

National Report of Finland

[31 August 2010]

Executive Summary

This Report gives an overview of the main activities of the Finnish Hydrographic Office (FHO) since the previous BSHC 14th Conference.

The main issues are:

- Traffic and Fairway administrations in Finland has been re-organised by 1st January in 2010. Two new agencies have been established to replace existing three administrations: the *Finnish Transport Agency* and the *Finnish Transport Safety Agency, TraFi*.
- Some decentralising will be done. The Hydrographic Office will probably be located in Helsinki area, but a new (10 - 15 staff) unit for inland hydrographic activities is planned to be established by 2015 in town of *Lappeenranta*.
- Hydrographic survey operations have been moved to a state owned company *MeriTaito Oy* by 1st January 2010.
- During summer 2010 the hydrographic surveys have been progressed fluently.
- The production of nautical charts and ENC's has been as planned
- The Hydrographic Office has participated actively on the IHO, PRIMAR and HELCOM work.

1. Finnish Hydrographic Office

Administrative and Organisational Status

The Finnish Government has reorganised by 1st January 2010 the road, railway and maritime administrations in Finland. Two new organisations has been established: the *Finnish Transport Agency* and the *Finnish Transport Safety Agency, TraFi*. The previous Finnish Rail Administration, the Finnish Road Administration's central administrative functions as well as the Finnish Maritime Administration's functions which are not being transferred to the Transport Safety Agency or to the state owned new enterprise *MeriTaito Oy* have been merged into the Finnish Transport Agency.

The Finnish Transport Agency will also be responsible for transport guidance for the Regional Centres for Transport Services, Environment and Industry. Correspondingly, the Finnish Maritime Administration's maritime safety function, official vessel traffic management and pilotage duties and vessel register maintenance, the Finnish Civil Aviation Authority, the Finnish Rail Agency and the Finnish Vehicle Administration have been merged into the Finnish Transport Safety Agency.

The Finnish Transport Agency will include Road, Railway, Maritime, Traffic System's and Administration Departments. The Maritime Department includes Hydrographic Office, Traffic Management and Waterways departments. The organisation will be renewed again in beginning of 2011.

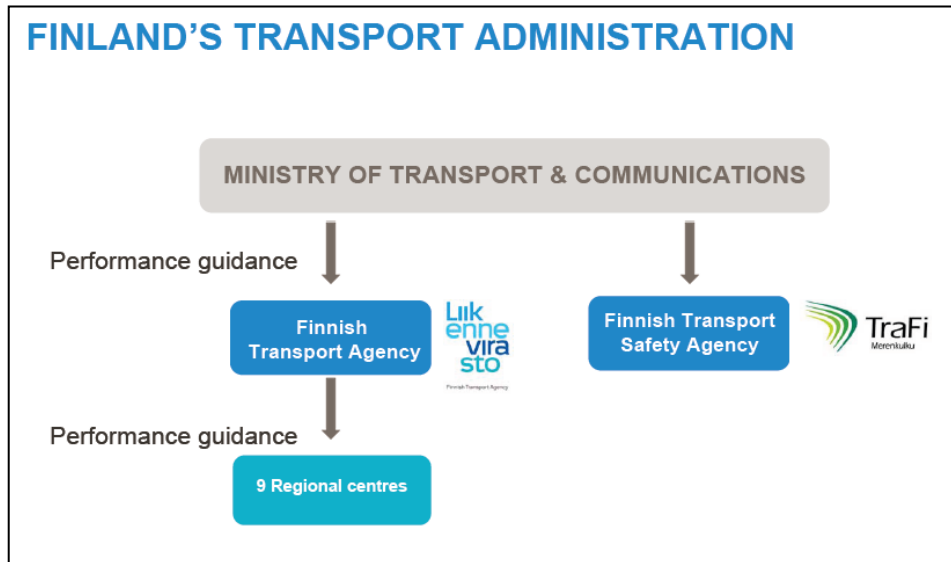


Fig. 1. *The division of Finnish Maritime Administration into new organisations in 1 January 2010.*

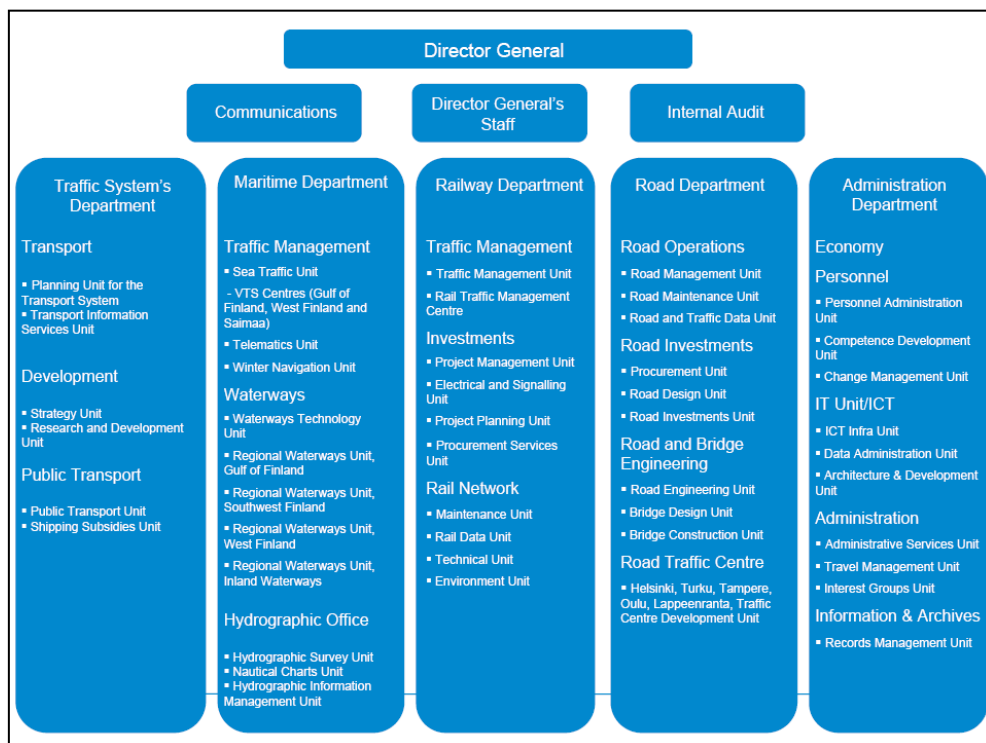


Fig. 2. *The organisation of Finnish Transport Agency on 1 January 2010.*

The new headquarter, including the Hydrographic Office, will be located on Helsinki area, but there are evaluations going on for de-centralising 110 jobs by 2015. This includes a plan for a new (10 - 15 staff) unit for inland

hydrographic activities to be established by 2015 in town of *Lappeenranta* (some 230 km from Helsinki).

Finnish Hydrographic Office:

- The Director and Staff (5)
- Hydrographic Survey Unit (6)
- Nautical Charts Unit (29)
- Hydrographic Information Management Unit (22)

The annual budget of all these units is roughly 12 Million €.

Strategic Plans

The implementation of the **Navi Programme** is going on almost as planned. Insufficient resources have slowed down some activities.

The Process Management System (including **Quality Management and Environmental Program**) is operational and in use in all core and support processes. The goal for 2010 is get the performance indicators well defined and into regular operational use. It is intended to get an official certification to the processes early 2011.

2. Hydrographic surveys

The FMA internal production including hydrographic survey operations and fairway maintenance has been moved to a state owned company *MeriTaito Oy* (www.meritaito.fi) on 1st January 2010. The whole personnel and equipment from the internal production were moved to this new company. The new company has the same capacity for 2010 surveys as earlier. It has plans for renewing its launches and survey equipment. One new building (13 meter survey launch) was delivered in May 2010.



For the year 2010 the FHO has signed an order of all surveys to *MeriTaito Oy*, with some 8 Million €. For this order several technical requirements had to be confirmed as a part of the contract. These were especially for post-processing and deliverables of the survey. The survey markets will be opened gradually within three years so that in 2013 all the surveys will be ordered from open markets. Thus the development of non-discriminating technical requirements for contracted surveys will be an important task also in the future.

Survey results in total in 2009 (own production): included 200 km² single beam echo soundings and 1413 km² surveyed with multi-beam method. Malfunctions in ships and also in the survey equipment caused drawbacks in comparison to the original survey plan. The main survey projects during season 2009 were

- fairway surveys for the deepening the fairway to *Kemi (Bothnian Bay)*
- HELCOM-surveys in the Northern Baltic, Open sea areas south from Archipelago sea and *Åland*

- general surveys in the archipelago of eastern *Gulf of Finland*
- general surveys of the *Lake Kallavesi* in the *Saimaa Lake* area.

Preliminary results indicate that the surveys during 2010 have been progressed fluently and according to the contract.

The BSHC/HELCOM Harmonised Hydrographic Re-Survey Scheme has been updated with the survey results of the season. The revision of the scheme is in progress within the BSHC and HELCOM.

Hydrographic data processing and management

Survey data validation and quality checking against surrounding data as well as registration into bathymetric databases takes place in the FHO in Helsinki. The soundings are stored as original soundings in the Sounding Database System (*SYRE*). At the end of June 2010 SYRE did contain about 26 billion soundings covering ~26.000 square km coastal waters and inland lakes. Geographic information of controlled areas and metadata of all survey projects are stored and maintained in the Controlled Area Database System (*VARE*). Data processing systems and databases are developed further and maintained by the FHO.

The FHO has one centralised hydrographic information management system integrated with both the ENC and printed chart production lines. The data management system (*KATISKA*), based on *Oracle10/ArcSDE9* and *ArcMap9.1* include databases and tools for processing and maintaining hydrographic data and export functions for ENC production. Some additional tools for data processing are developed further, for example tool for maintaining certain CATZOC areas automatically is now operational. A study project for evaluating future technological solutions for nautical data processing systems is going on during 2010.

Printed charts are produced using the *nSector* system via automated update management interface. Both digital and paper products are derived from a single source to avoid discrepancies between the different products and for efficiency of data management.

All incoming chart update data is stored on-line to hydrographic database. A management system for updates should be operational during 2011 allowing handling chart updates in controlled and efficient way through the whole hydrographic process.

3. Nautical Charts

Cartography

The Hydrographic Office has adopted a long term plan for production of nautical charts (both printed charts and ENCs). Plan covers years from 2010 to 2016 and describes what products will be published, when and why. Production plans are derived from plans of other departments of the Finnish Transport Agency (e.g. plans to build new fairways, TSS's or changes of them). Long term plan will be updated four times a year.

The chart transition from traditional Finnish nautical charts into INT charts is completed for sea areas for charts for SOLAS traffic (General, Approach and Harbour charts). The revision of the charts is going on in inland waters. The revision of *Saimaa Lake* area charts will be completed in the beginning of 2011 and for some other inland water charts 2-3 years later.

There are 86 nautical charts and 17 chart series for small crafts. Each series includes normally from 15 to 25 charts for public sale on both sea areas around Finnish coast and on main inland lakes. Some charts from minor inland lakes will be removed from portfolio. The amounts of sold copies were in 2009 about 11 000 charts and 14.000 chart series.

ENC production and distribution

Currently there are 200 Finnish ENC cells on the market. These cells cover main fairways used by SOLAS vessels in sea areas. Target for adequate ENC coverage in all navigational purposes is end of 2010.

Currently (August 2010) the FHO has achieved 92% of adequate ENC coverage. Missing part of the coverage will be produced by the end of 2010.

ENC base cells are produced using tailor-made *Katiska* software. ENC updates are produced using both *Katiska* and *SevenC's* tools (*ENC Manager* and *ENC Designer*). Tools for validation of ENC's are *dKart Inspector* from *Jeppesen* and *ENC Analyzer* made by *SevenC's*.

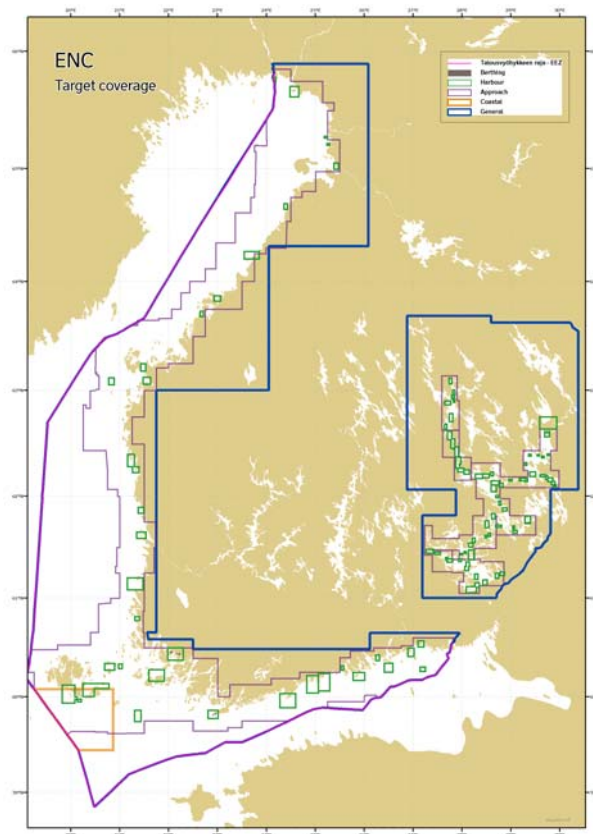


Fig 3. Target coverage for Finnish ENC data.

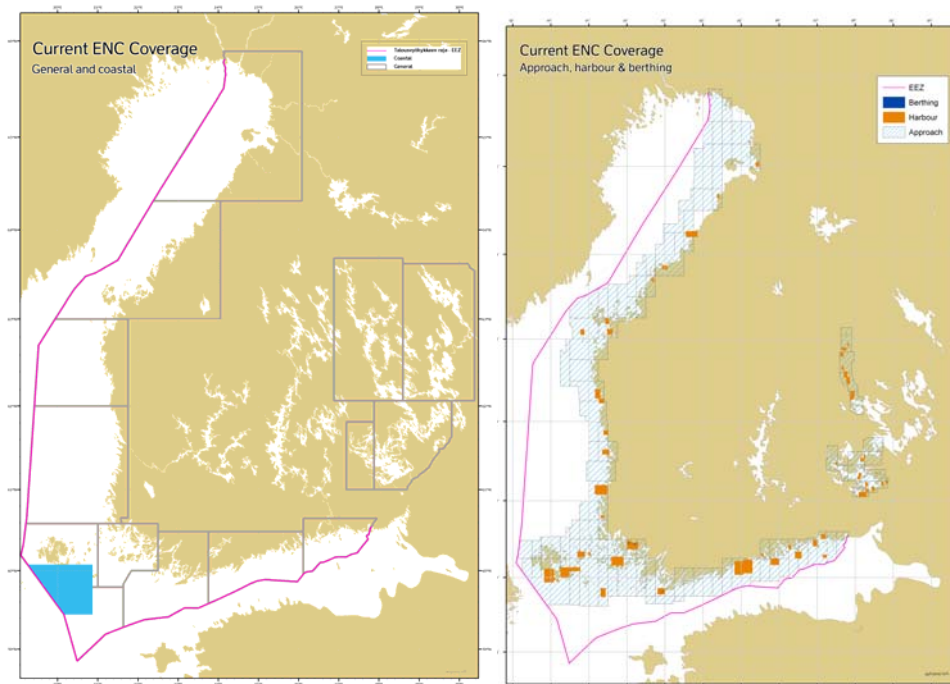


Fig 4. Current ENC coverage for general and coastal, and for approach and harbour usage bands [by August 2010].

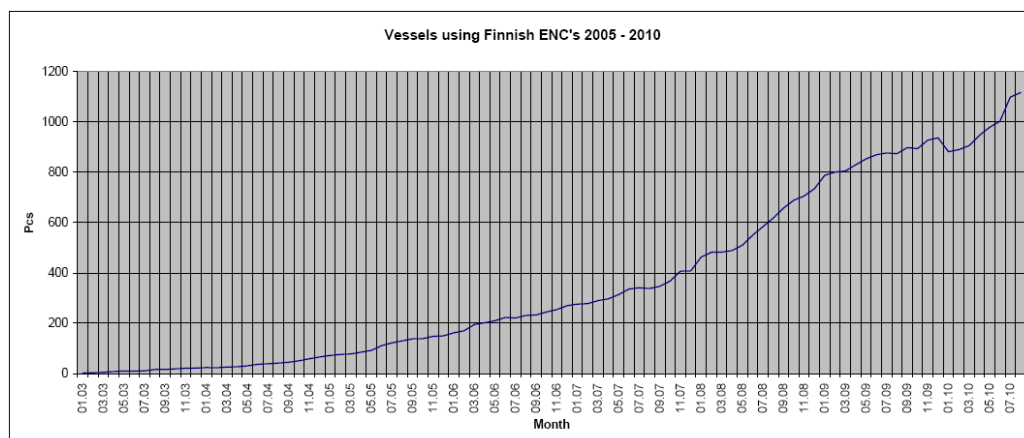


Fig 5. The number of ships using Finnish ENC's from March 2003 to August 2010.

The distribution of the ENC's is done via *PRIMAR*. The FHO has used the VPN service as a main data transfer tool. Also other services and tools (VRC, S57 Advisor, discussion group etc.) provided by *PRIMAR* are used. The experiences of services have been very positive.

Currently there are about 320 customers and about 1100 vessels using Finnish ENC's. The total number of active subscriptions is approximately 55000.

4. Nautical publications

Notices to Mariners are published every tenth day and are available also on the Internet. ENC charts are updated once a week based mainly on the NtM material. Notices to Yachtsmen, which are compiled on the basis of the NtM, are published five times a year.

The next edition of the List of Lights on the Finnish Coast was published in June 2010. The new sales Catalogue of Finnish Nautical Charts was published in February 2010. A new edition of Chart 1 was published in June 2010.

5. MSI

Navigational Warnings. The FHO (Helsinki Co-ordinator), *Turku Radio* and the designated persons in the Maritime Districts maintain an up-to-date file for navigational warnings. *Turku Radio* (24h service) is sending the Finnish navigational warnings based on this. Navtex warnings will be sent to *Baltico* in Sweden.

The system is supervised and co-ordinated by The Hydrographer and Helsinki Co-ordinator, whereby the Finnish navigational warning practice constitutes a part of the international navigational warning system.

The new Finnish VHF network has been in operation from 1st January 2010. At the same the old VHF and MF networks were closed. Finnish navigational warnings (local and coastal warnings) are transmitted by VHF from *Turku Radio* and by Navtex (coastal warnings) from *MSI SWEDEN*.

6. C-55

The C-55 database has been updated in March 2010 (only minor changes).

7. Capacity building

Nothing to report.

8. Oceanographic activities

The FTA has an action plan to take a new vertical reference datum in use. This new datum will be based on the European Height reference system, which has also been adopted as the new national vertical reference frame of Finland. However there is no fixed time schedule for this transition. The BSHC countries are looking for a common vertical reference on the Baltic Sea.

The Hydrographic Department has a close co-operation with the Finnish Meteorological Institute for which is now responsible for sea level observations. There are common development plans for enhancing the methods and procedures for distributing actual sea level data and its interpolations and estimations. Finland has been active on promoting the

non-tidal water level issues in the HSSC TWLWG. However, due heavy administrative work burden, there has been a very limited progress on these issues.

9. Other activities

Bilateral Arrangements

The FHO has continued bilateral co-operation with UKHO and Germany on chart adoption. The negotiations with Russia are going on.

Spatial Data Infrastructure and Services

The non-navigational use of hydrographic data is increasing all the time. The INSPIRE directive demands new activities from HOs. The directive has been implemented in Finland by a Spatial Data Infrastructure Law and Act which entered into force in Autumn 2009. The FHO has participated actively on the implementing work of National Geodata Portal. The major tasks at the moment are to define the first stage services for view, download and transformation services. At the same time the work for creating INSPIRE specific national spatial data sets has been started. The metadata of FHO is available at the National Geodata Portal.

International activities

The Hydrographic Office has participated actively on the IHO work. Finland has had representatives in the HSSC Committee, and in its various Working Groups e.g. TSMADWG, CSPCWG, DIPWG, MSDIWG, DQWG, TWLWG (representing BSHC). Finland represents the BSHC on the IRCC WEND TG.

Finland has been active within the BSHC on the harmonisation of vertical datums (ChartDatumWG Chair), Hydrographic Re-Survey Monitoring WG (MWG Chair), BSICC (Chair). Within the NHC Finland has been active on Data Quality issues (chairing the Nordic DQWG), enhancing paper chart production (PCPWG) and hydrographic data transfer (IDEWG). Finland has participated to the work of all the working groups of PRIMAR. The FHO has actively promoted hydrographic issues to HELCOM.

Printing On Demand

The FHO has finalised the work with the Technical Research Centre of Finland (VTT) on the issue of Printing On Demand. The technical study for FHO has been made and the specifications for printing solutions are now available. The next step for analyzing the modifications needed in the data management process to be able to print on demand revised reprints has not yet been started.

10. Conclusions

This report highlights the main activities of the Finnish Hydrographic Office since the previous BSHC 14th Conference in 2009.