



PRIMAR 2015 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

PRIMAR is operated by the Norwegian Hydrographic Service (NHS) 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.

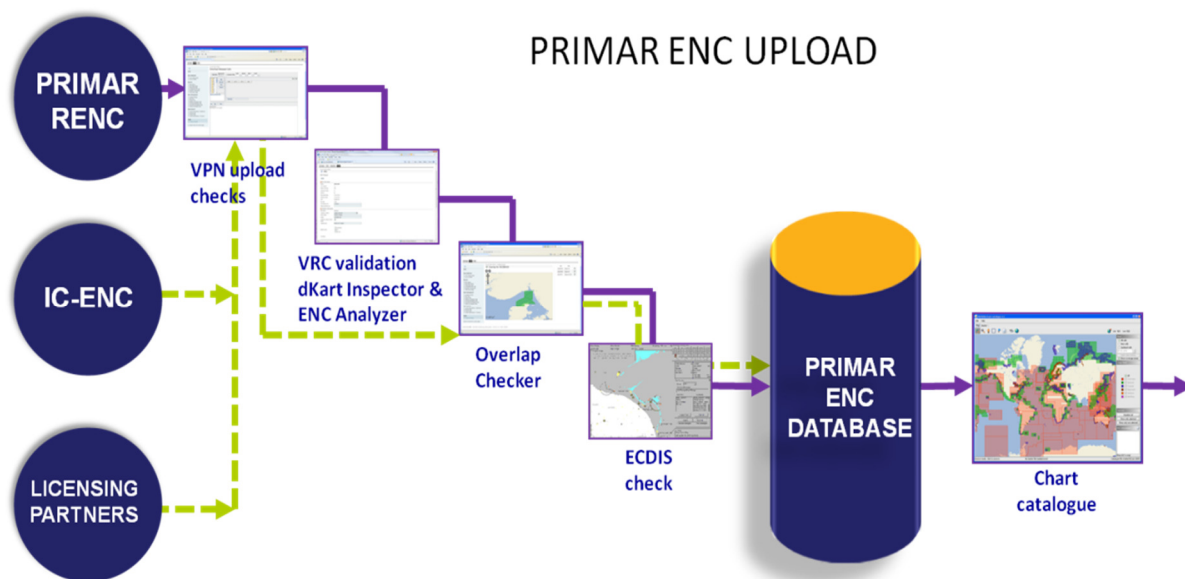
PRIMAR FOCUS AREAS FOR 2015

The specific objectives for PRIMAR during 2015 have been:

- Continuously provide the world's most efficient ENC quality control and validation services
- To achieve increased ENC coverage in Asia
- 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 2015 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.

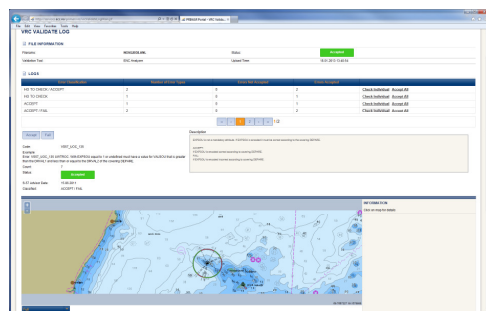
The PRIMAR ENC validation philosophy can be summarized as follows:

- The HO has 24/7- 365 access to PRIMAR via web (VPN)
- Online validation tools are available to the HO
- Increase the HO's own competence in ENC validation
- The HO is in control of own data
- Upload, download, delete and release of data is conducted in VPN

PRIMAR ENC validation completion times

The automated and continuously available PRIMAR systems for ENC upload and validation converts into unparalleled short turnaround times for validation of updates and new data. This is of course an important aspect concerning navigational safety. The average completion times are as follows:

- Update: 10 minutes
- New edition: 10 – 20 minutes
- New ENC: 2 hours



**PRIMAR ENC Validation tool
VRC**

The PRIMAR ENC validation statistics for 2015 are as follows:

New ENC	New Editions	Reissue	Cancel cell	Updates
2 164	6 242	797	239	24 177

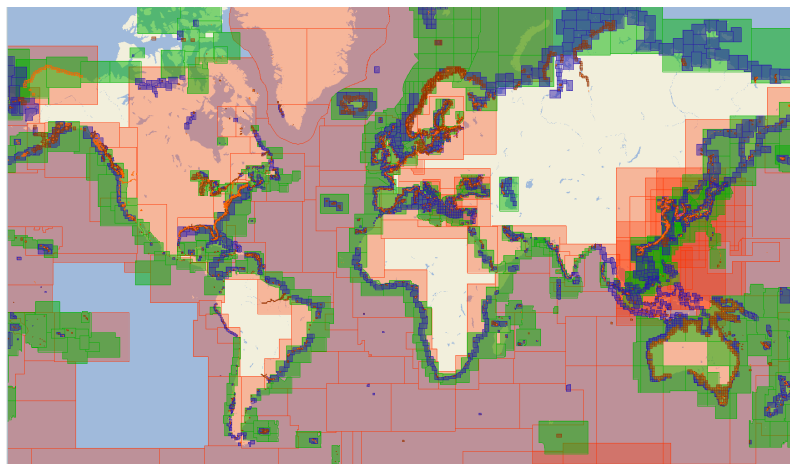
The below table shows the development of the PRIMAR ENC database during 2015:

Date	Total no of ENCs	Overview	General	Coastal	Approach	Harbor	Berthing	Updates
01.01.15	12351	171	537	2104	3770	4627	1142	32238
01.07.15	13796	179	571	2342	4105	5198	1401	34729
31.12.15	14442	179	574	2385	4216	5451	1637	35762

INCREASED ENC COVERAGE IN ASIA

For several years, feedback from the network of PRIMAR distributors have been focused on the lack of ENC coverage in South-East Asia. During 2015, PRIMAR signed three ENC distribution agreements that increased the coverage in Asia:

- Indonesia
- PRD ENC (CN, C2, C3)
- China (C1)



PRIMAR ENC database – 14 400 ENCs

TRAINING IN ENC VALIDATION AND QUALITY CONTROL FOR MEMBER NATIONS

During 2015, three PRIMAR ENC quality control and validation workshops for member nations were arranged.

Latvia: Nine participants in Riga 3-5 November 2015. The following nations took part in the course: Latvia, Lithuania, Estonia and Russia.

Iran: Seventeen participants from different Iranian chart producing agencies in Tehran 15-18 November 2015.

Croatia: Eleven participants in Split 8-10 December 2015. The following nations took part in the course: Ukraine, Montenegro and Croatia.

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 Finnish Border Guard HQ in December 2015 when the Finnish Border Guard was set up with the PRIMAR Navy Supplier Service. The PRIMAR Technical Experts Working Group meeting was arranged in Stavanger, Norway in February 2015.



PRIMAR ENC validation workshop – Tehran



PRIMAR TEWG 2015

ENC SALES, COST CONTROL AND FINANCIAL SUSTAINABILITY

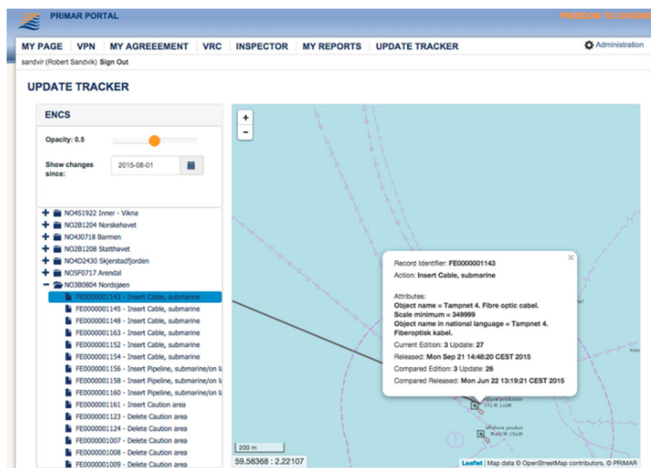
2015 saw a 12 % increase in ENC sales through PRIMAR compared to 2014. The ENC sales was 13 % higher than budgeted. A high increase in the number of registered ENC users was also noted during the year. Positive cost control was attained as the costs of operating PRIMAR was 24 % lower than budgeted. This allows a surplus to be divided among the member nations beyond the regular payback of the royalty based financial model. Discussion are ongoing in the PRIMAR Financial Working Group (PFWG) about a possible new financial model from year 2017.

DEVELOPMENT OF PRIMAR TECHNOLOGY AND SERVICES

Several technical developments and introduction of new services took place in PRIMAR during 2015:

- The PRIMAR Update Tracker (PUT) was introduced:

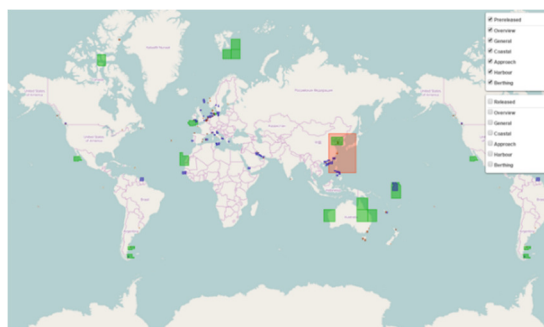
PUT increases the user's ENC update familiarization, allowing him to step through the updates and changes in his active chart folio. Such a visualization of the ENC update will contribute to improve the user's situational awareness either for navigation or for planning purposes.



- The PRIMAR coverage and overlap checker was made available to IHB, WENDWG and the Regional Hydrographic Commissions.

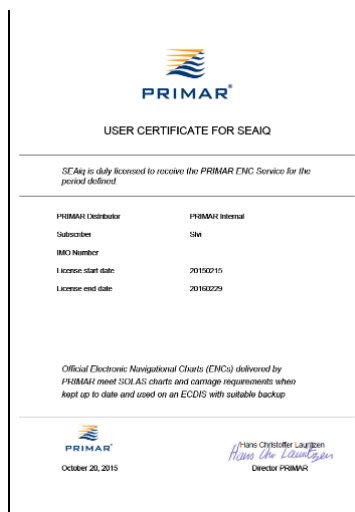
The coverage and overlap checker gives access to the joint RENC database for review of coverage and overlaps.

The functionality along with user manual was made available to the users. Positive feed-back received.



- The PRIMAR ENC End User Certificate was introduced:

An up to date PRIMAR ENC User Certificate service is available through the PRIMAR web-portal and allows for the relevant PRIMAR ENC User Certificate and attachment to be printed in a pdf format. The PRIMAR ENC User Certificate can be accessed by all PRIMAR distributors and their end-users



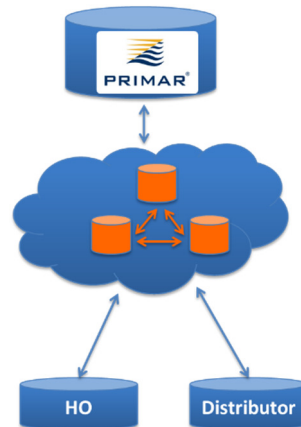
- 80 of 140 S-58 critical tests have been added to the PRIMAR VPN ENC upload system. New critical tests are continually added.
- ENC data protection compatible with IHO S-63 edition 1.2.0 was published in January 2015.
- Introduction of Cloud Computing Infrastructure:

All PRIMAR online services and infrastructure being ported to Amazon Web Services.

Improvements in: Backup, ad-hoc capacity planning, availability zones and security.

"Local" service access worldwide.

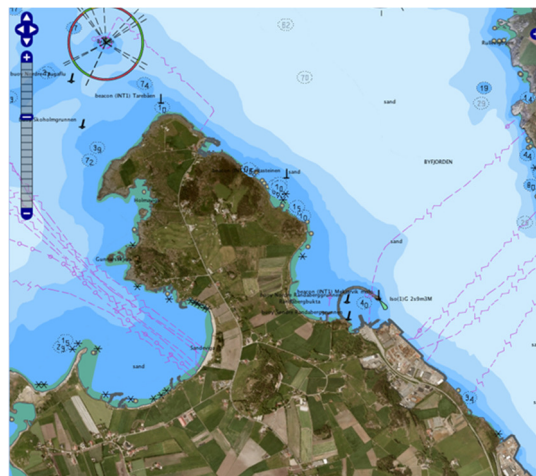
Local warm stand-by provided.



- Provision of free Web Chart Service of national data to PRIMAR member nations.

The PRIMAR Web Chart Service is offered free of charge to PRIMAR member nations for own (national) data for internal use.

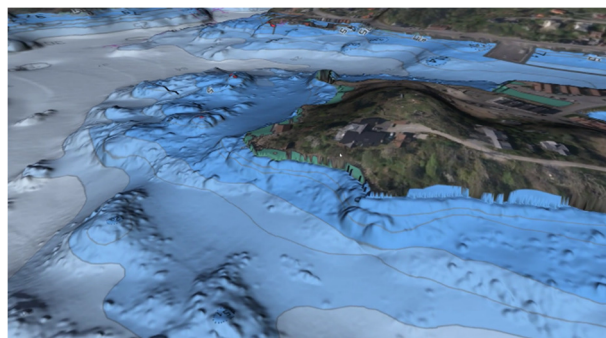
A PRIMAR member nation may also allow other member nations access to its national WMS data.



- Pilot project for development of S-102 bathymetric data distribution

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.





THE IHO ARENA AND RELATIONSHIP WITH THE DISTRIBUTOR NETWORK

During 2015, PRIMAR was present at the following IHO conferences to promote the RENC concept:

- ROPME Sea Area HC 6, Abu Dhabi, UAE
- North Indian Ocean HC 15, Muscat, Oman
- Mediterranean and Black Seas HC 19, Batumi, Georgia
- WENDWG5, Singapore

During 2015, 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. PRIMAR also conducted a web-based distributor survey during 2015. The primary goal of the survey was to get an understanding of the level of satisfaction PRIMAR has among its distributors. The secondary goal of the survey was to identify opportunities for improvement. The survey showed that the overall satisfaction with PRIMAR is good among its distributors and in line with previous years. Some specific areas for improvement were identified and suggested.

CONCLUSION AND FOCUS FOR 2016

2015 proved to be a successful year for PRIMAR with 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 2015, PRIMAR have 16 member nations through bilateral agreements. 12 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 14 400 ENCs.

At the end of 2015, PRIMAR have 54 commercial ENC distributors around the world. For the member nations, PRIMAR operate six different Navy Supplier Services as well as nine different Governmental ENC Supplier Services.

The PRIMAR Advisory Committee (PAC) met in St. Mandé, Paris for the 22nd meeting in October 2015. During the meeting, it was decided that focus areas for 2016 would be review of the PRIMAR Strategic document and further investigation of a new financial model.

PAC endorsed the new framework for RENC-RENC cooperation and the delivery of member nations CATZOC data to IHB. Development of new PRIMAR technology and services will continue in 2016.

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Director PRIMAR

Stanislaw Pietrzak
PAC Chairman