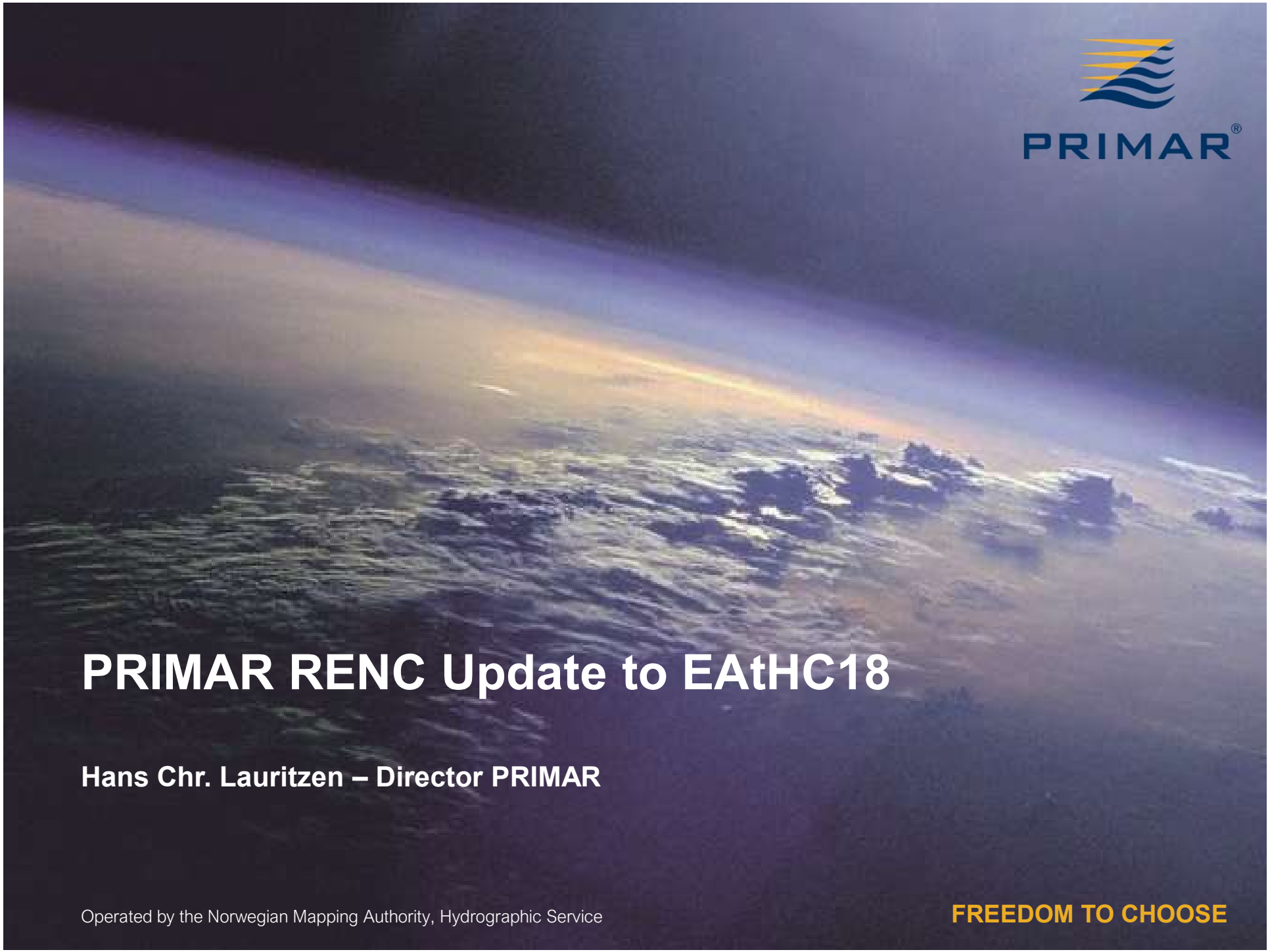


PRIMAR RENC Update to EAtHC18

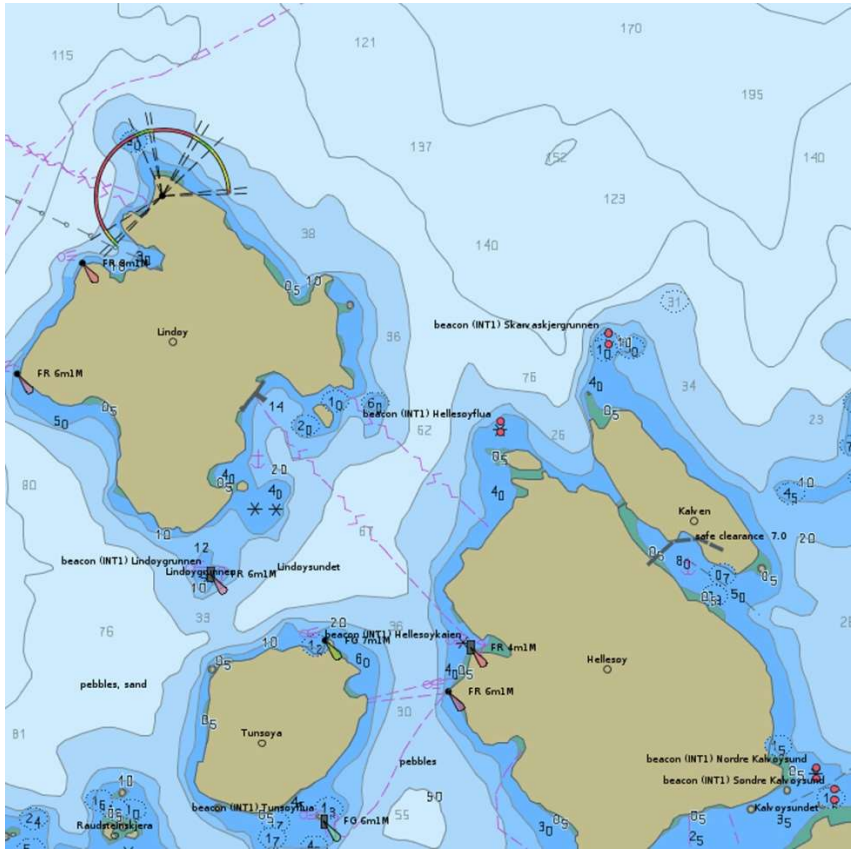
Hans Chr. Lauritzen – Director PRIMAR

Operated by the Norwegian Mapping Authority, Hydrographic Service

FREEDOM TO CHOOSE

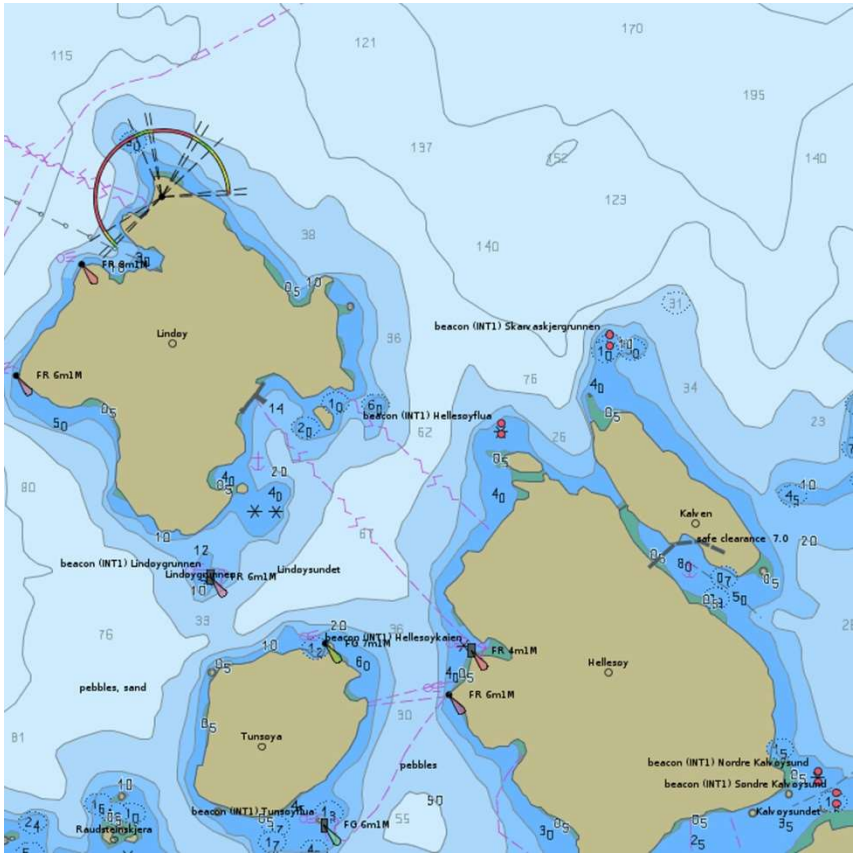
What is PRIMAR?

- A Regional ENC Coordinating Centre (RENC)
- Established in 1999
- Operated on a non-profit basis by the **Norwegian Hydrographic Service** in close cooperation with **Electronic Chart Centre** (ECC).
- Located in Stavanger, Norway



What does PRIMAR?

- Provides a consistent and reliable electronic navigational chart (ENC) and S-100 service world-wide.
- Fully compliant with IHO guidelines, principles and standards.
- PRIMAR RENC:
  - 17 members
  - ENCs from more than 70 different nations available in the PRIMAR ENC service.

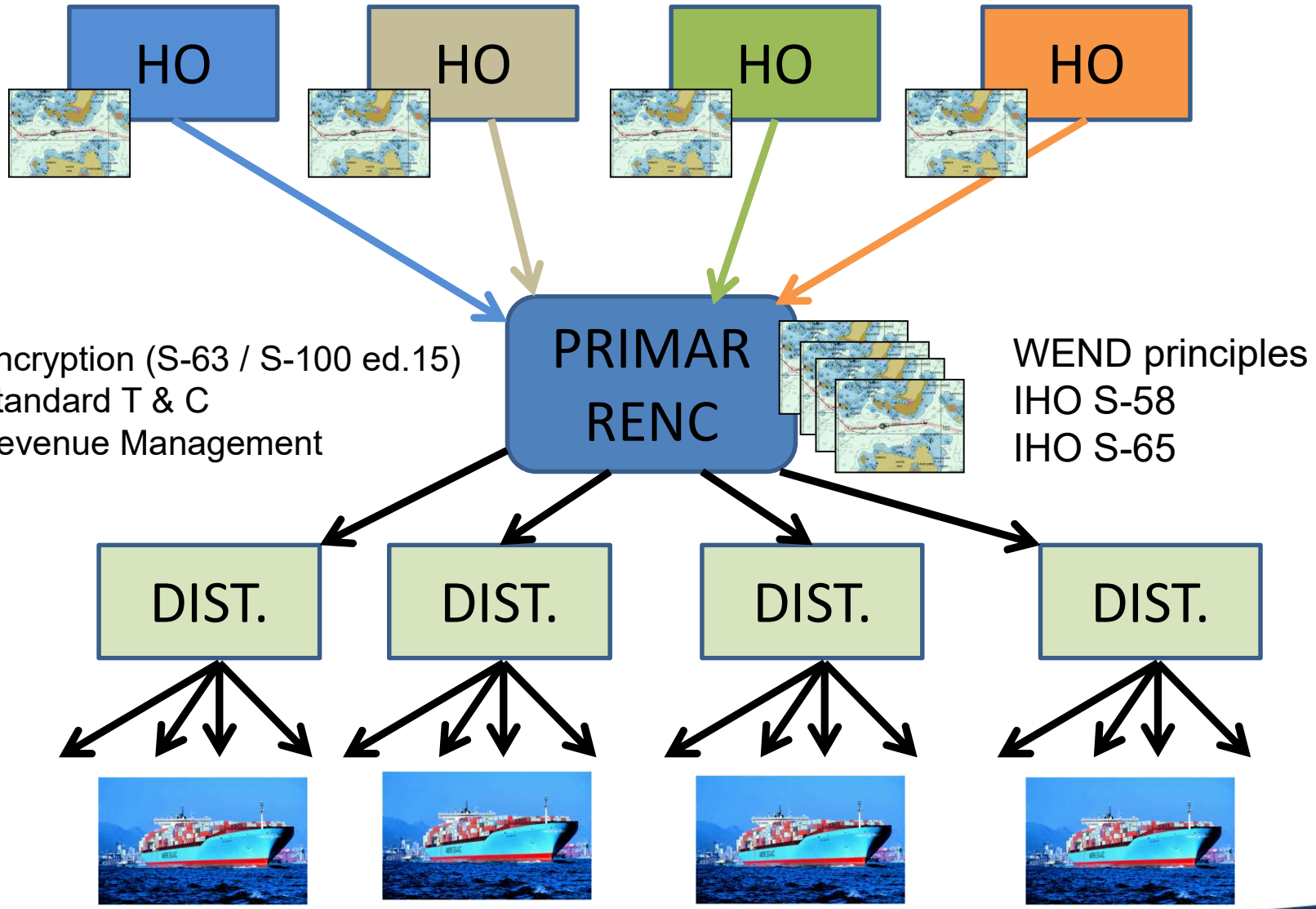


PRIMAR Governance

- All PRIMAR member nations are part of the PRIMAR Advisory Committee (PAC).
  - PAC has annual meetings.
  - Guidance and decisions on strategic, financial and technical issues.
  - The position of PAC Chair and Vice Chair rotates amongst the member nations.

- Working groups on strategic, financial, marketing and technical issues that provides input to PAC.

ENC and S-100 Distribution through PRIMAR



PRIMAR RENC value chain

PRIMAR®

PRIMAR RENC MEMBERS

- Albania
- Croatia
- Estonia
- Finland
- France
- Georgia
- Iran
- Latvia
- Lithuania
- Mozambique
- Norway
- Poland
- Sweden
- Russia
- Ukraine
- Vietnam (VHO)
- Vietnam (VMS-N)

> 70 different official ENC providers

PRIMAR ENC Database

> 20 000 ENCs

50 Commercial Distributors

13 Governmental Distributors

11 Navy Suppliers

Commercial users

Governmental users

Navy users

>37 000 registered end-users

PRIMAR LICENSING PARTNERS (Others)

- *Canada*
- *China*
- *India*
- *EAHC*
- *MSS*
- *Japan*
- *Korea*
- *PRD ENC*
- *Singapore*
- *NTOU (Taiwan)*

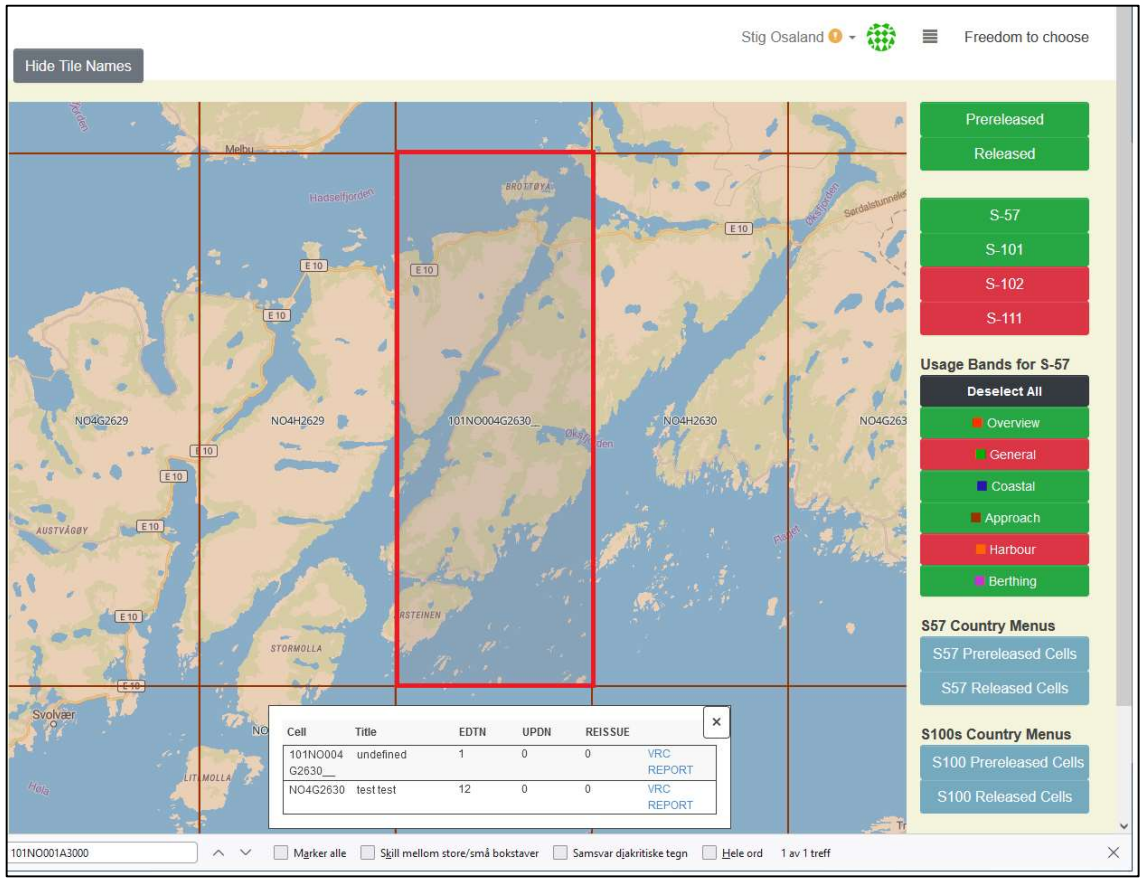
ALL IC-ENC RENC DATA

In-house Developed Validation tools

PRIMAR®

- Virtual PRIMAR Network (VPN) for data transfer and data management
  - S58 Upload Checks performed during the upload of data
- Validation Report Checker contains all the functionality for ENC Validation
  - Checking of validation logs from dKart Inspector and ENC Analyzer
  - Overlap Checker for overlapping candidates
  - Consistency checker for horizontal and vertical ENC consistency
  - S58 Upload Checks performed during the upload of data
  - ISO8211 to text converts EN/ER file to readable format
- S57 Advisor (Errors database) containing error/warnings discovered from validation tools

Dual Fuel Validation

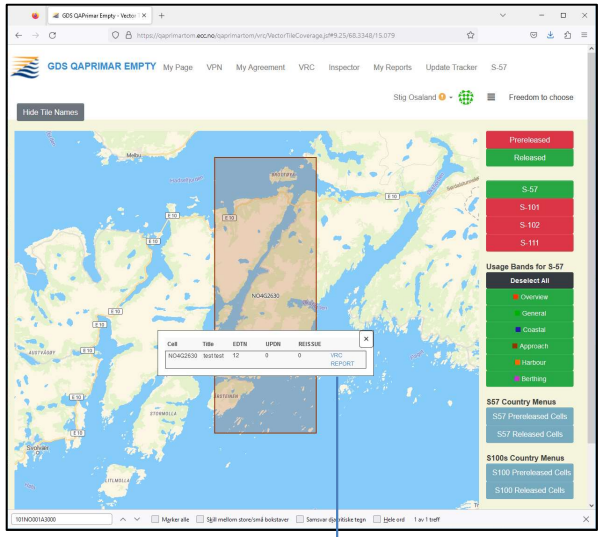


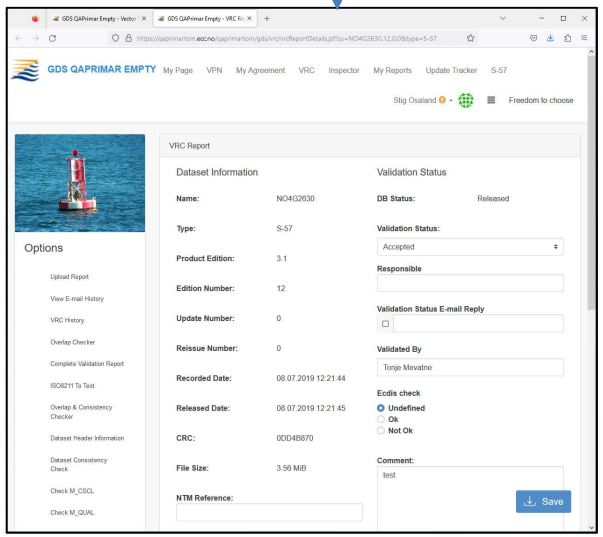
Example:

- S-57 and S-101 dataset shown in same area
- Click in the area and info about both datasets are shown

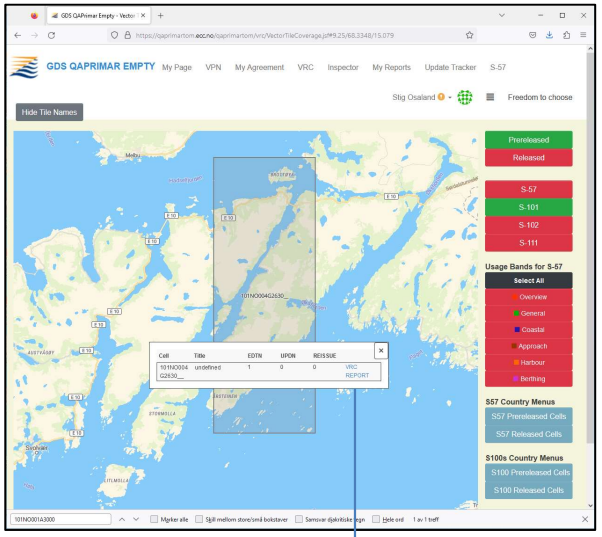
Dual Fuel Validation

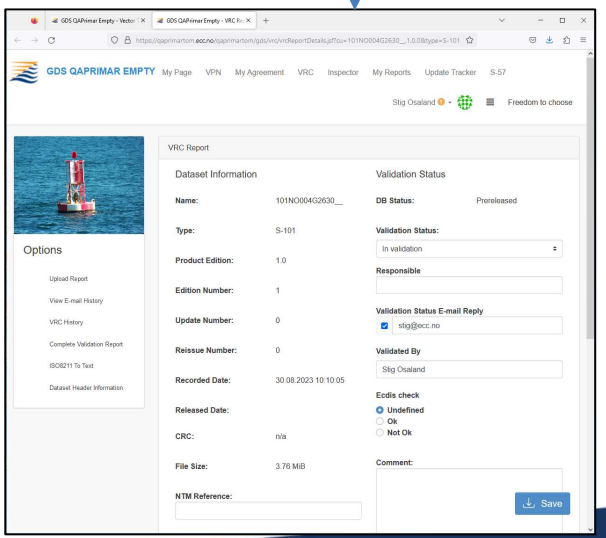
S-57 ENC Validation





S-101 Validation

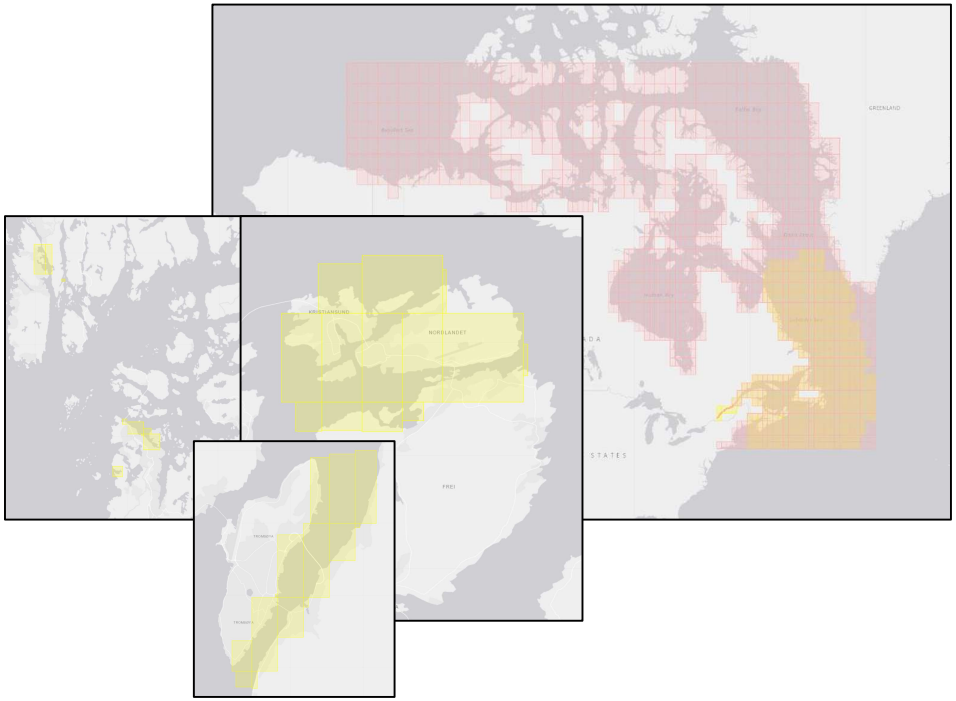




FREEDOM TO CHOOSE

PRIMAR S-100 Service

- The PRIMAR S-100 Service was launched July 2020.
- 2775 S-102/S-111 datasets from CHS and 90 S-102 datasets from NHS.
- Encrypted by S-100 Part 15.
- Automatic upload through CARIS cloud or manual through PRIMAR VPN.
- Push of data through the PRIMAR Remote Update Protocol.
- S-104 ready



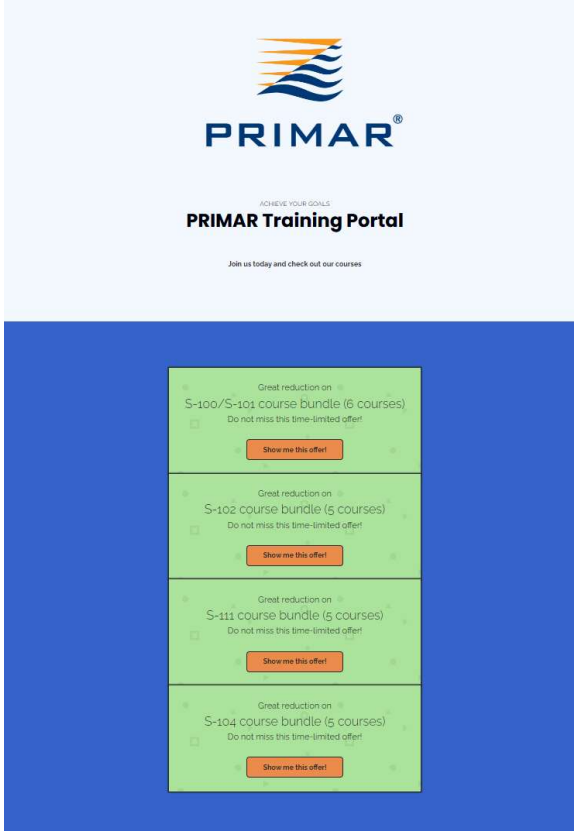
PRIMAR Training Portal

- 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 (Completed in 2024)
  - S-100 upgraded (5.0.0)
  - S-101 upgraded (1.1.0)



Launch of PRIMAR Learnworlds training portal June 2021
https://primar.learnworlds.com

Content – S-100 and S-101

Module 1 S-100

S-100 General Introduction and Data Model Information

Price **$255** | Learners **190**

Module 2 S-100 IHO Registry

An introduction to the IHO Geospatial Information Registry

Price **$55** | Learners **189**

Module 3 S-101 General

A detailed introduction to the future ENC framework, the S-101 Electronic Navigational Chart Product Specification.

Price **$255** | Learners **189**

Module 4 S-101 Data Quality

A detailed introduction to the S-101 Data Quality aspects, focusing on Quality of Bathymetric Data.

Price **$255** | Learners **189**

Module 5 S-101 Conversion and Challenges

S-57 to S-101 Conversion Topics

Price **$255** | Learners **189**

Module 6: S-100 part 15 - Data Protection

Understand IHO Data Protection and how it can be used to secure your products and services

Price **$255** | Learners **374**

OUR GREAT OFFER

PRIMAR S-100/S-101 ENC Course Bundle

Get quick access to all courses offered by PRIMAR for training in the S-100 and S-101 standards. Some of the courses include links to free software which can be used to complete practical training and exercises with video solutions to improve your learning.

See below for more details of all included courses!

Buy now ~~$1330~~ **$1099**

Content – S-102

S-102 Module 1: S-100 Part 8 Imagery and Gridded Data

An introduction to S-100 Part 8 on Imagery and Gridded data.

Price $255 | Learners 210

S-102 Module 2: S-100 Part 10c HDF5 Data Model and File Format

An introduction to S-100 Part 10c on the HDF5 Data Model and File Format.

Price $255 | Learners 210

S-102 Module 3: S-102 Part I Product Specification Introduction

An introduction to the S-102 Bathymetric Surface Product Specification.

Price $255 | Learners 210

S-102 Module 4: S-102 Part II Data Encoding Format and Metadata

The S-102 implementation of the HDF5 Format and Metadata.

Price $255 | Learners 210

S-102 Module 5: S-102 Part III Portrayal

An introduction to the S-102 Bathymetric Surface Product Specification on Portrayal.

Price $255 | Learners 210

OUR GREAT OFFER

PRIMAR S-102 course bundle

Get quick access to all courses offered by PRIMAR for training in the S-102 standard. Some of the courses include links to free software which can be used to complete practical training and exercises with video solutions to improve your learning.

See below for more details of all included courses!

Buy now ~~$1275~~ $1049

Content – S-111

S-100 Part 10c HDF5 Data Model and File Format

An introduction to S-100 Part 10c on the HDF5 Data Model and File Format.

S-100 Gridded Data

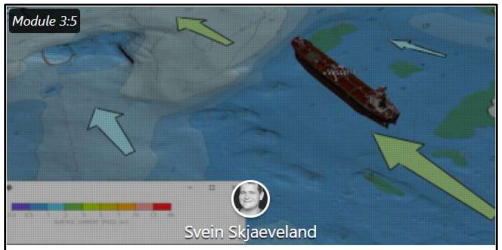
Price $255 | Learners 1

S-100 Part 8 Imagery and Gridded Data

An introduction to S-100 Part 8 on Imagery and Gridded data.

S-100 Gridded Data

Price $255 | Learners 1

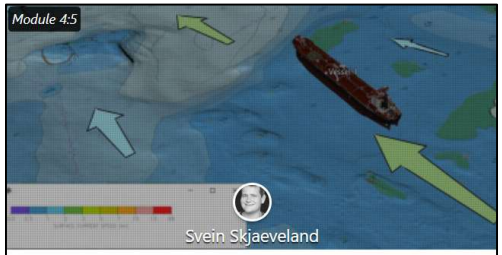


S-111 Module 3 Part I Product Specification Introduction

An introduction to the S-111 Surface Current Product Specification.

S-100 Gridded Data

Price $255 | Learners 1

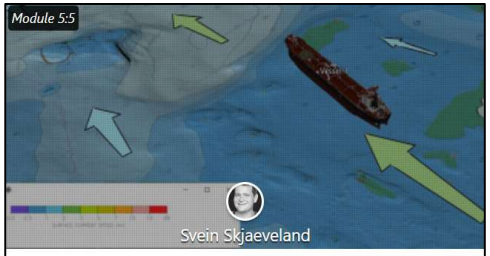


S-111 Module 4 Part II Data Encoding Format and Metadata

The S-111 implementation of the HDF5 Format and Metadata.

S-100 Gridded Data

Price $255 | Learners 1



S-111 Module 5 Part III Portrayal and Interoperability

An introduction to the S-111 Surface Current Product Specification on Portrayal.

S-100 Gridded Data

Price $255 | Learners 1

OUR GREAT OFFER

PRIMAR S-111 course bundle

Get quick access to all courses offered by PRIMAR for training in the S-111 standard. Some of the courses include links to free software which can be used to complete practical training and exercises with video solutions to improve your learning.

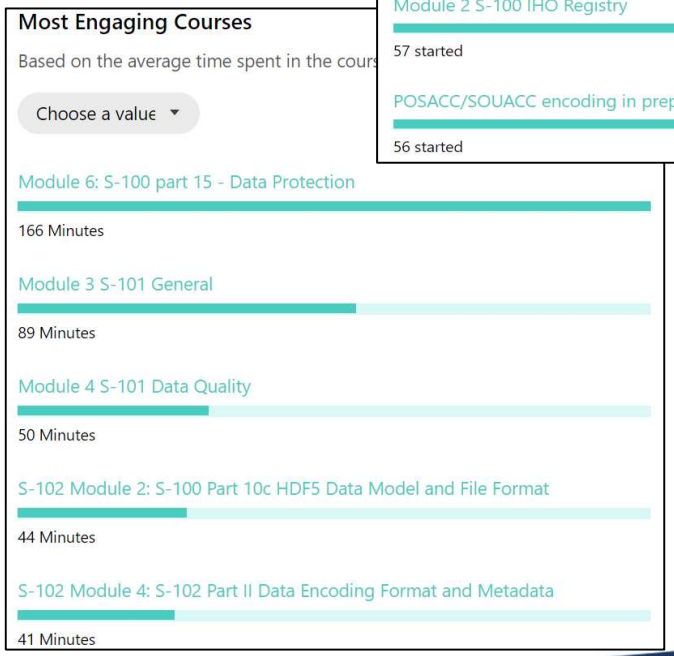
See below for more details of all included courses!

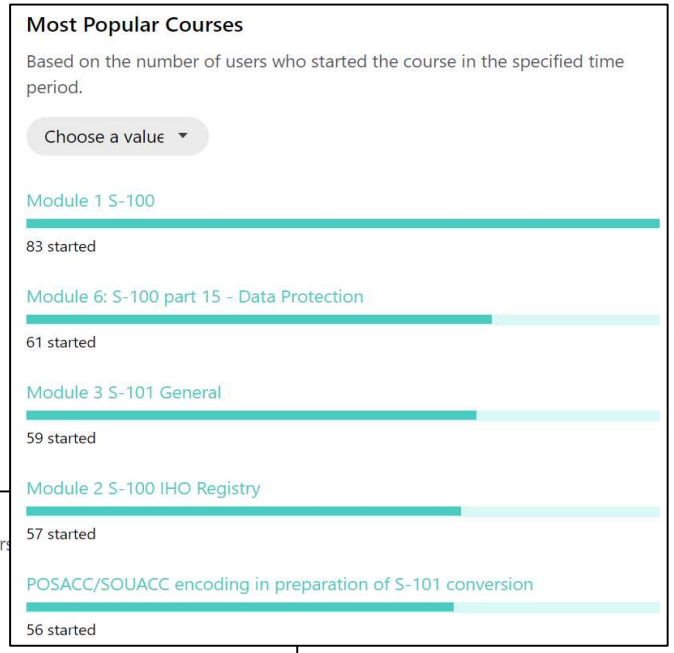
Buy now ~~$1275~~ $1049

Content – S-104

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
  - 463 Students
  - 409 certificates



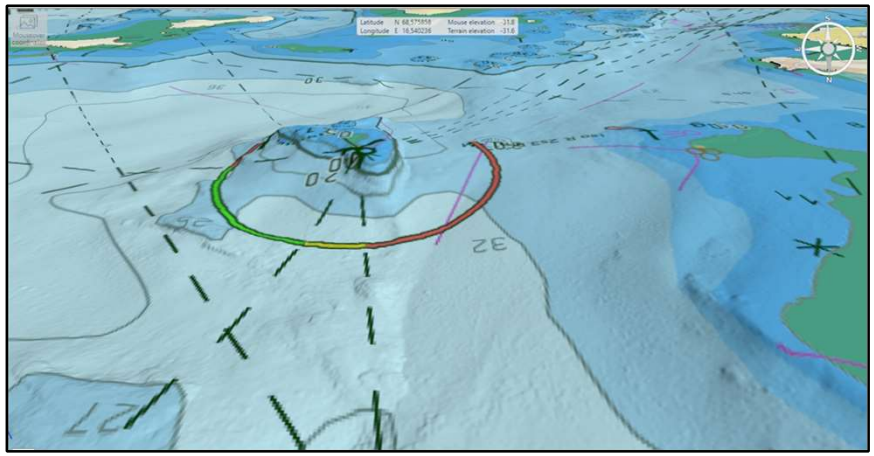


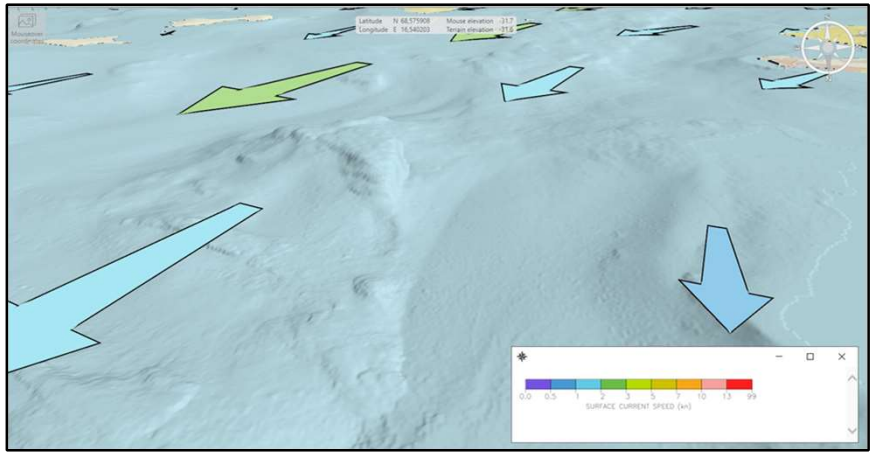
Certificate

PRIMAR Ongoing Projects 2024

- Develop support for:
  - S-100e5.2.0
  - S-101e2.0.0
  - S-128 dataset creation
  - S-102 upload validation checks and reports
  - S-102 Web Map Service
  - Information dashboard for member nations
  - CHS/Caris/PRIMAR S-100 distribution project
  - Baltic Sea E-nav project
  - Data protection multi-signature service
  - S-100 Explorer

PRIMAR S-100 Explorer Project

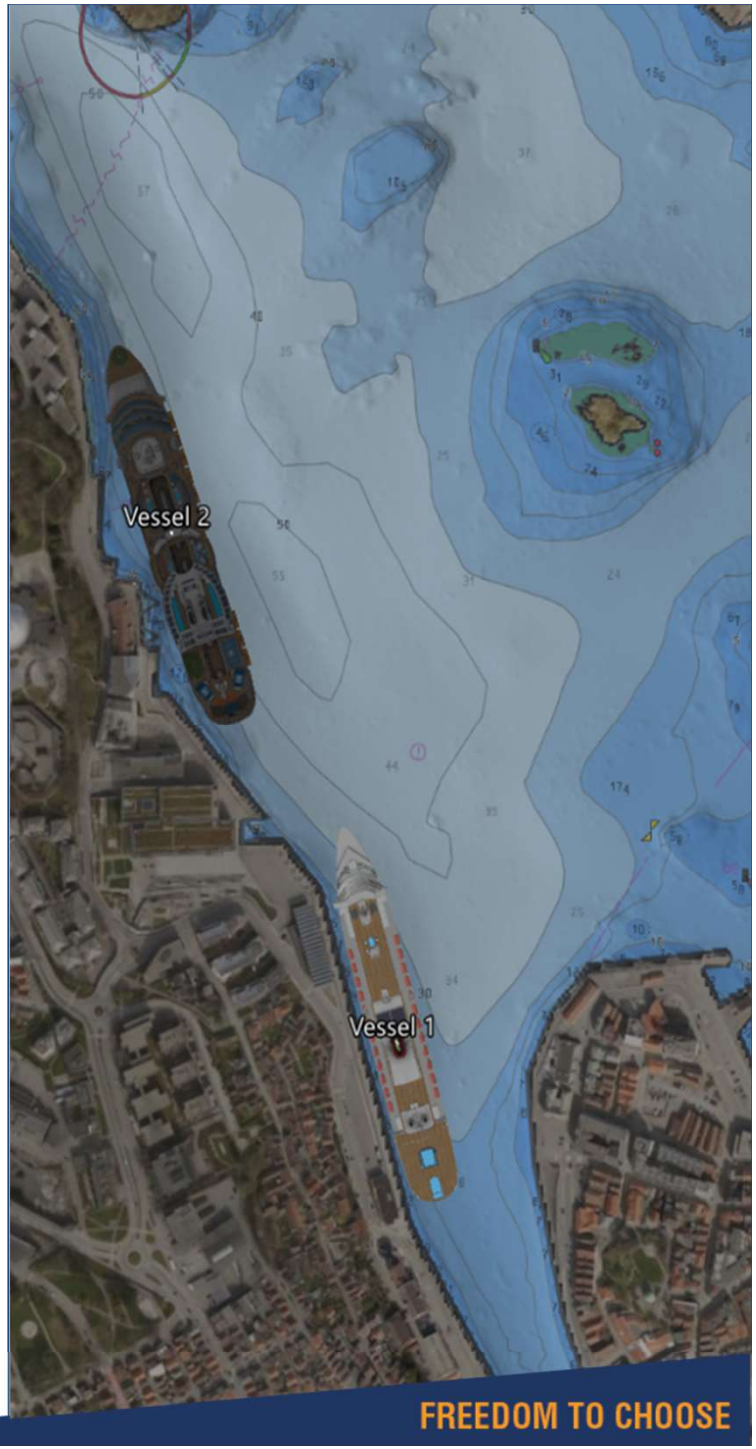




- Provide a Web based prototype of the S-100 Explorer.
- The prototype will cover visualisation of the following (also combined):
  - **S-57**
  - **S-101**
  - **S-102**
  - **S-104** (dynamic/timestamp)
  - **S-111** (dynamic/timestamp)
- S-100 Explorer will show data for multiple S-100 product specification variants from PRIMAR. For effective and standard based display, a combination of OGC 3D tiles, OGC WMS and APIs will be used.

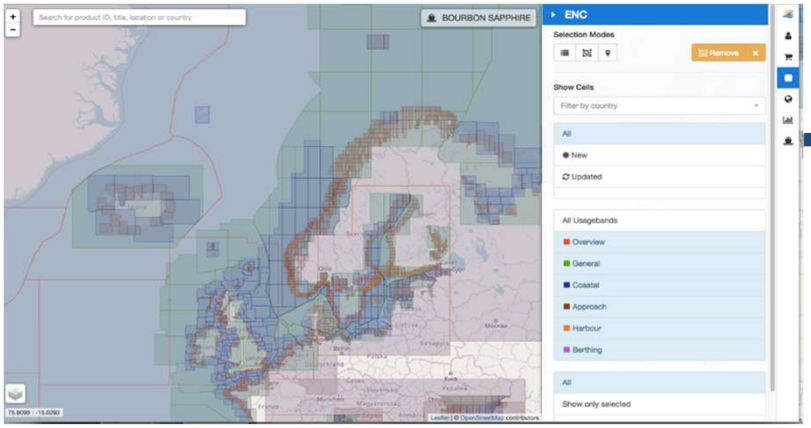
Value for several parties

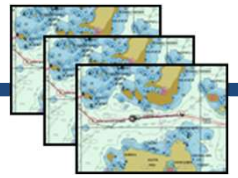
- The PRIMAR Explorer service can be used:
  - as a visualisation tool to review and assess coordination efforts by regional hydrographic commissions.
    - to ease collaboration between different national services e.g. HO, Navy, Coastal administration and Meteorological / Oceanographic institutes. It will enable them to have a common understanding of available datasets and how they appear for an area.
    - for immediate demonstration of S-100 datasets, without the use of ECDIS or any other dedicated hardware, software or data protection handling, as it will be a web based service generated by PRIMAR.
    - for marketing purposes by Distributors to promote (and sell) the new S-100 products.



PRIMAR Navy / Governmental Supplier Services

- Supply ENCs to your Navy / Governmental users.
- Access to PRIMAR global ENC and S-100 database.
- Easy operation from the PRIMAR Chart Catalogue.
  Register and add users, Create ENC portfolios, Activate area of interest, View orders/reports, View licensee status, Download ENC updates and permit files etc.

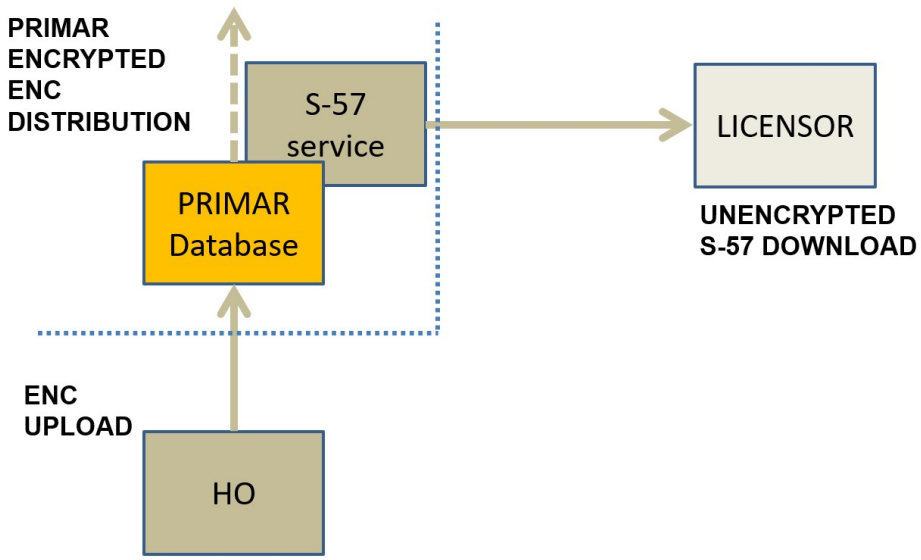




Navy users

3.4 PRIMAR S-57 non-ECDIS Service

- Service description:
  - Allows PRIMAR members to have an easy and efficient method to distribute own S-57 data to customers/3rd parties.
  - Reusing established technology for the ENC distribution operation.
  - PRIMAR operates as custodian for S-57 distribution.



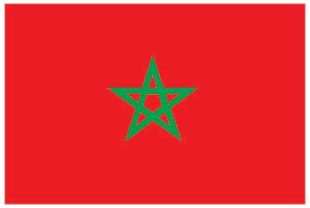
PRIMAR support to IHO

Formalized through an IHO – PRIMAR Letter of Intent

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

Other PRIMAR News

- Travel fund established for PRIMAR member nations – for participation in PRIMAR meetings.
- New PRIMAR Strategic Plan approved by PAC.
  - Updated goals, SWOT-analysis, Action Plan and Risk Analysis
- PRIMAR associated member of CIRM from 2024.
- Morocco new member of PRIMAR.



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Thank you for your attention
Questions?
www.primar.org
Operated by the Norwegian Mapping Authority, Hydrographic Service
FREEDOM TO CHOOSE