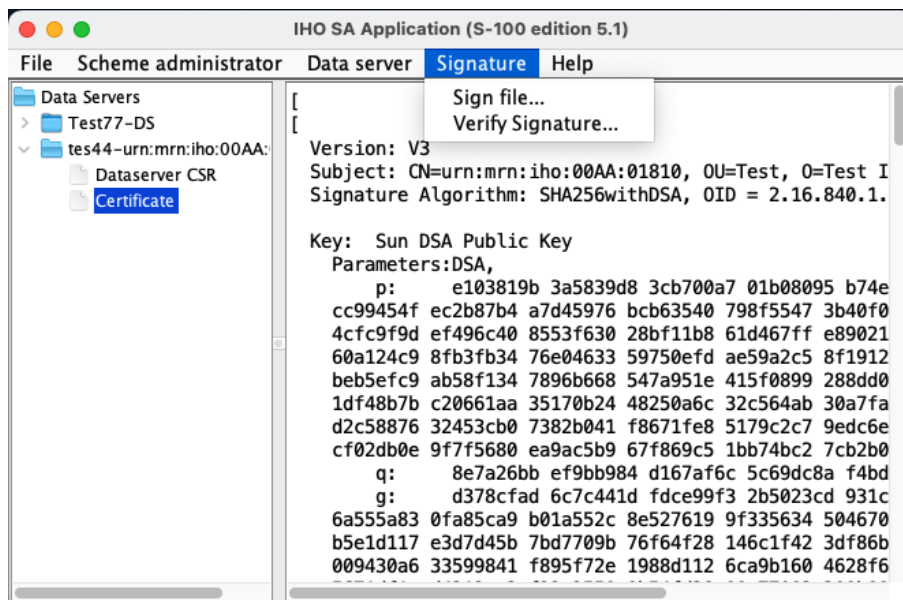
PRIMAR S-100 Contribution to IHO



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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





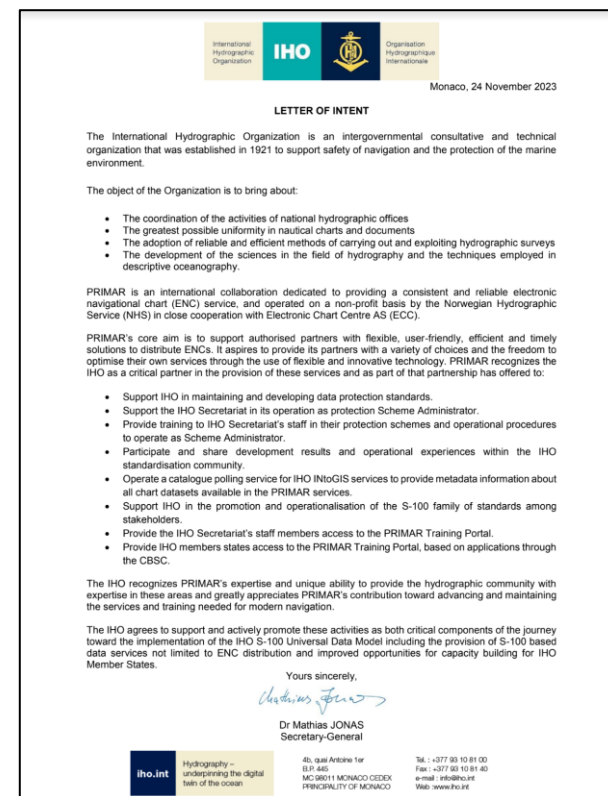
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PRIMAR contribution to IHO

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.





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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.



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Thank you for your attention

www.primar.org

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