

National Report of Finland

Executive Summary

This Report highlights the main activities and achievements of the Finnish Hydrographic Office since NHC 58th Conference in August 2014.

- Hydrographic surveys has been performed as planned
- Production of nautical charts has been performed as planned
- Projects for developing Bathymetric Database, Nautical Chart Production, Source Management and Online Publication systems are on their way.

1. Finnish Hydrographic Office

No changes in organisation since last meeting. Staff is now 52 persons. Yearly budget is about 10 million euros.

The FHO has working according to the Quality Management System. A new quality certification of a new evaluator (Inspecta) was performed successfully, without deviations. Auditing was including whole process.

2. Hydrographic surveys

There were open procurements for three survey tasks; on Bay of Bothnia Kokkola-Rahja and Bothnian Sea Rauma-Korsnäs two year projects (part of the EU TEN-T *MonaLisa* project, ~M€ 4,0), on inland lake area in Lake Saimaa (~€ 900.000) and on two fairway areas (summing ~€ 300.000). In the [Table 1](#) there are statistics of 2014 on these tasks. In [Fig.1](#) there are shown the surveyed areas in 2013 and 2014.

Task	Surveyed by	Multibeam [Km ²]	Line sounding [Km ²]
The Bothnian Sea	<i>Meritaito Oy</i>	2.500	
The Bay of Bothnia	<i>Meritaito Oy</i>	1.500	
Lake Survey 2014	<i>Meritaito Oy</i>	200	100
Bay of Bothnia Fairway Surveys	<i>Meritaito Oy</i>	20	
Gulf of Finland Fairway Surveys	<i>Meritaito Oy</i>	102	

Table 1: Survey statistics for 2014.

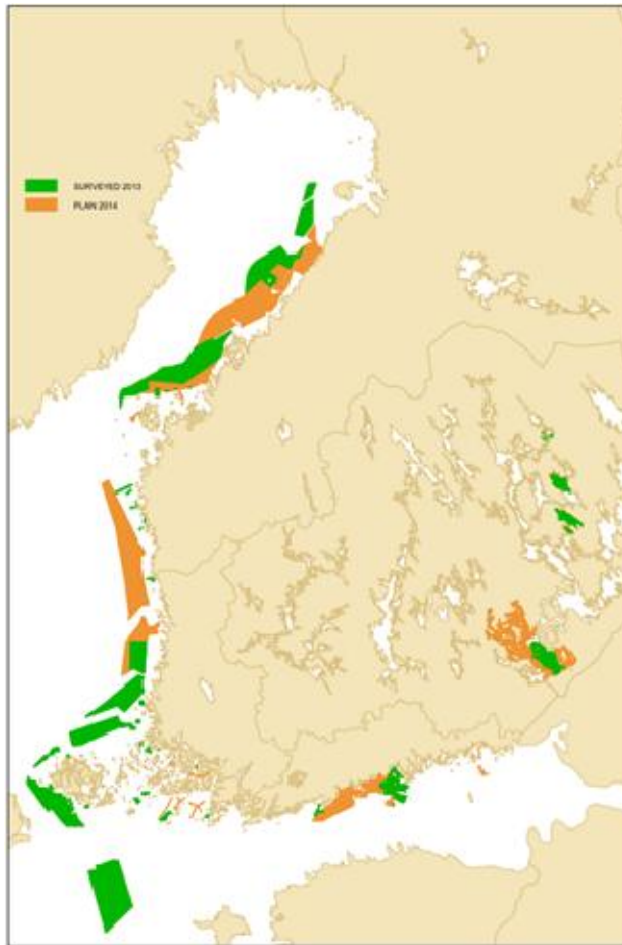


Fig. 1. Hydrographic Surveys in 2013 (green) and in 2014 (orange).

The Finnish part of the HELCOM-BSHC Revised Harmonised Hydrographic Re-Survey Scheme has been enhanced and the database updated. The HELCOM survey plan is the driving force to perform the hydrographic surveys in Finnish waters. For 2014 HELCOM Category II surveys have been procured in the Bothnian Sea and southern Bay of Bothnia totalling about M€ 2,5 and roughly 4.000 km². Further ~7.200 km² in the Bothnian Sea EEZ and ~1.300 km² in the Bay of Bothnia have been opened for procurement. All 2014 field hydrographic surveys have been completed and some data deliveries and validation still pending.

As a total Baltic Sea re-survey scheme, the requirements of the HELCOM Moscow 2010 Ministerial Declaration are fulfilled by all Baltic Sea countries. This was reported to HELCOM Ministerial Meeting on 3 October 2013. The Ministerial Meeting appreciated the re-survey work. More details in the MWG Report to BSHC19.

Co-operation with Swedish Maritime Administration in procurement and service provider work supervision has been most helpful.

Finland has participated into a EU INEA CEF Transport TEN-T grant application FAMOS Freja (2014-2016) headed by Swedish Maritime Administration for support on completing the HELCOM Cat I&II surveys.

Hydrographic data processing and management

The renewal of the Bathymetric database has taken its first steps in late 2013 and during 2014.

Lack of resources has affected the validation of procured hydrographic surveys and received data causing delays.

Several data sets of bathymetric data has been provided for the Baltic Sea Depth Model within the limits of Finnish national legislation. Information will be updated continuously after new surveys.

3. Nautical Charts

Printed charts

Printed charts in 2014 have been produced generally according to the plans. New editions were published on four chart series (D,E,J,P) and 25 nautical charts. Three totally new harbour charts (127,162 and 167) were also published. Continuous updating of the printed charts has been improved.

Statistics for sold charts are shown in *Table 2*. In addition to these there are many adopted charts sold by UKHO and BSH.

The Finnish nautical charts has been published and marketed by *Karttakeskus Oy*. The number of sold printed chart was increased about 10 % in 2014.

Chart product (printed)	2010	2011	2012	2013	2014
<i>International traffic</i>					
General charts	2539	1772	1620	1977	1984
Coastal charts					
Approach charts	6098	3580	5379	4943	5434
Harbour charts	659	732	1267	1313	2162
Chart series (inland areas)	1672	2103	1998	1490	1538
<i>Domestic traffic</i>					
General & approach charts	1423	1384	1000	748	645
Chart series (sea areas)	14674	11695	11116	11489	12600
Chart series (inland areas)	2218	1862	1503	1913	2496
Other charts	222	5	0	0	0
Total sold copies	30387	23470	24006	24078	26 859

Table 2 Statistics of sold Finnish nautical charts in 2009 – 2014.

During spring 2015 two nautical chart series for yachtsmen will be published, see cover pages with index of new surveys. *Fig. 2*.

- B (Helsinki-Parainen. Gulf of Finland)
- C (Ahvenanmaa, Åland. Archipelago Sea- Sea of Åland.)



Fig.2. New editions of nautical chart series for leisure craft spring 2015. New surveys ■

ENC production and distribution

ENC production and distribution has been mainly according to the plans. In 2014 3 new cells and 43 New Editions have been released. During the spring 2014 many new harbour cells will be published covering large scale special chart of chart series. The number of ENC Statistics are in [Table 3](#) and [Table 4](#).

Number of releases	2010	2011	2012	2013	2014
<i>New ENCs</i>	54	14	8	4	3
<i>New editions</i>	23	1	44	33	43
<i>Total amount of enc-cells</i>	151	205	192	180	175

Table 3. Statistics of produced Finnish ENCs

Use of ENC	2010	2011	2012	2013	2014
<i>No of ships 31.12</i>	1153	1094	1239	1286	1417
<i>No of customers 31.12</i>	340	396	453	474	529
<i>No of licenced cells (ENCs sold annually)</i>	86407	88831	90043	98221	100856

Table 4: Statistics for the use of Finnish ENCs

A pilot project for developing a new chart service for governmental use i.e. the Finnish Navy and the Finnish Coast Guard was continued. Furuno Finland Oy was selected as a partners for the project. The service in the pilot project utilise the solutions developed by Electronic Chart Centre (ECC, Norway) and Furuno

Finland Oy. From the service the official electronic chart data can be used in the smaller non-ECDIS equipped vessels.

Quality control of ENC's has been further improved in the chart production process. Some software tools for hydrographic data quality control and operation guidance have been enhanced.

Chart data processing and management

The new system for Source data management "LOKI" was adopted in June 2013. "LOKI" speed up performance of passing through time of source data, offers better tools for analysing source data and control of workflow. Ongoing further development work of the system (LOKI -phase 2) will be completed before end of 2015.

Harmonization of depth information in ENC –project with Sweden continues on 2015. Harmonizing of current chart data is almost done. Approach scale chart plot and S-57 export from the Aland Sea test area were ready on December of 2014 and results have been analysed by FMA and FTA and writing of Guidelines has been progressed. Project continues by testing other navigational purposes in the same area in the Sea of Aland.

Finland follows a decision made in 2013 to add 15 m depth curve and depth areas for 0-3m, 3-6m, 6-10m, 10-15m, 15-20m to nautical chart products. Creating more depth areas has increased the processing time significantly especially when areas with new ranges are merged to the old data. Evaluation of displaying more than two coloured areas for shallow water tint on paper chart is in progress.

4. Nautical publications

NtMs has been published according to the plans. The printed version of NtM was stopped since 1st Jan 2015. A project for On Line web service of NtMs and List of Lights was started on Q1/2015. Statistics are shown in [Table 5](#).

Publication / Service	2010	2011	2012	2013	2014
<i>Notices to Mariners, volume of publications</i>	28	31	32	33	34
<i>Number of NtM Notices</i>	596	680	398	422	397
<i>Number of ER -updates</i>	477	766	449	431	534
<i>Charts in chart updating service</i>		38	56	82	86

Table 5: Statistics for nautical publications

5. MSI

In total 234 navigational warnings were published during 2014 (2011: 248, 2012:265, 2013:276). From February 2015 also local warnings are read in Turku Radio only in english (in web-service also in Finnish and in Swedish).

6. C-55

C-55 will be updated during spring 2015.

7. Capacity building

Nothing to report.

8. Oceanographic activities

The FHO has taken part in the 7th meeting of BSHC Chart Datum Working Group (CDWG) meeting on 11 - 12 March 2015 in Tallinn. The CDWG work concerns harmonization of the vertical datums in the Baltic Sea nautical charts and other navigational products.

FHO has started a research project "Transition to BSHC Chart Datum". Objectives is to study what effects there are to data, products and services in Finnish Transport Agency and find out solutions how the transition can be done. The deadline for the work is December 2015.

The FHO has been in contact to the Finnish Geospatial Research Institute of National Land Survey concerning FAMOS activity 2 geoid modelling for the Baltic Sea which supports the work of CDWG.

9. Other activities

Based on the updated Bilateral Arrangement the adoptions with UKHO have been expanded. Some technical challenges regarding with streamlining the adoption process were investigated.

The FHO has continued the implementation of "Open Data" services. The new services for viewing and downloading data was opened (WMS, WFS, file download service) [link](#). Some feature classes has been opened by open data license but some navigation critical feature classes are still licensed under specific terms.

Finland is participating to the following IHO Committees and WGs: IRCC, HSSC, IRCC/WEND-WG (representing BSHC), IRCC/MSDIWG, HSSC/ENCWG, HSSC/S-100 WG, HSSC/DQWG (vice-chair), HSSC/NCWG, HSSC/NIPWG, HSSC/TMCWG, BSHC, NHC, ARHC, BSHC/CDWG (Chair), BSHC/BSICCWG (Chair), BSHC/BSDIWG, BSHC/BSMSDIWG, BSHC-HELCOM/MWG (Chair), NHC/NCPEG, NHC/Workshop on validation of multibeam data, ARHC/technical committee and to PRIMAR and its WGs.

10. Conclusions

This report highlights the main activities of the Finnish Hydrographic Office since NHC 58th Conference in August 2014.