



# **PRIMAR report – 19th MBSHC**

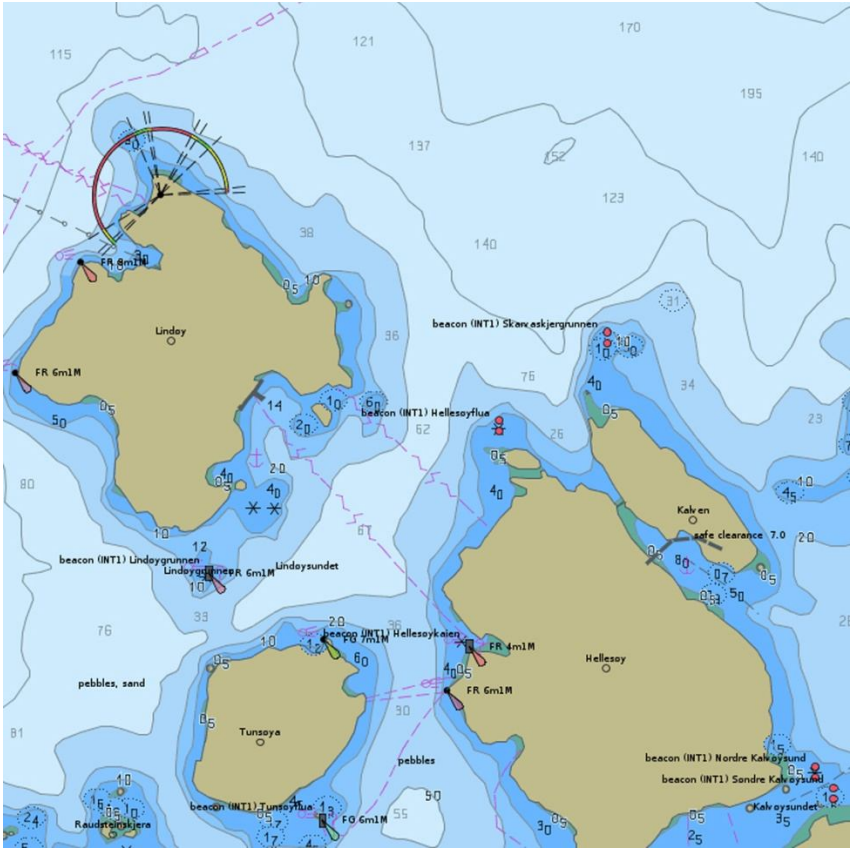
**Hans Christoffer Lauritzen, Director PRIMAR**

Operated by the Norwegian Hydrographic Service

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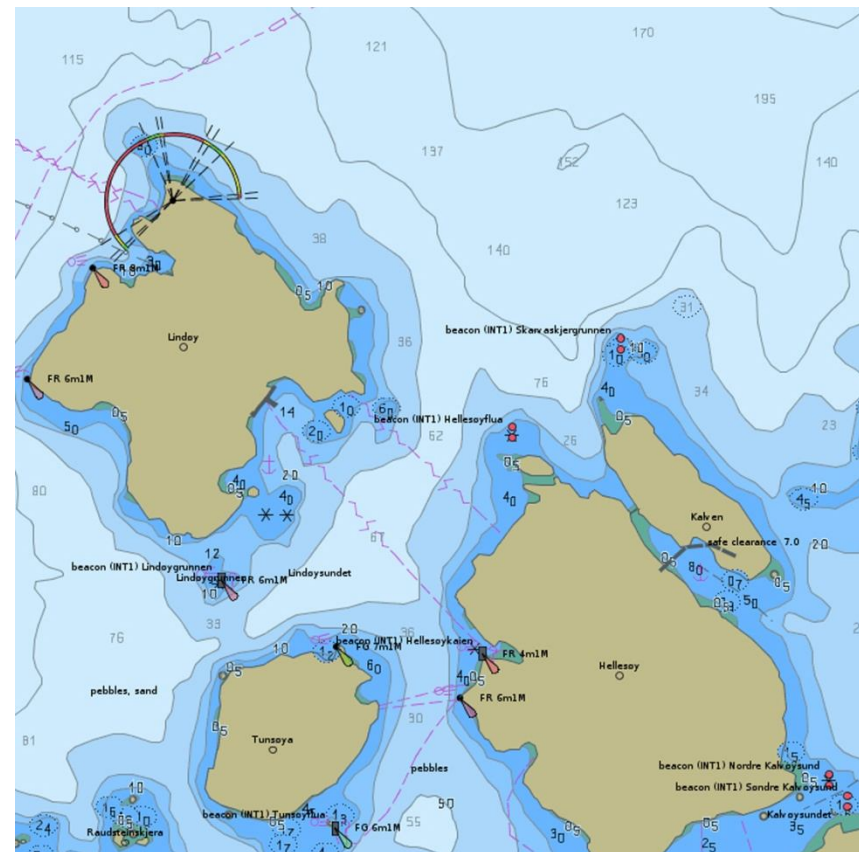
# PRIMAR – Organisation

- The world's first Regional ENC Coordinating Centre (RENC)
- Established in 1999. Officially opened by His Majesty King Harald V of Norway.
- Operated on a non-profit basis by the **Norwegian Hydrographic Service** in close cooperation with **Electronic Chart Centre (ECC)**.



## PRIMAR – Organisation II

- Provides a consistent and reliable electronic navigational chart (ENC) service world-wide.
- Fully compliant with IHO guidelines, principles and standards.
- PRIMAR RENC:
  - 16 member nations
  - ENCs from more than 50 different nations available in the PRIMAR ENC service.



## PRIMAR's Vision

***IN ORDER TO ENHANCE SAFETY AT SEA AND PROTECT THE MARITIME ENVIRONMENT, PRIMAR'S VISION IS TO BE THE MOST EFFICIENT MODEL FOR THE PROVISION OF ENC SERVICES AND MARITIME GEOSPATIAL DATA WORLDWIDE.***

## **Governing Body and Sub-Groups**

### **PRIMAR Advisory Committee (PAC)**

**Chairman: Stanislaw Pietrzak, Poland**

**Vice chair: Rainer Mustaniemi, Finland**

PRIMAR  
Strategic  
Working  
Group  
(PSWG)

PRIMAR  
Financial  
Working  
Group  
(PFWG)

PRIMAR  
Marketing  
Working  
Group  
(PMWG)

PRIMAR  
Technical  
Working  
Group  
(PTWG)

## **PRIMAR membership and coverage update**

- Distribution agreement with Malaysia in April 2014.
- Ukraine new PRIMAR member in August 2014.
- Distribution agreement with Hong Kong in July 2014.
- Distribution agreement with Indonesia in January 2015.
- Distribution agreement for Pearl River Delta ENC's (CN, C2, C3) in April 2015.
- Distribution agreement for Chinese data (C1) in May 2015.
- PRIMAR is currently in the final stage of concluding agreements with several nations.
- Total number of ENC's in PRIMAR database: 13 878

## PRIMAR QC and validation

- Performed ENC QC and validation since 1999
- Performed ENC QC on >55.000 ENCs and new editions, 135.000 update files and 62 million ENC quality issues from more than 50 ENC providers.
- PRIMAR ENC QC best practice procedures based upon:
  - More than 62.300.000 recorded ENC quality issues (VRC)
  - More than 1500 different error types identified in S57 data
  - In-house developed graphical and unique ENC QC functionality available online to PRIMAR member states
  - In-house developed online functionality for automatic testing and identification of majority of above ENC QC error situations
- Active participation in relevant IHO Working Groups (S57, S58, S63, S10x)



## 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
  - ISO8211 to text converts EN/ER file to readable format
- S57 Advisor (Errors database) containing error/warnings discovered from validation tools





## **PRIMAR QC and validation**

- PRIMAR use the following internal/external tools:
  - Virtual Primar Network – VPN (ECC)
  - Validation Report Checker – VRC (ECC)
  - dKart Inspector (Jeppesen)
  - ENC Analyzer (7Cs)
  - S-57 Advisor (ECC)
  - Overlap checker (ECC)
  - ISO8211 to Text (ECC)
  - ECDIS Furuno and Transas + (Maris & Adveto)

## Virtual PRIMAR Network – VPN

- Used to transfer ENC's from HOs to PRIMAR.
- 24/7 access
- All data go through "Upload Checks" before they are stored in DB.
- VPN is used to release data and produce weekly exchange set.
- In VPN the HO has the full control of their own ENC data.
- Upload and release of the ENC data are done by the HO.



# The Need for Consistent Validation

PRIMAR training for member nations



Harmonised and consistent encoding of ENC data by producers. Removal of issues that compromise navigational safety

Inconsistencies in ENC data are apparent when displayed in an ECDIS/ECS.

ENCs validated for adherence to standards, accuracy and consistency.

PRIMAR offers ENC Validation Workshop. Introduction to PRIMAR best practices



**PRIMAR**<sup>®</sup>

# PRIMAR Validation Course Description

## Core

Using PRIMAR best practice and online tools to validate and ensure consistent encoding of ENC's

## Experience

Over 15 years of experience in ENC quality assurance services.

## Expertise

Wealth of expertise leading to development of in-house tools.

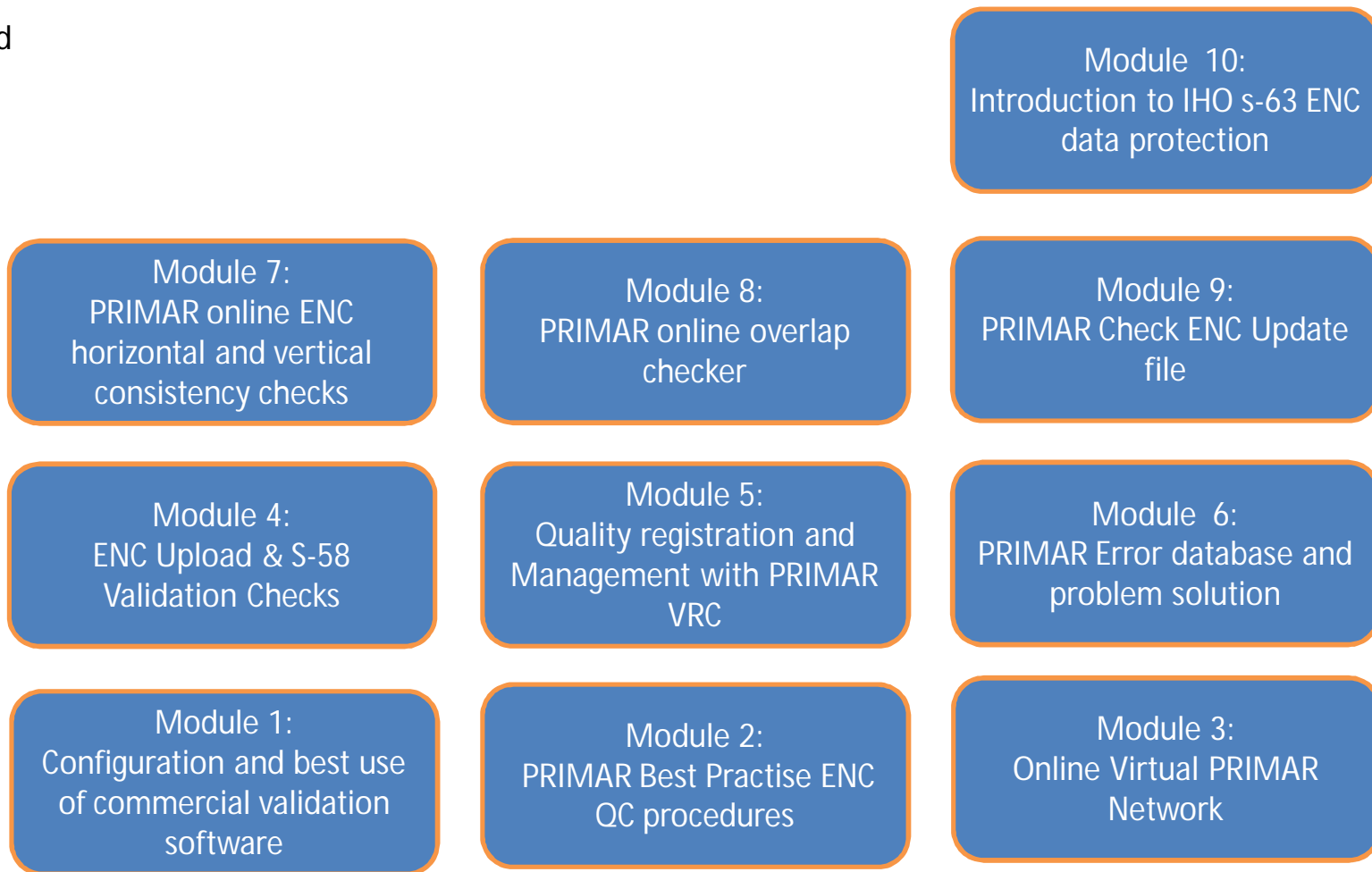
## Passion

Hands-on workshop. Driven by excellence and the safety needs of the mariner.

# PRIMAR Validation Course Modules



Increased  
safety



\* Course hand-outs provided

Increased knowledge

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## **PRIMAR activities 2014 - 2015**

- PRIMAR Distributor Seminar in Athens June 2014.
- Present at several RHC meetings.
- Joint RENC stand at EIHC 5 in Monaco.
- Technical workshops / training with member nations.
- Several visits to Hydrographic Offices.
- Visits to industry fares and distributors.
- PRIMAR Technical Experts Working Group meeting in February 2015 - 9 member nations participating.

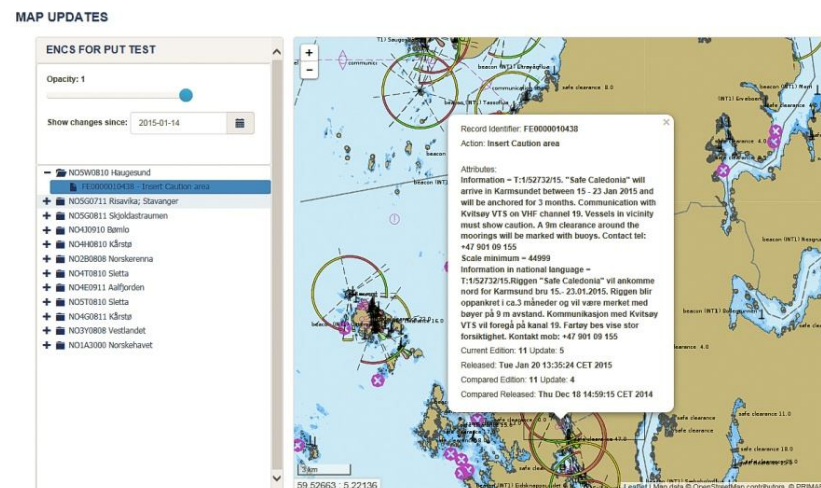
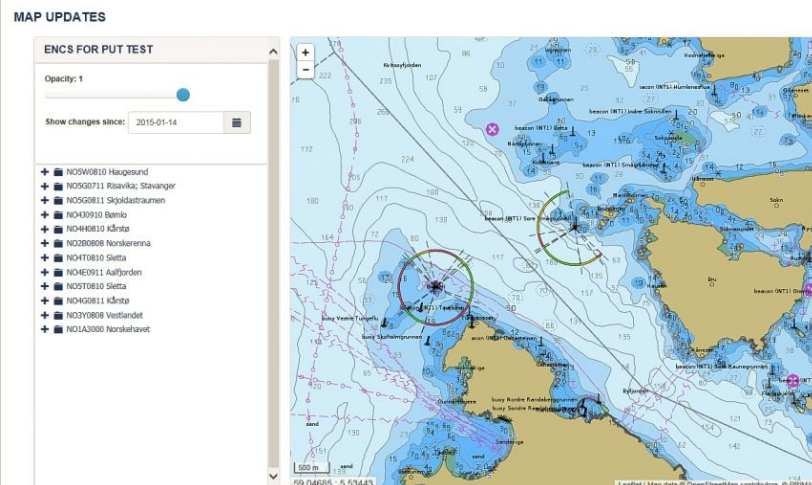
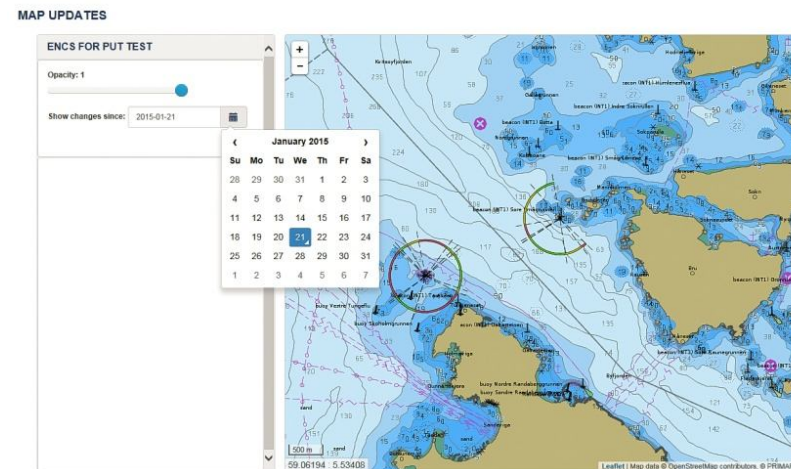
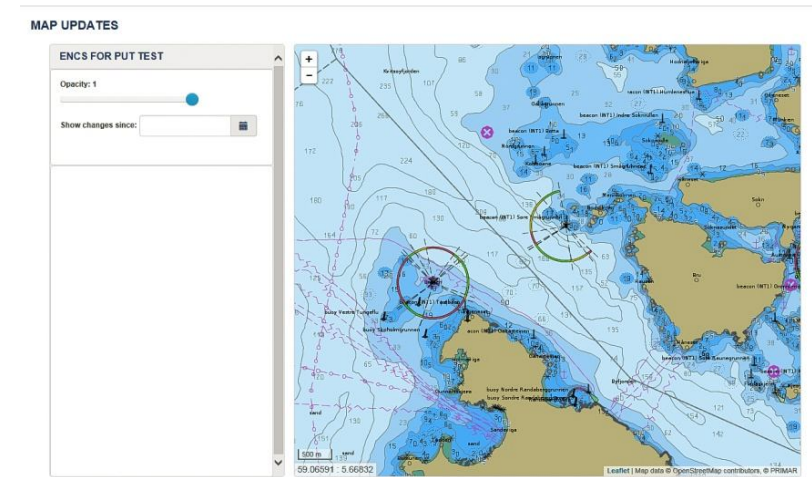


## PRIMAR updates

- Improved Web Chart Service launched June 2014
- Implementation of IHO S-58 ed. 5.0.0 validation checks ongoing
- PRIMAR Update Tracker launched January 2015
- S-102 project with Norwegian pilots and OEMs.
- RENC Overlap and Coverage checker offered to IHB, WEND and RHCs.

# PRIMAR Update Tracker (PUT)

Visualization and track of changes made to an ENC.



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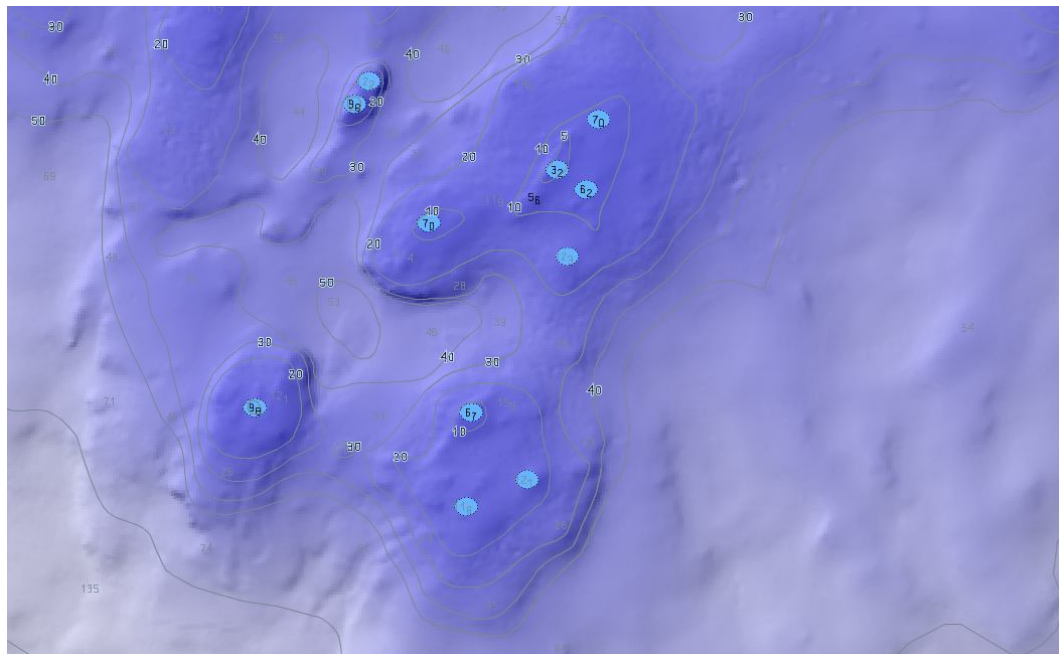
## PRIMAR / NHS S-102 project



- Expanding the PRIMAR ENC service with distribution, sales and customer support for bathymetric data on the S-102 format.
- Protecting the S-102 service with the new edition of IHO S-63 for access control and authentication.
- Allowing a Hydrographic Office to distribute its S-102 data to governmental and commercial end-users.
- S-102 and ENCs in support of E-navigation.
- Cooperation with HOs, system manufacturers and end-users.
- Provide feed-back on standard to TSMAD
- Further developments: In-house viewer and validation tool.

# S-102 Product

- **Main purpose:** To support safe navigation as a supplementary aid.
- **Product:** High resolution gridded bathymetry – bathymetric model.
- **Usage:** Navigational and planning purposes  
(safe depth, anchorage areas, Under Keel Clearance)
- **Innovative:** Allows ECDIS to calculate contour intervals on the fly.





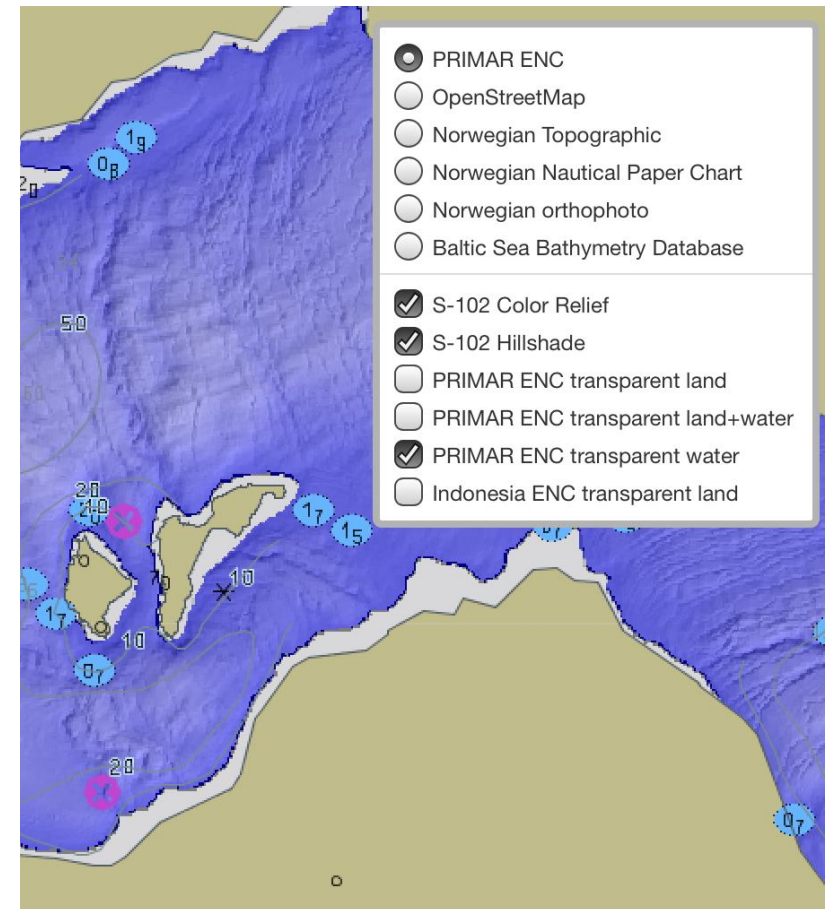
## S-102\* project with Norwegian and Swedish Pilots

### Goal:

- ✓ Test production of S-102 data in NHS.
- ✓ Test and identify distribution solutions for S-102.
- ✓ Provide feedback to system manufacturers from end-users.
- ✓ Test the implementation of S-102 in ECDIS/ECS systems.
- ✓ Provide feedback on the standard to IHO working groups.

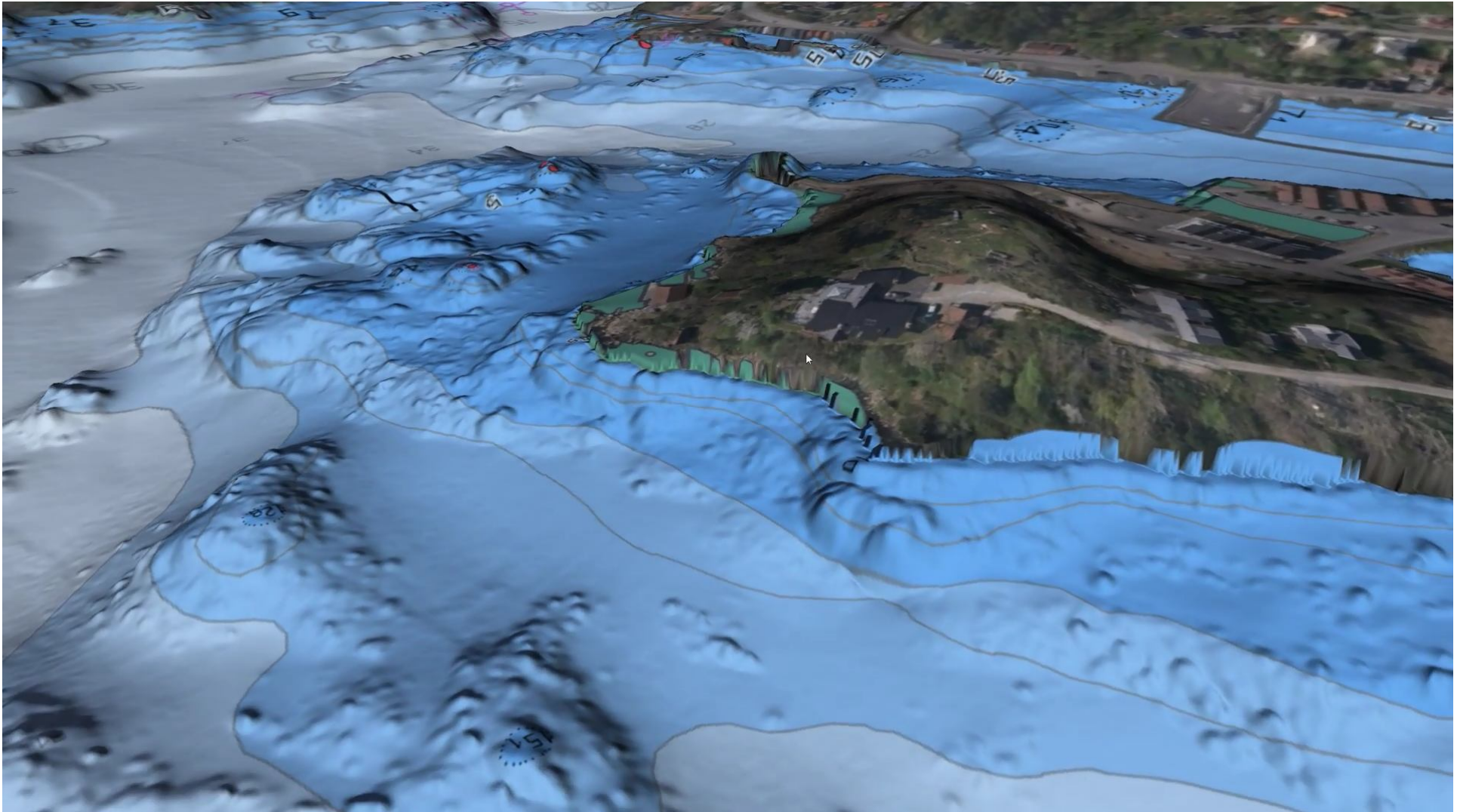
### Status:

- ✓ Test pilots are identified.
- ✓ Areas of interest is identified by the Norwegian test Pilots.
- ✓ Norwegian Hydrographic Service have started test production of S-102 data.
- ✓ Initial input provided to IHO working groups (TSMAD)
- ✓ Meetings are being arranged between the Pilots and system manufacturers



\*S-102 : IHO Bathymetric Surface Product Specification

# NHS S-102 data - 3D view





Thank you for your attention!

Operated by the Norwegian Hydrographic Service

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