PRIMAR RENC Presentation SAIHC20 - Kisumu

Hans Chr. Lauritzen – Director PRIMAR

FREEDOM TO CHOOSE
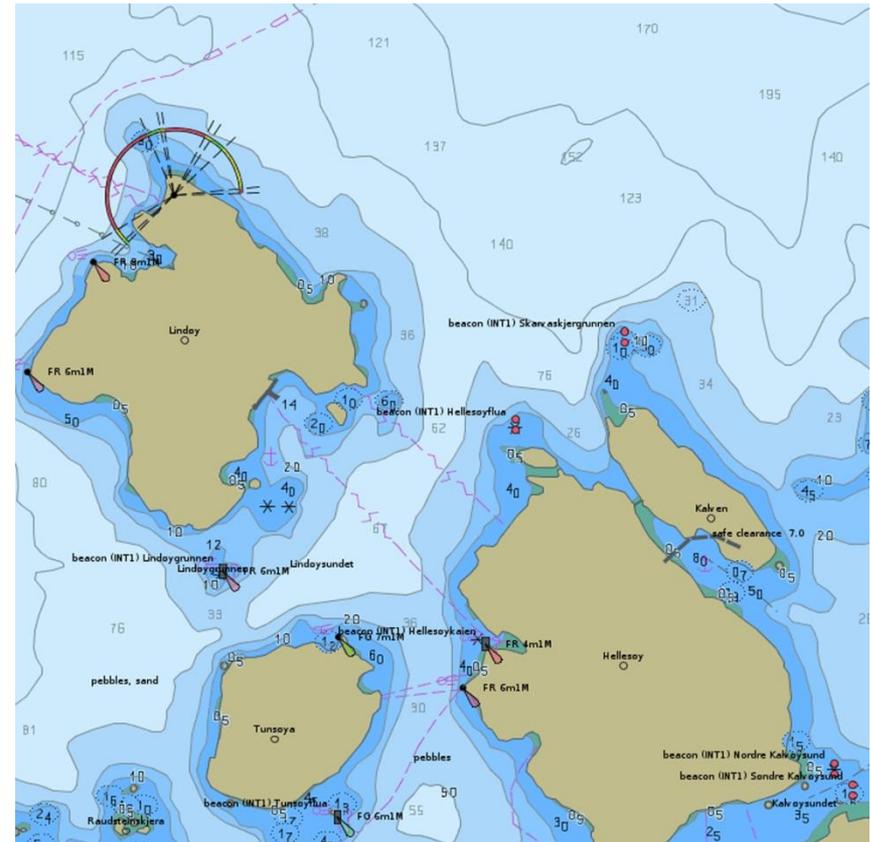
What is PRIMAR?

- 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).
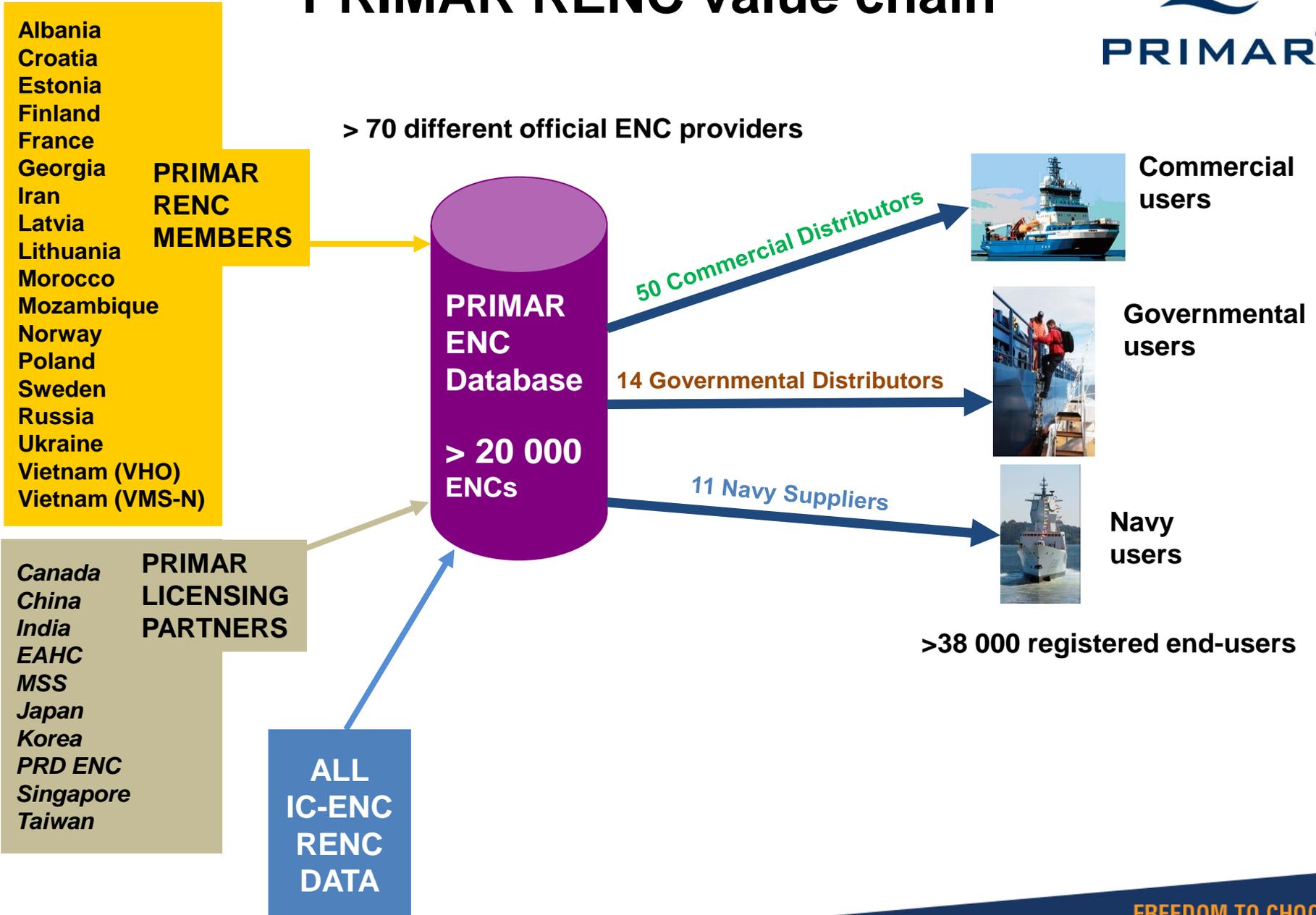
- Located in Stavanger, Norway

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:
  - 18 members
  - ENCs from more than 70 different nations available in the PRIMAR ENC service.

PRIMAR RENC value chain

PRIMAR®

PRIMAR RENC MEMBERS

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

PRIMAR LICENSING PARTNERS

Canada
China
India
EAHC
MSS
Japan
Korea
PRD ENC
Singapore
Taiwan

ALL IC-ENC RENC DATA

> 70 different official ENC providers

PRIMAR ENC Database

> 20 000 ENCs

50 Commercial Distributors

14 Governmental Distributors

11 Navy Suppliers

Commercial users

Governmental users

Navy users

>38 000 registered end-users

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.

PRIMAR Strategic Plan

- All PRIMAR focus and activities are based on the PRIMAR Strategic Plan.

- Updated PRIMAR Strategic Plan presented and approved at PAC 30.

- The Strategic Plan has a strong focus on S-100 implementation.

- PRIMAR Strategic Goal # 1:

"PRIMAR provides all S-100 products required for navigation."

PRIMAR → 2030

STRATEGIC PLAN

Version 1.1, April 2023
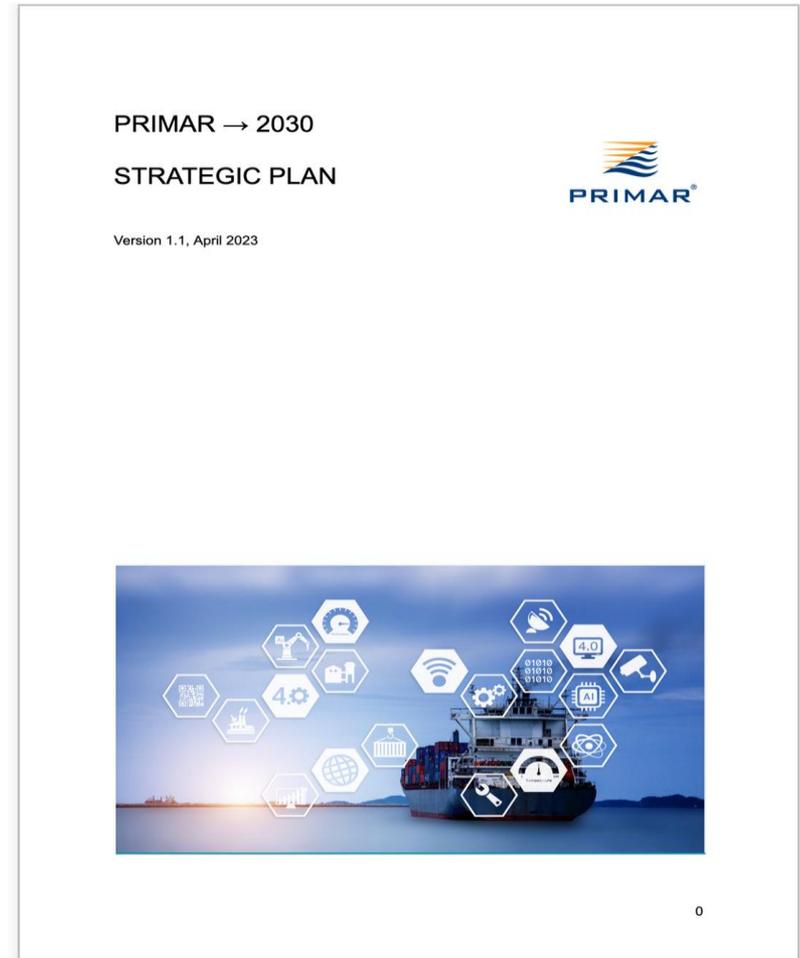
PRIMAR S-100 Strategy

In its role as a RENC, PRIMAR will work towards the development of tools and services to facilitate efficient collection, validation and distribution of today's S-57 ENC product and all the S-100 products that are considered essential and identified by IHO as key for safe navigation.

The following S-100 products are prioritized for implementation in PRIMAR in 2023 → 2030:

- S-101 Electronic Navigational Chart
- S-102 Bathymetric Surface
- S-104 Water Level
- S-111 Surface Currents
- S-124 Navigational Warnings
- S-128 Catalogue of Nautical Products

PRIMAR S-100 Activities

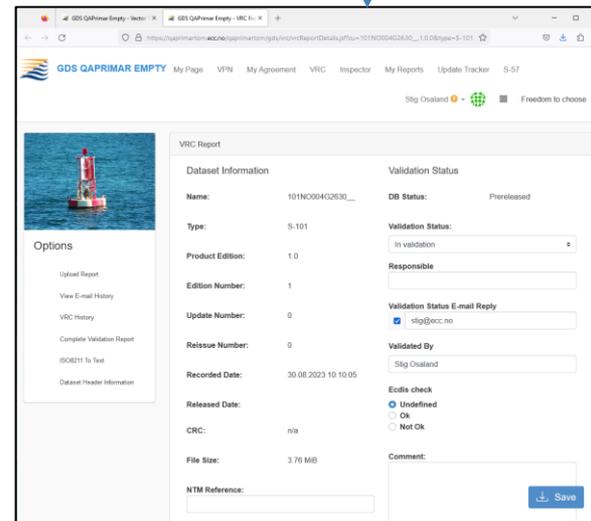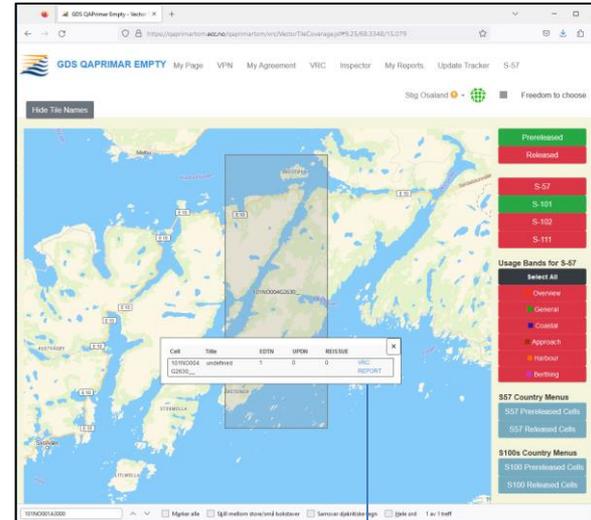| ID	Activity
1.1	Align with and support IHO in their strategy and activities to promote, develop and implement S-100 in PRIMAR services.
1.2	Make test data and services easily available to encourage S-100 uptake and compliance among system and application developers.
1.3	Provide S-100 training and exchange of experiences to encourage data production. *(Including conversion support and S-100 training for member nations)*
1.4	Support OEM in implementing functionality for S-100, data protection and interfaces with PRIMAR services.
1.5	Demonstrate value of PRIMAR products, services and use to non-navigation use where relevant.

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

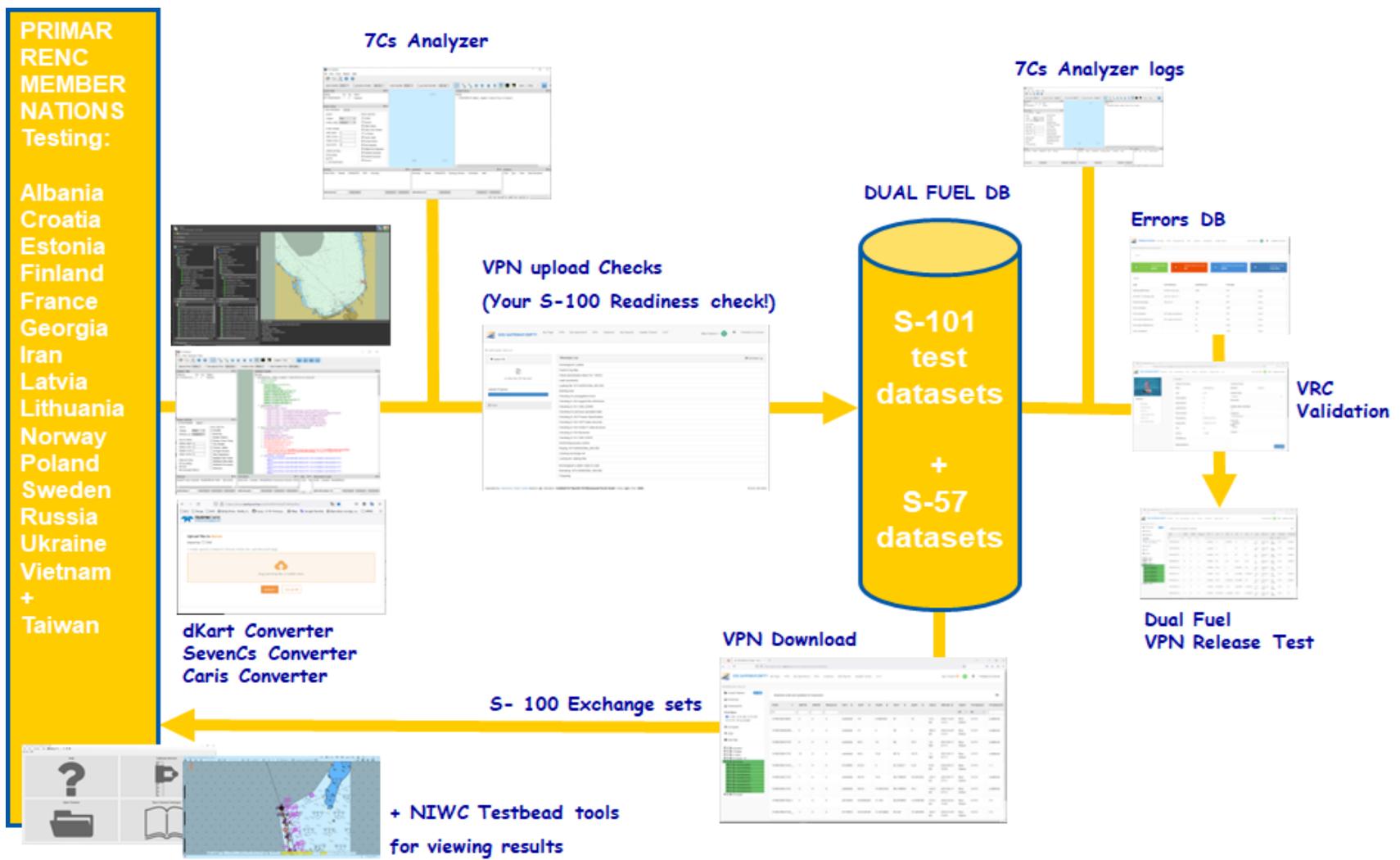### S-57 ENC Validation
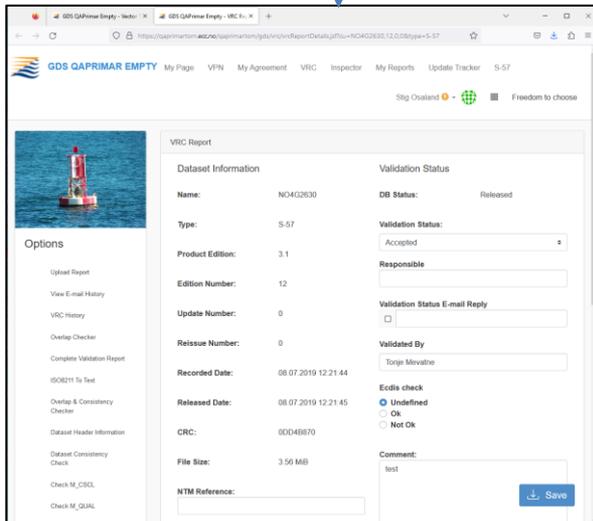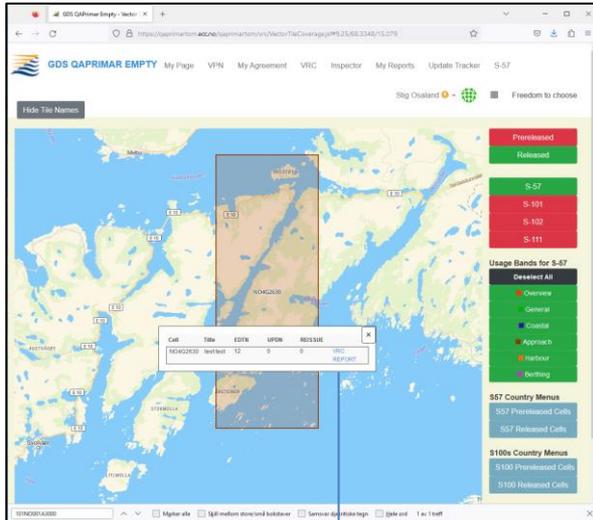
S-101 Validation

PRIMAR S-101 Conversion Testing/Testbed

PRIMAR RENC MEMBER NATIONS Testing:

Albania
Croatia
Estonia
Finland
France
Georgia
Iran
Latvia
Lithuania
Norway
Poland
Sweden
Russia
Ukraine
Vietnam
+
Taiwan

7Cs Analyzer

7Cs Analyzer logs

VPN upload Checks

(Your S-100 Readiness check!)

DUAL FUEL DB

Errors DB

S-101 test datasets

+

S-57 datasets

VRC Validation

dKart Converter
SevenCs Converter
Caris Converter

S- 100 Exchange sets

VPN Download

Dual Fuel
VPN Release Test

+ NIWC Testbead tools
for viewing results

PRIMAR S-100 Service

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

- 356 S-102 and 2735 S-111 datasets from CHS and 92 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
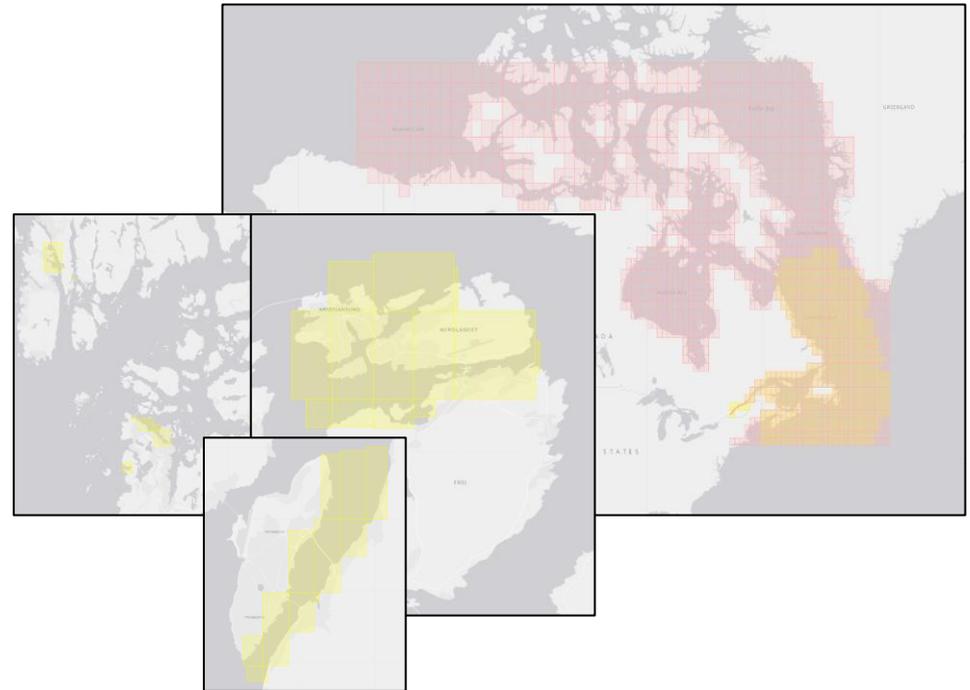
S-100 Data supply - Production

Canada S-102/S-111 &
S-104 harvested from
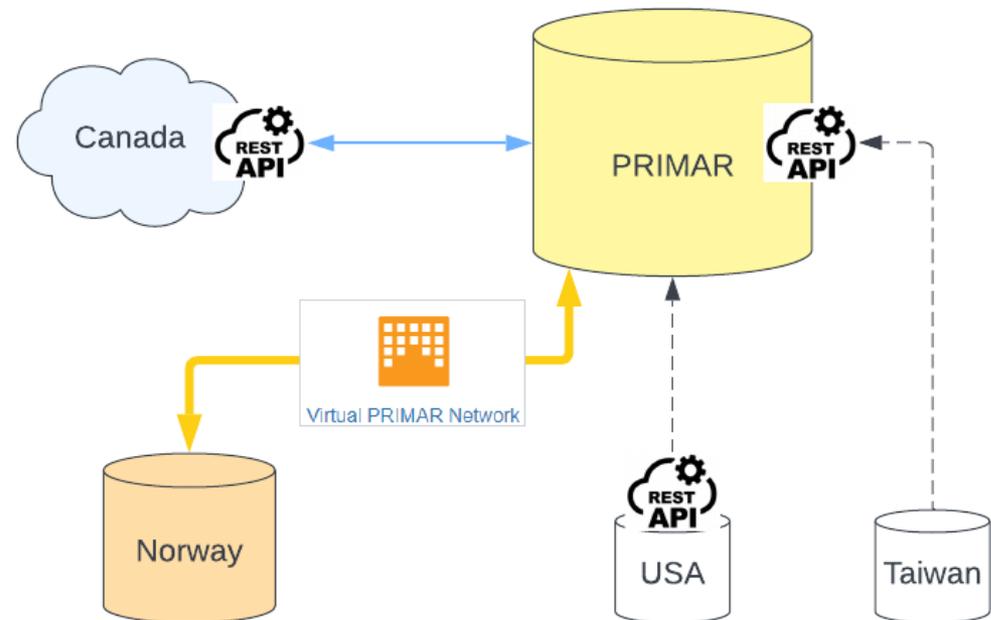the Teledyne CARIS
Cloud Service via a
REST API integration

Norway use the PRIMAR
VPN Service for Upload
of S-102.
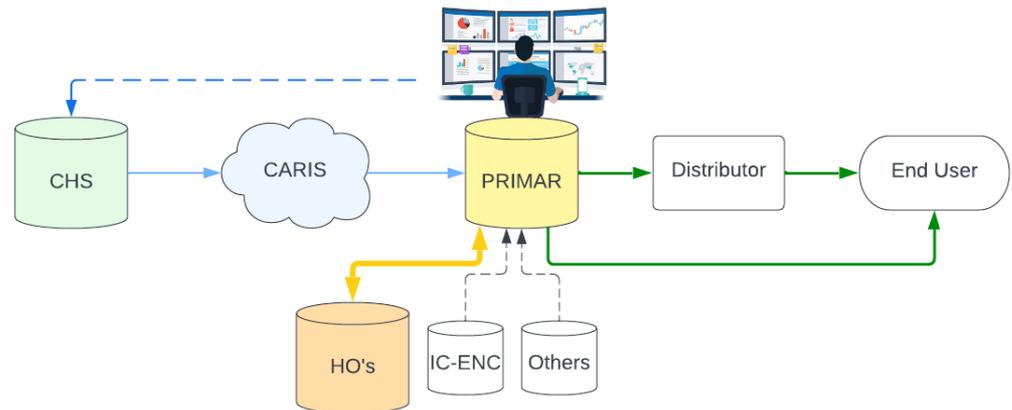
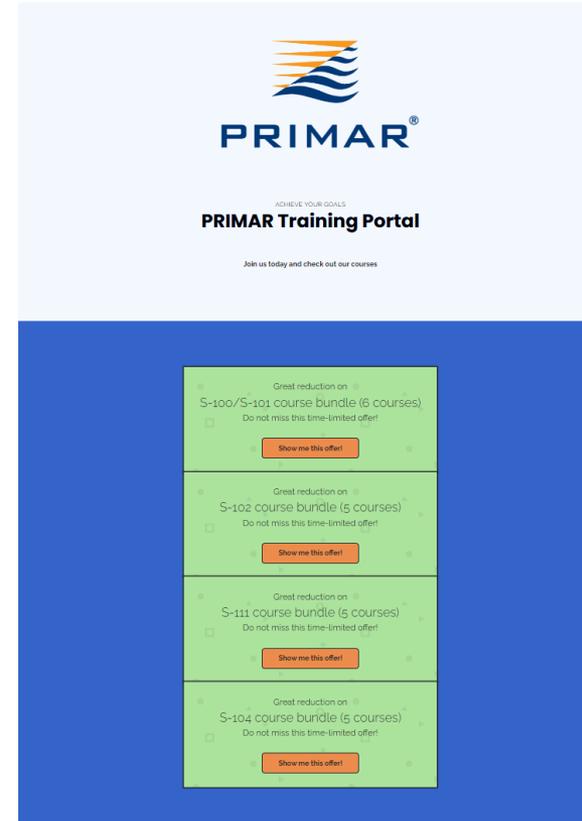# S-100 Data supply – Test Environment

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.

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

Module 1 S-100

S-100 General Introduction and Data Model Information

Price	Learners
$255	190

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

Module 2 S-100 IHO Registry

An introduction to the IHO Geospatial Information Registry

Price	Learners
$55	189

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

Module 3 S-101 General

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

Price	Learners
$255	189

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

Module 4 S-101 Data Quality

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

Price	Learners
$255	189

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

Module 5 S-101 Conversion and Challenges

S-57 to S-101 Conversion Topics

Price	Learners
$255	189

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

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	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

Module 1:5
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

Module 2:5
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

Module 3:5
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
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

Module 5:5
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

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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	Learners
$255	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	Learners
$255	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	Learners
$255	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	Learners
$255	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	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

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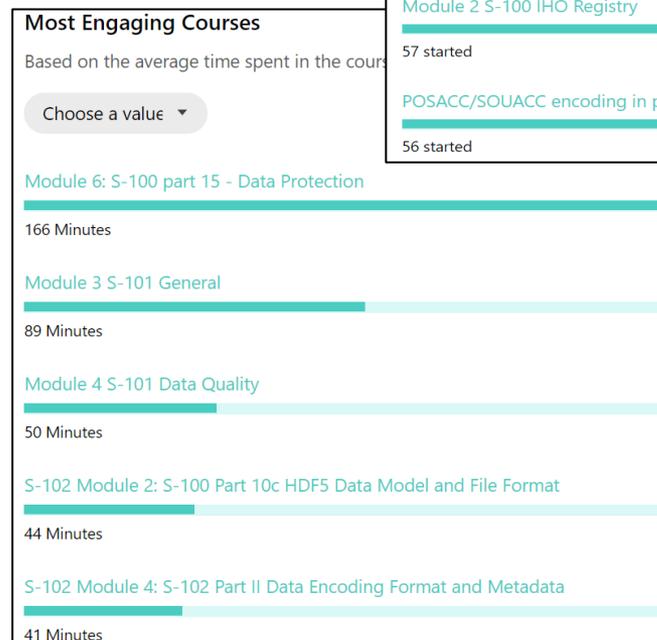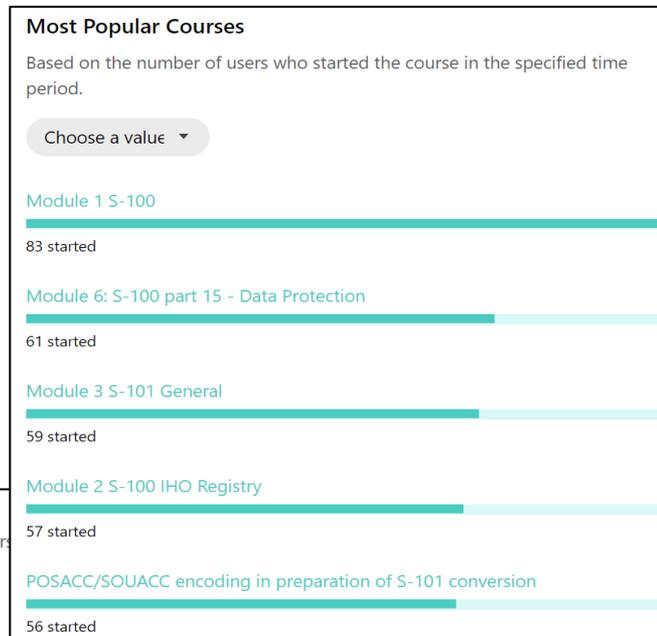# Content – S-104

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

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 cour...

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®

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
    - S-100 Explorer

PRIMAR S-100 Explorer Project
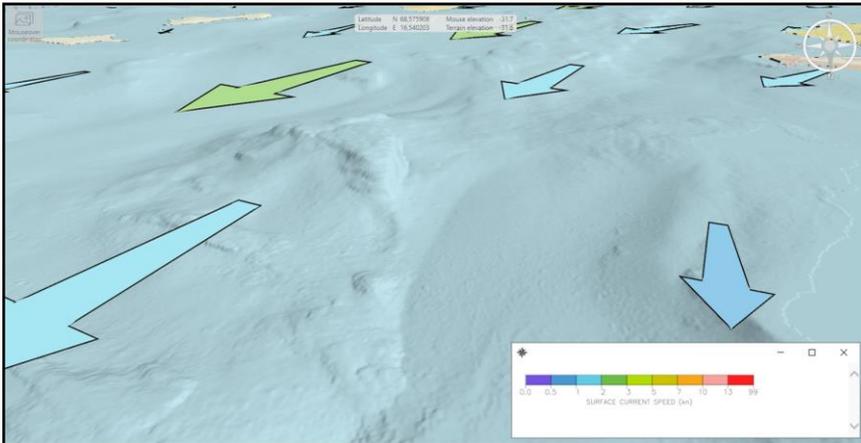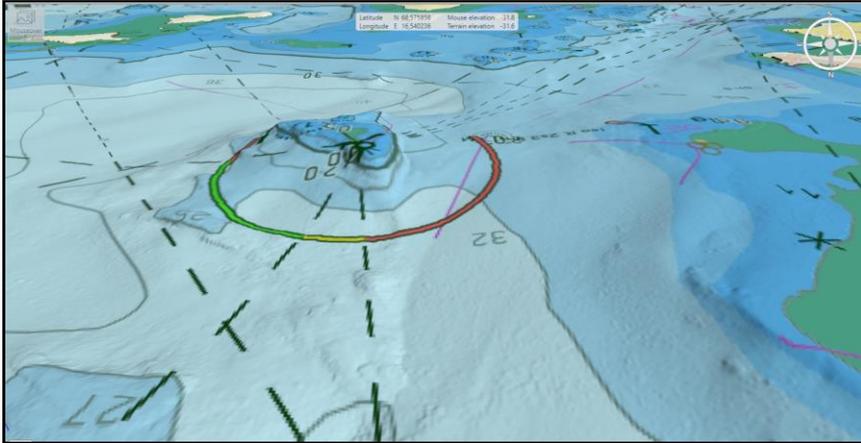
- Provide a Web based prototype of the S-100 Explorer.

- 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.

PRIMAR Nautical Publication Service

Products available in the service:

- Lithuania (List of Lights, Notice to Mariners, Shipping Regulations)

- Estonia (Notice to Mariners, Sailing Directions, List of Lights

- Norway (Notice to Mariners)

- Finland (Notice to Mariners, Sailing Directions)

- USA (NOAA Coast Pilot)

- Georgia (Sailing Directions)

In the loop:

- NGA (Worldwide coverage)

- NTOU (Sailing Directions Taiwan)

- Poland (LoL, NtM, Ports Guide)

Interest/testing the service:

- France

- Sweden

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.
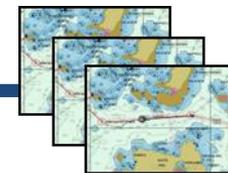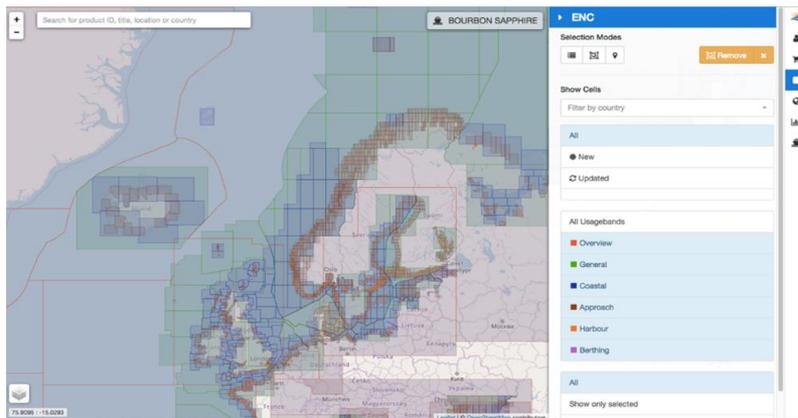
Navy users

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

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PRIMAR®