PRIMAR RENC Update to MACHC24

Hans Chr. Lauritzen – Director PRIMAR

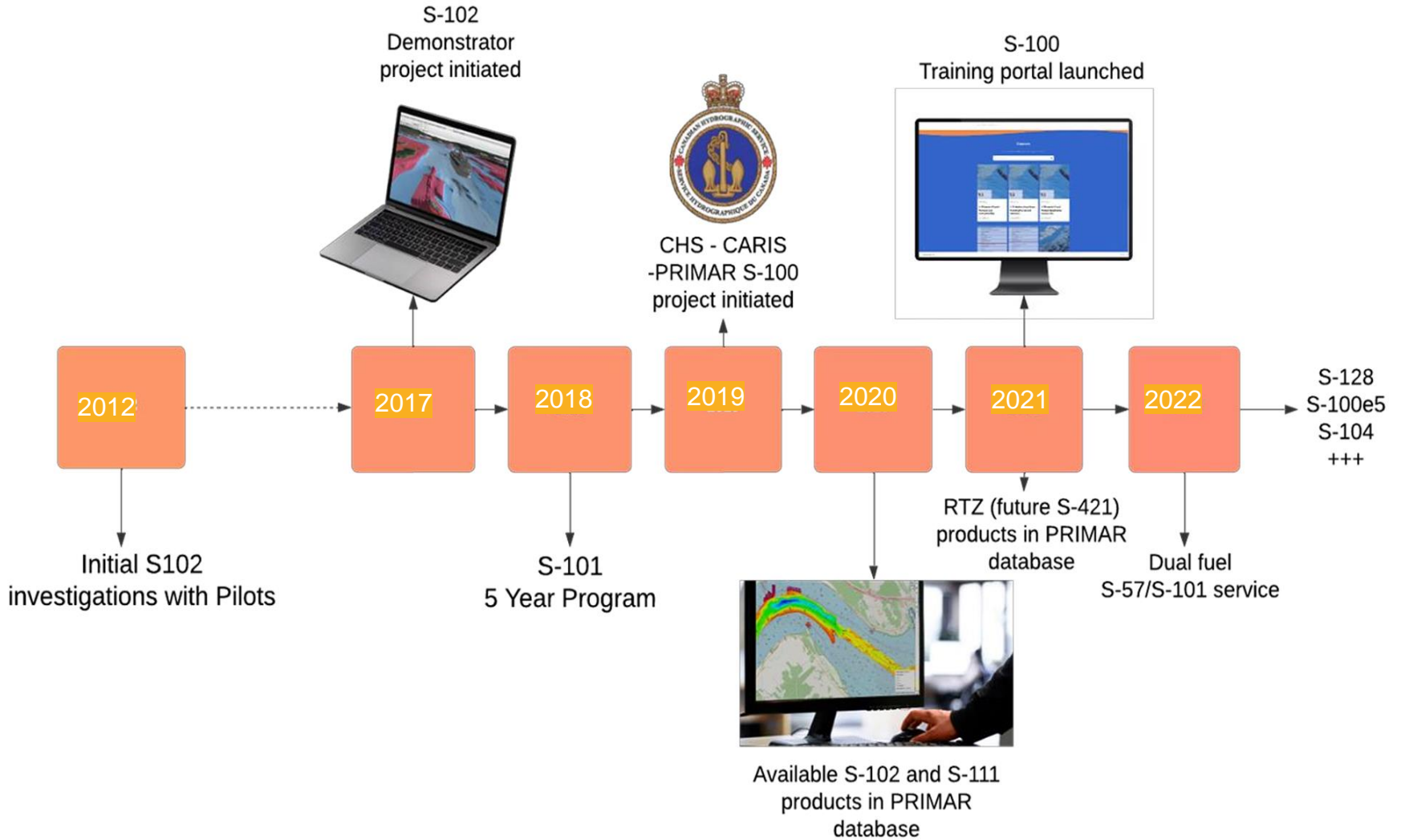**FREEDOM TO CHOOSE**

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.

ENC and S-100 Distribution through PRIMAR

HO   HO   HO   HO

Encryption (S-63 / S-100 ed.15)
Standard T & C
Revenue Management

PRIMAR
RENC

WEND principles
IHO S-58
IHO S-65

DIST.   DIST.   DIST.   DIST.
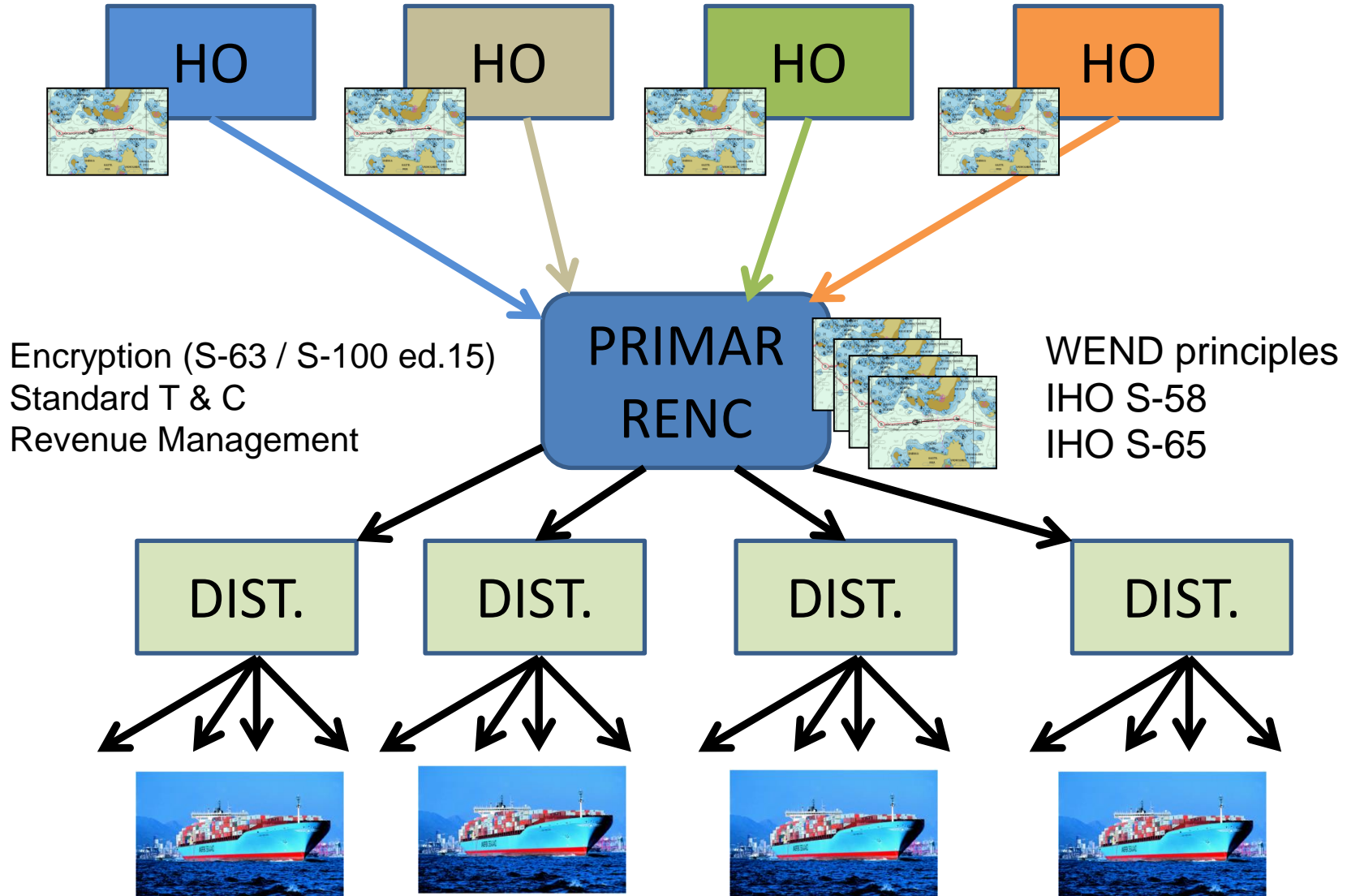
PRIMAR RENC value chain

PRIMAR®

PRIMAR RENC MEMBERS

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

PRIMAR LICENSING PARTNERS (Others)

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

ALL IC-ENC RENC DATA

> 70 different official ENC providers

PRIMAR ENC Database

> 18 000 ENCs

50 Commercial Distributors

11 Governmental Distributors

10 Navy Suppliers

Commercial users

Governmental users

Navy users

>35 000 registered end-users

PRIMAR S-100 Roadmap

S-102
Demonstrator
project initiated

CHS - CARIS
-PRIMAR S-100
project initiated

S-100
Training portal launched

| 2012 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |

S-128
S-100e5
S-104
+++

Initial S102
investigations with Pilots

S-101
5 Year Program

Available S-102 and S-111
products in PRIMAR
database

RTZ (future S-421)
products in PRIMAR
database

Dual fuel
S-57/S-101 service

In-house Developed Validation tools

- 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

Powered by PRIMAR

FREEDOM TO CHOOSE
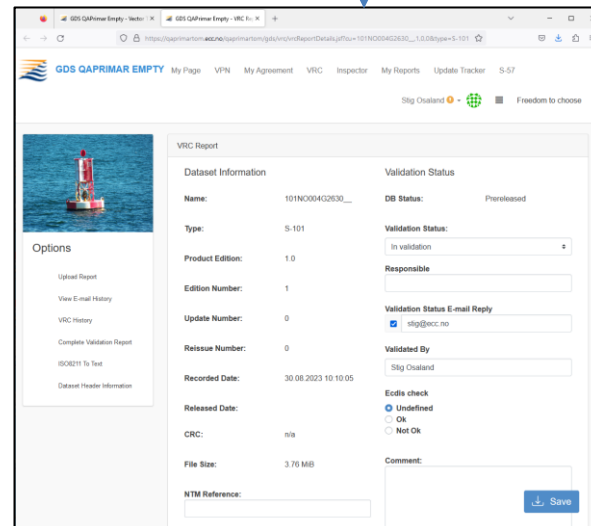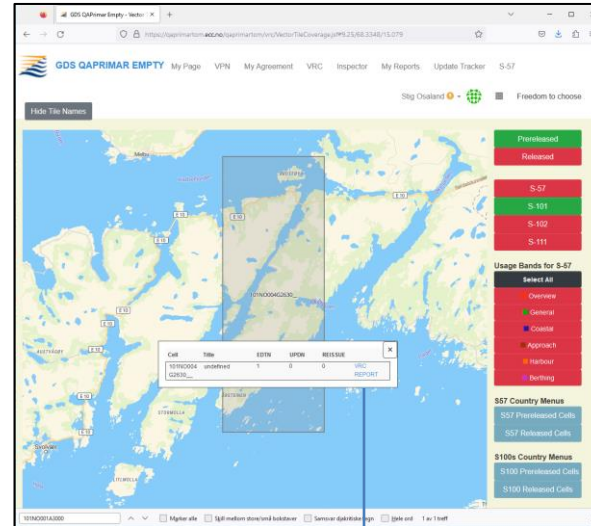
Dual Fuel Validation

Example:

- S-57 and S-101 dataset shown in same area

- Click in the area and info about both datasets are shown

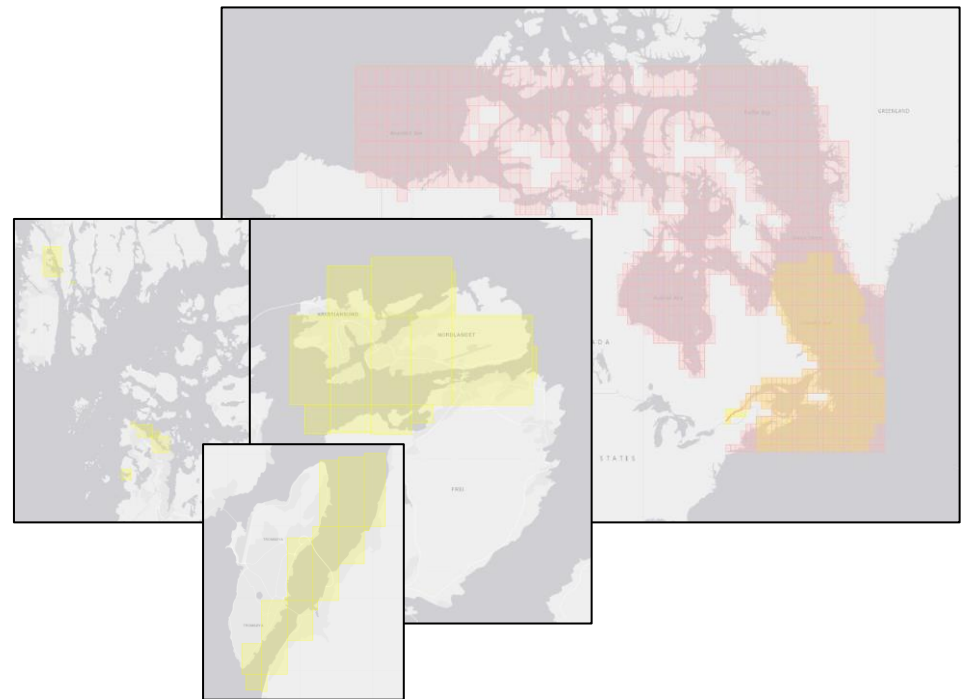# Dual Fuel Validation

S-57 ENC Validation
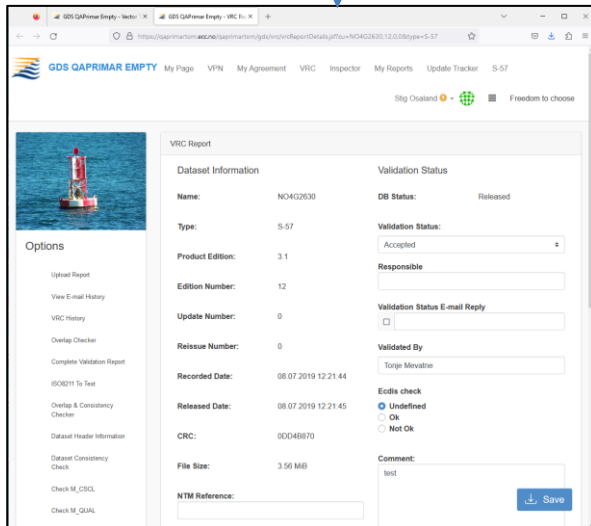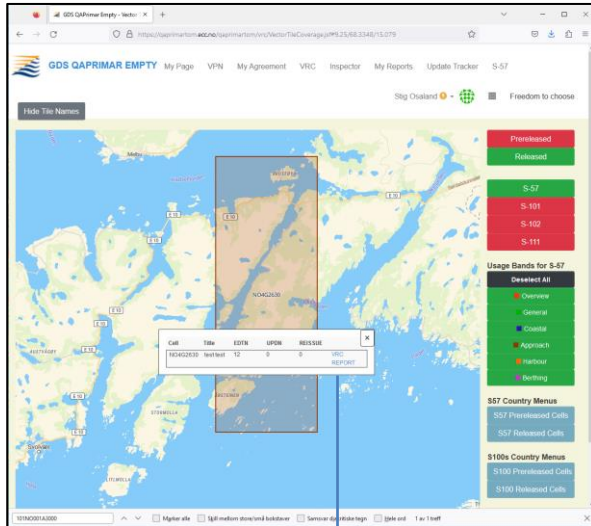
S-101 Validation

PRIMAR S-100 Service

- The PRIMAR S-100 Service was launched July 2020.

- 2650 S-102/S-111 datasets from CHS and 81 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 (Ongoing)
>> S-100 upgraded (5.0.0)
>> S-101 upgraded (1.1.0)

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

FREEDOM TO CHOOSE

Content – S-100 and S-101

Module 1 S-100
Module 1:6 S-100 & S-101 ENC Training Course
Module 1: S-100
Svein Skjaeveland

S-100 General Introduction and Data Model Information

Price	Learners
$255	190

Module 2 S-100 IHO Registry
Module 2:6 S-100 & S-101 ENC Training Course
Module 2: IHO S-100 Geospatial Information Registry
Svein Skjaeveland

An introduction to the IHO Geospatial Information Registry

Price	Learners
$55	189

Module 3 S-101 General
Module 3:6 S-100 & S-101 ENC Training Course
Module 3: S-101 General
Svein Skjaeveland

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

Price	Learners
$255	189

Module 4 S-101 Data Quality
Module 4:6 S-100 & S-101 ENC Training Course
Module 4: S-101 Data Quality
Svein Skjaeveland

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

Price	Learners
$255	189

Module 5 S-101 Conversion and Challenges
Module 5:6 S-100 & S-101 ENC Training Course
Module 5: S-101 Conversion and Challenges
Svein Skjaeveland

S-57 to S-101 Conversion Topics

Price	Learners
$255	189

Module 6: S-100 part 15 - Data Protection
Module 6:6 S-100 & S-101 ENC Training Course
Module 6: S-100 part 15 - Data Protection
Robert Sandvik

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

Price	Learners
$255	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

PRIMAR®

Module 1:5	Module 2:5	Module 3:5

Svein Skjaeveland

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	Learners
$255	210

Svein Skjaeveland

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	Learners
$255	210

Svein Skjaeveland

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

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

Price	Learners
$255	210

Module 4:5	Module 5:5	

Svein Skjaeveland

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

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

Price	Learners
$255	210

Svein Skjaeveland

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

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

Price	Learners
$255	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

Module 2:5 — Management of IHO Geospatial Information Registers / General Feature Model
S-100 Part 4 — Metadata
S-100 Part 5 — Feature Catalogue
S-100 Part 6 — Coordinate Reference Systems
S-100 Part 7 — Spatial Schema
S-100 Part 8 — Imagery and Gridded Data
S-100 Part 9 — Portrayal
S-100 Part 10 — Encoding Formats (ISO8211, GML, HDF5)
S-100 Part 11 — Product Specifications
S-100 Part 12 — Maintenance
S-100 Part 13 — Scripting
S-100 Part 14 — Online Communication Exc...
S-100 Part 15 — Encryption and...
S-100 Part 16 —

Svein Skjaeveland

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	Learners
$255	1

Module 1:5 — Management of IHO Geospatial Information Registers / General Feature Model
S-100 Part 4 — Metadata
S-100 Part 5 — Feature Catalogue
S-100 Part 6 — Coordinate Reference Systems
S-100 Part 7 — Spatial Schema
S-100 Part 8 — Imagery and Gridded Data
S-100 Part 9 — Portrayal
S-100 Part 10 — Encoding Formats (ISO8211, GML, HDF5)
S-100 Part 11 — Product Specifications
S-100 Part 12 — Maintenance
S-100 Part 13 — Scripting
S-100 Part 14 — Online Communication Exc...
S-100 Part 15 — Encryption and...
S-100 Part 16 —

Svein Skjaeveland

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	Learners
$255	1

Module 3:5

Svein Skjaeveland

S-111 Module 3 Part I Product Specification Introduction

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

S-100 Gridded Data

Price	Learners
$255	1

Module 4:5

Svein Skjaeveland

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	Learners
$255	1

Module 5:5

Svein Skjaeveland

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	Learners
$255	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.
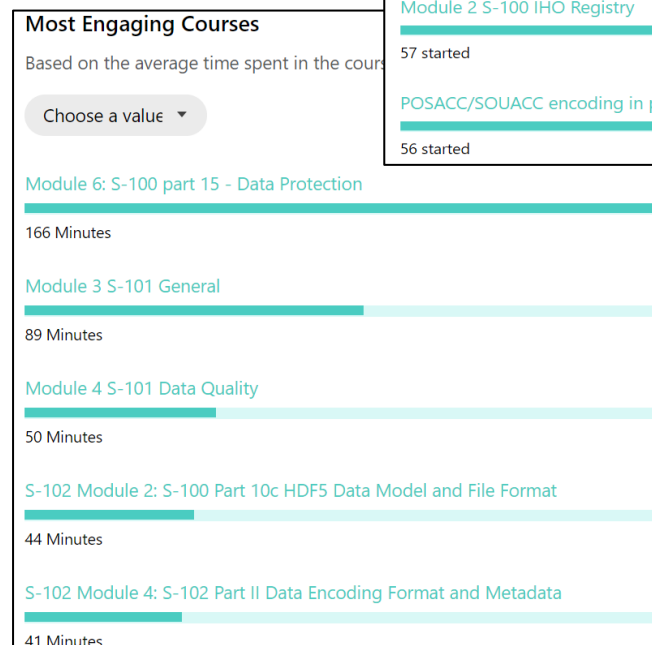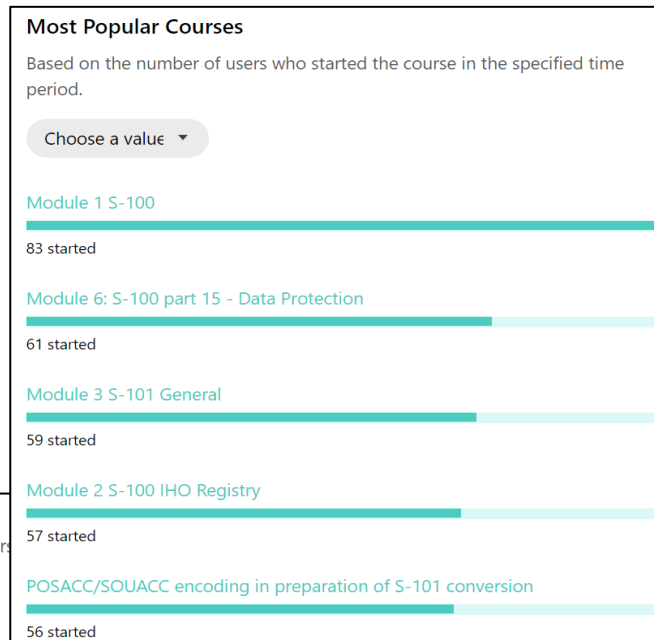
See below for more details of all included courses!

Buy now ~~$1275~~ $1049

Status

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

- Content details
  - 17 training modules
  - ~20 hours video
  - ~265 Quiz questions
  - ~50 practical exercises

- High usage rate
  - 409 Students
  - 313 certificates

Most Popular Courses

Based on the number of users who started the course in the specified time period.

Choose a value ▾

Module 1 S-100
83 started

Module 6: S-100 part 15 - Data Protection
61 started

Module 3 S-101 General
59 started

Module 2 S-100 IHO Registry
57 started

POSACC/SOUACC encoding in preparation of S-101 conversion
56 started

Most Engaging Courses

Based on the average time spent in the cours

Choose a value ▾

Module 6: S-100 part 15 - Data Protection
166 Minutes

Module 3 S-101 General
89 Minutes

Module 4 S-101 Data Quality
50 Minutes

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

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

PRIMAR®

FREEDOM TO CHOOSE

Certificate

Certificate of Completion

Module 1 S-100

awarded to

Ola Nordmann

For successful completion of the training program in the PRIMAR S-100 course series

Hans Chr. Lauritzen

21/06/2021

Date

Certificate ID: 60d086db56bc4e4b971d7765

**PRIMAR Navy / Governmental Supplier Services**

- Supply ENCs to your Navy / Governmental users.

- Access to PRIMAR global ENC 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.
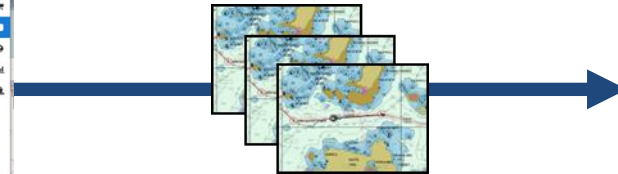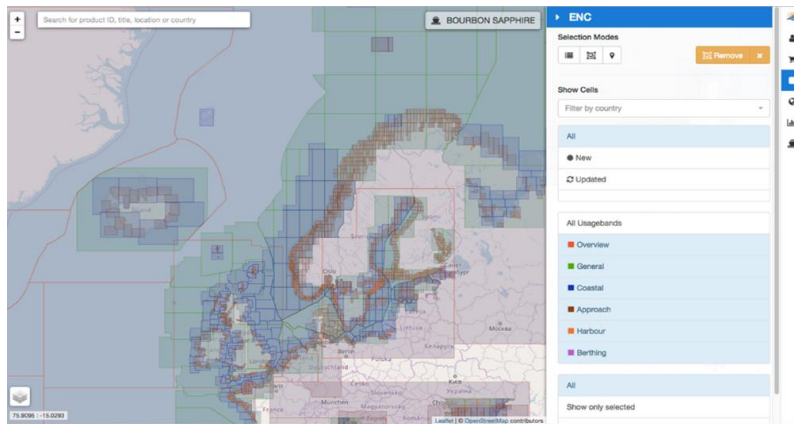
Navy users

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.
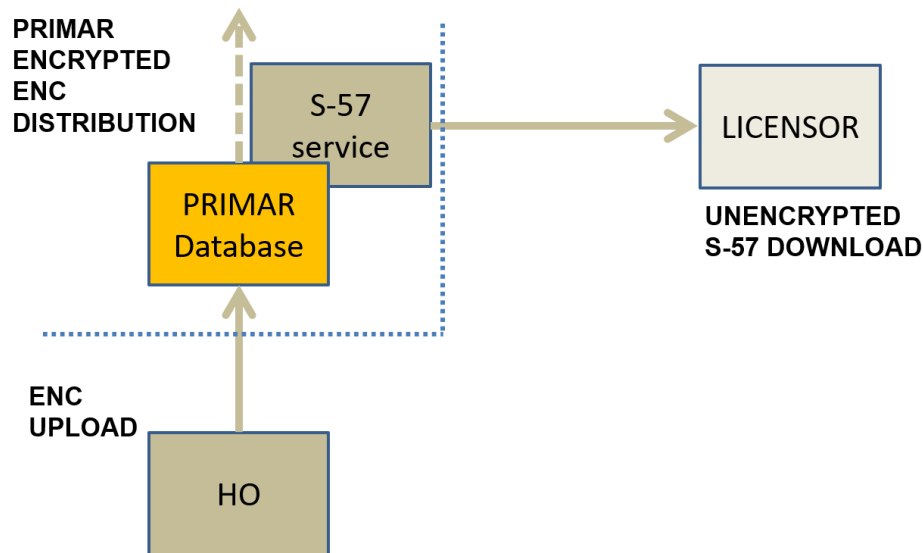
PRIMAR support to IHO

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.

Thank you for your attention

Questions?

www.primar.org

Operated by the Norwegian Mapping Authority, Hydrographic Service

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