



PRIMAR 2016 ANNUAL REPORT

PRIMAR is a multi-lateral and government based organization. As a regional ENC coordinating centre (RENC), it's primary role is to ensure a harmonized quality level of official electronic navigational charts (ENCs) from many producer nations (i.e. national hydrographic offices) and making this information available through a network of distributors to international shipping on a 24/7 basis.



OPERATION OF PRIMAR

The Norwegian Mapping Authority, Hydrographic Service (NHS) operates PRIMAR on a non-profit cost recovery basis. The NHS uses a Norwegian state owned company, Electronic Chart Centre AS (ECC), to deliver services within database operations/validation, sales and distribution, infrastructure and R&D to PRIMAR through a service provider agreement. NHS is responsible for the daily operation within the framework of strategies and policies decided by the PRIMAR Advisory Committee. The Cooperating Hydrographic Offices, through the PRIMAR Advisory Committee (PAC) decides on the overarching policy of PRIMAR. PRIMAR's vision, mission and objectives are as follows:

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.

PRIMAR'S MISSION

- Assume RENC responsibilities in support of UN Resolutions, IMO Conventions and IHO WEND Principles.
- Provide all actors with responsibilities for safety of navigation and protection of the maritime environment with accurate up to date maritime geospatial data.
- Provide to HOs service solutions and framework to co-operate in the management and provision of ENCs and maritime geospatial data.
- Consider Capacity Building support to achieve adequate global ENC coverage.

PRIMAR'S OBJECTIVES

- Foster closer cooperation between HOs to reach the greatest level of harmonization and consistency in ENC services.
- Encourage and support the achievement of adequate global ENC coverage.
- Encourage and support efforts to establish RENCs.
- To provide the most efficient ENC quality and distribution services and ensure continuous improvement.
- Foster close cooperation with private industry and distribution network to ensure the most efficient services.
- To ensure the visibility of PRIMAR and the promotion of IHO global ENC coverage.
- Provide cooperating hydrographic offices with operational and technical support and services in their work to produce, quality control and deliver harmonised ENC services compliant with all relevant international standards.

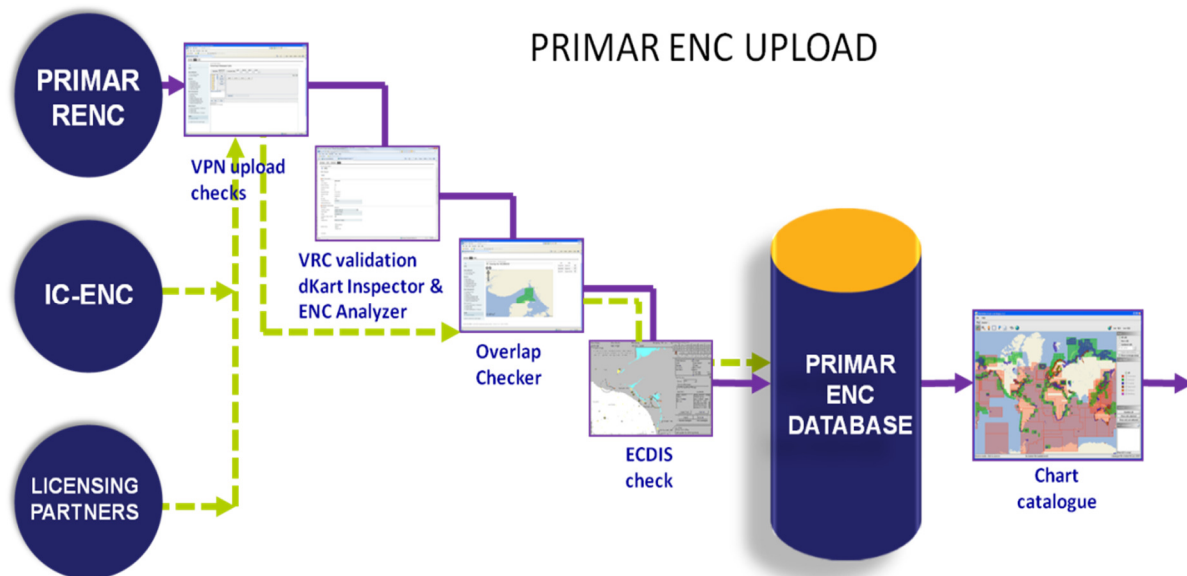
PRIMAR FOCUS AREAS FOR 2016

The specific objectives for PRIMAR during 2016 have been:

- Continuously provide the world's most efficient ENC quality control and validation services
- To achieve increased ENC coverage in Asia and prepare for new members to join PRIMAR
- To increase knowledge and conduct training in ENC validation and quality control for member nations
- To increase ENC sales, achieve cost control and financial sustainability
- To further develop and improve the PRIMAR technology and services
- To be visible in the IHO arena and maintain a close relation with the network of distributors

PRIMAR 2016 ENC QUALITY CONTROL AND VALIDATION SERVICES

All ENCs delivered to PRIMAR undergo a series of validation and quality control checks. To ensure that the ENCs are in accordance with relevant IHO standards, all ENCs go through automated S-58 upload checks in the PRIMAR VPN system. ENCs that contains errors are rejected, and a report is generated back to the relevant HO. Having been ISO 9001 accredited since 2005, PRIMAR has a high degree of focus on quality in all stages of the ENC validation and distribution process.



PRIMAR ENC Validation Procedure

The main tool used for ENC quality control available for PRIMAR member nations is the **validation report checker (VRC)**. The VRC gives access to a whole range of different tools for checking the quality and consistency of the ENC product. All messages reported in the VRC are categorized with guidance on how to proceed with the validation of the ENCs. Historical data from the validation process of each ENC is stored and easily accessible in the VRC. In addition, PRIMAR provides support to the HOs in interpreting, understanding and suggest appropriate measures to resolve quality issues.

The PRIMAR ENC validation statistics for 2016 are as follows:

New ENC	New Editions	Reissue	Cancel cell	Updates
913	5370	1106	174	22 635

The below table shows the development of the PRIMAR ENC database during 2016:

Date	Total no of ENCs	Overview	General	Coastal	Approach	Harbor	Berthing	Updates
01.01.16	14 295	177	556	2 357	4 194	5 389	1 622	35 129
01.07.16	14 770	180	569	2 422	4 268	5 547	1 784	38 121
31.12.16	15 201	180	585	2 478	4 346	5 694	1 918	39 653

TRAINING IN ENC VALIDATION AND QUALITY CONTROL FOR MEMBER NATIONS

PRIMAR has conducted three ENC validation workshops for four different nations during 2016. Nine ENC validators were trained. During the courses training were provided in all PRIMAR tools for ENC delivery, validation and quality control. A course in ENC distribution was arranged for the Croatian Navy as they have been set up with the PRIMAR Navy Supplier Service.

The 14th PRIMAR TEWG meeting was held in Stavanger 24 – 25 May. Thirty participants from hydrographic offices and software suppliers attended the meeting. Topics covered were the new WEB Data Management tools in PRIMAR and ENC data overlap. S-58, S-101 and S-102 were also covered and a demonstration of S-57 to S-101 data converting was shown.



PRIMAR TEWG 2016



ENC SALES, COST CONTROL AND FINANCIAL SUSTAINABILITY

PRIMAR 2016 financial results:

- Total revenue of ENC sales 21 % increase compared with 2015.
- Total cost of PRIMAR operation \$2,07m.
- Financial surplus (excess of cost coverage) of approximately \$500k to be paid back to member nations.

PAC 23 approved funding the development of the PRIMAR Chart Catalogue from the current Java based platform to a web-based platform within the 2016 budget.

PAC 23 approved a new financial model for PRIMAR, effective from 1.1.2017. Financial model 6.0 replaces the royalty-based model 5.0. From 2017, PRIMAR will charge a fixed fee pr. ENC transaction for commercial and national transactions. Financial model 6.0 will be evaluated during 2017, and a PFWG meeting has been scheduled for May 2017 for follow-up actions. PAC 23 approved a fixed fee pr. ENC transaction for the provision of PRIMAR National Services to non-PRIMAR members.

PAC 23 approved the proposed budget for 2017:

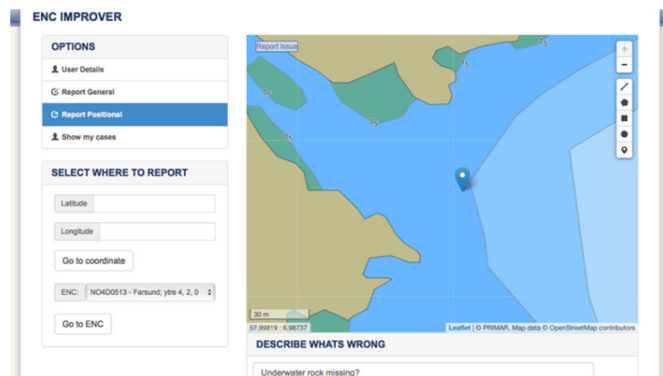
- Transaction fee commercial transactions: \$1,0
- Transaction fee national transactions: \$1,4
- Transaction fee national services to non-PRIMAR members: \$2,3

DEVELOPMENT OF PRIMAR TECHNOLOGY AND SERVICES

The following technological developments have been conducted or are ongoing within PRIMAR:

- VPN Java applets to WEB project. The applets that will change to WEB pages are Upload Cells, Release Pre-release Cells, Download Released Cells, Download Pre-release Cells and Delete Pre-release Cells. The new functionality is operational.
- The PRIMAR ENC Improver has been out in operational use for Norwegian ENCs. This functionality can be expanded to cover ENCs of other HOs if desired.

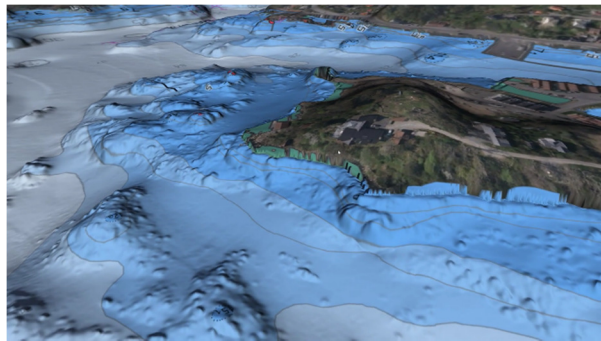
The Web-based PRIMAR ENC Improver allows an end-user with a valid ENC license to provide feedback to the Hydrographic Office on observed errors in an ENC. With easy functionality, the end-user can draw in a snapshot of the ENC, attach pictures and describe the anomalies. This can then be sent to the HO.



- Official ENC data report is included as a functionality on PRIMAR VPN. This report lists the status of all the ENCs from a PRIMAR member nation. The report can be automatically generated and subscribed to.
- The pilot project for development of S-102 bathymetric data distribution is continuing. The S-102 project is estimated to be fully implemented Medio 2017.

Expanding the PRIMAR ENC service with upload, validation, viewing, 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.



- Upgrading the PRIMAR Chart Catalogue from the current Java-based solution to a more modern and future-oriented web interface has been identified as a necessary upgrade of the PRIMAR infrastructure. This is a major upgrade expected to commence autumn 2016 estimated to be completed in 2017.

THE IHO ARENA AND RELATIONSHIP WITH THE DISTRIBUTOR NETWORK

During 2016, PRIMAR was present at the following IHO conferences to promote the RENC concept:

- WENDWG6, Stavanger, Norway
- North Indian Ocean HC 16, Chittagong, Bangladesh
- Nordic HC 60, Stavanger, Norway
- East Atlantic HC 14, Cadiz, Spain
- S-100WG, Tokyo, Japan



During 2016, PRIMAR conducted several meetings with ENC distributors and participated in several maritime exhibitions and industry fairs to promote the RENC concept and the use of official ENCs. The bi-annual PRIMAR distributor seminar was arranged in August in Hamburg, Germany.

CONCLUSION AND FOCUS FOR 2016

2016 proved to be a successful year for PRIMAR with further increase in ENC sales, increase in the number of registered ENC users, increase in the use of Navy and Governmental services, expanded coverage in the RENC ENC database and several technological developments.

At the end of 2016, PRIMAR have 15 member nations through bilateral agreements. 11 other nations and official ENC producers deliver data to PRIMAR through distribution agreements. All ENCs from IC-ENC are delivered to PRIMAR through a VAR agreement. Together, this comprise the global PRIMAR ENC database of 15 200 ENCs.

At the end of 2016, PRIMAR have 54 commercial ENC distributors around the world. For the member nations, PRIMAR operate 7 different Navy Supplier Services as well as 9 different Governmental ENC Supplier Services.

The PRIMAR Advisory Committee (PAC) met in Riga, Latvia for the 23rd meeting in November 2016. During PAC 23, revised PAC statutes and the new PRIMAR financial model were approved.

Mr. Rainer Mustaniemi from FHO was appointed as the new PAC Chairman. Ing. Gen. Bruno Frachon from SHOM was elected as new PAC vice chair.

Development of new PRIMAR technology and services will continue in 2017.

Hans Christoffer Lauritzen
Director PRIMAR

Rainer Mustaniemi
PAC Chairman