National Report of Finland

1. Finnish Hydrographic Office

The Finnish Hydrographic Office is organized under The Finnish Transport Agency.

The Finnish Transport Agency is responsible for the Finnish roads, railways and waterways and the comprehensive development of the transport system. The FTA is promoting traffic safety and the balanced and sustainable development of the regions.

FTA services to Merchant Shipping;

- Waterways Infrastructure Maintenance
- Vessel Traffic Services
- Hydrographic Services
- Safety and Distress Radio Communications
- Winter Navigation (winter navigation coordination and procurement of icebreaker services on Finnish waters)

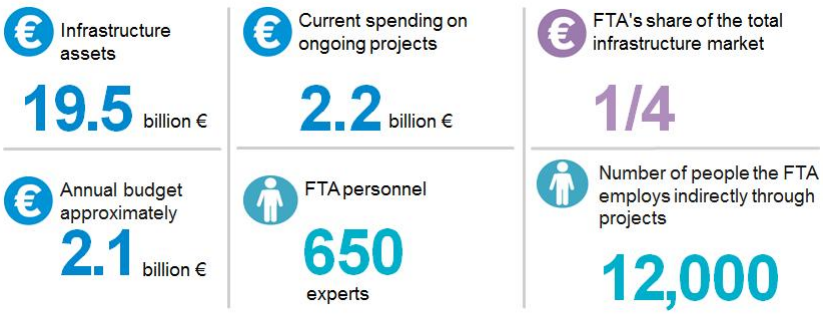

Fig.1. Key figures for the Finnish Transport Agency.

Staff working for the FHO is about 50 persons. Annual budget for hydrographic operations and activities is about 10 million euros.

All hydrographic field operations were assigned to a Government owned company in 2010, when FTA was established. General interest public service orders were used partly during 2010-2012. All hydrographic surveys have been publicly procured since 2013.

The FHO has working according to the Quality Management System (ISO 9001:2008). A new annual quality auditing by Inspecta Oy was performed successfully in June 2016, without deviations.

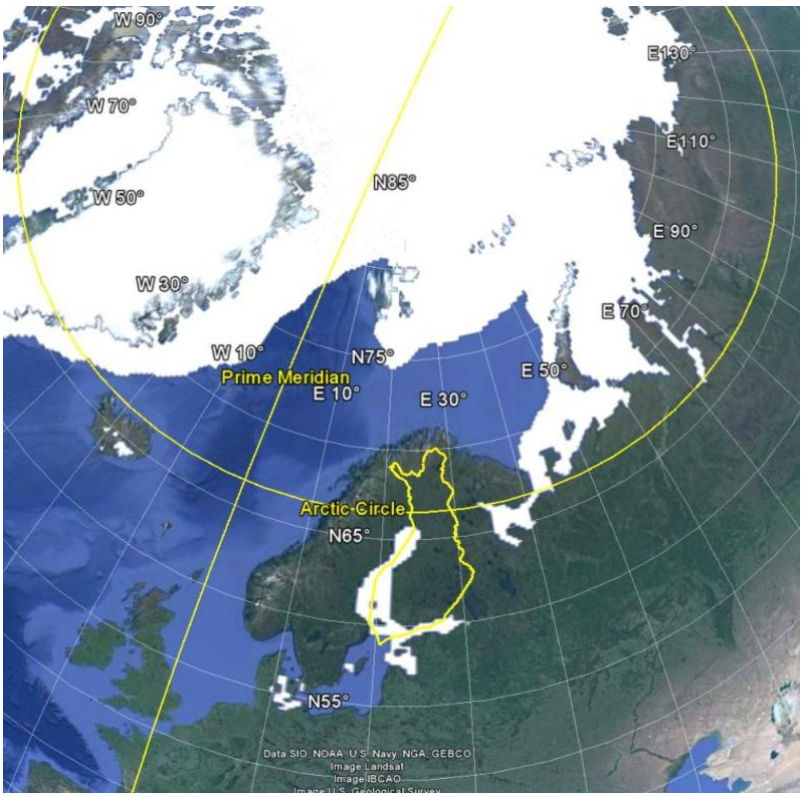

Fig 2: Google Earth with ice coverage March 2013 (NSIDC data)

2. Hydrographic surveys

Finland has succeeded to fulfil the HELCOM ministerial meetings 2001, 2007, 2010 and 2013 decisions on category I and II fairways and shipping routes re-surveys up to today's IHO S-44 ed5 standard. Goals in HELCOM Cat I and II surveys were reached during April 2016. All field hydrographic surveys were completed during 2015. HELCOM cat I & II areas cover about 62.000 km^2. The survey areas are covering all SOLAS shipping routes and beyond up to 10 m depth contour in order to support safe navigation on alternative routes when tough ice conditions occur.

Bathymetric data is utilized also in icebreaker operations.

Finland is chairing BSHC Re-Survey Monitoring Working Group, which task is to follow the HELCOM Ministerial meeting (Oct 2013) outcome to re-survey with up-to-date methods the areas used for commercial and SOLAS shipping in the Baltic Sea.

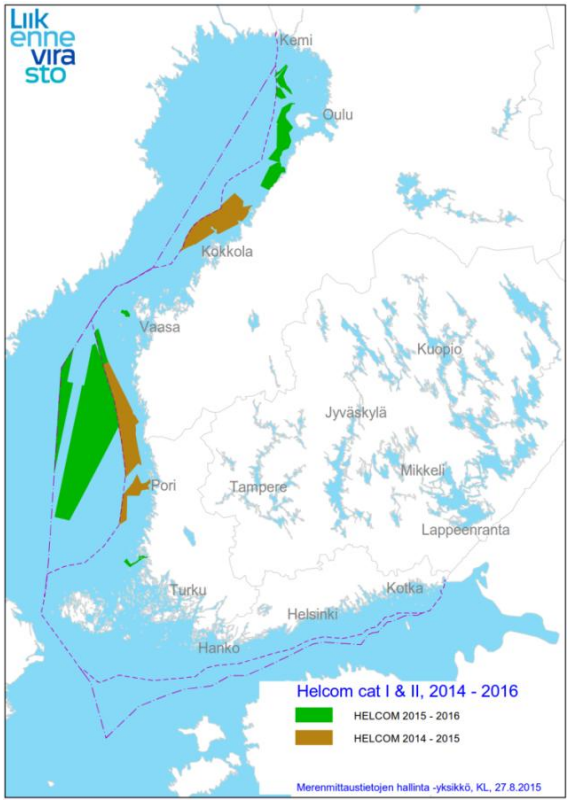

Fig.3. Sea area Hydrographic Surveys in 2014 (brown) and in 2015 (green).

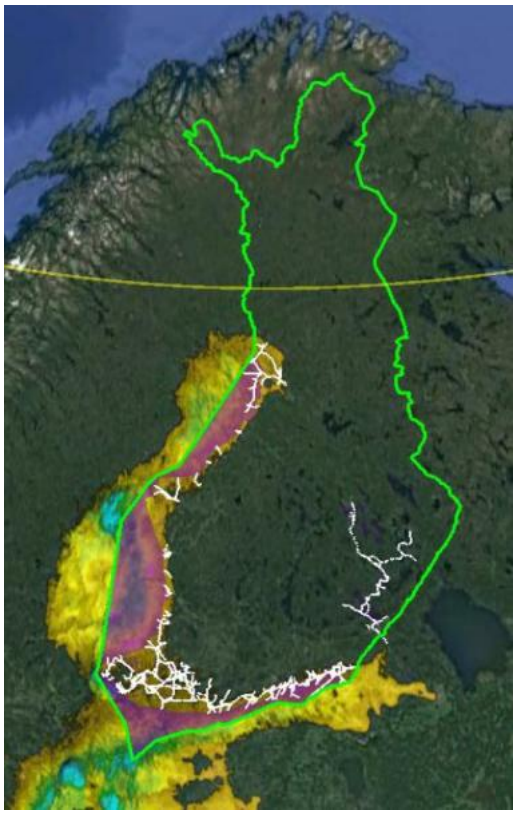

Fig. 4. Hydrographic re-survey coverage in 2016

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

Finland is participating into a EU INEA CEF Transport TEN-T grant program FAMOS Freja (2014-2016) and FAMOS Odin (2017-2018), headed by Swedish Maritime Administration for support on completing the HELCOM Cat I&II surveys. Finland has received about 5 M€ funding from EU TEN-T grant programs for about 41.000 km^2 of hydrographic surveys during 2005 – 2015.

Link to Finnish Transport Agency Hydrographic Survey Program 2015-2020.

Hydrographic data processing and management

The renewal of the Bathymetric database is continuing. Negotiating procurement for the contract has been initiated.

3. Nautical Charts

Printed charts

FHO has not published printed charts on Artic waters.

ENC production and distribution

FHO has not published ENCs on Artic waters.

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. Second phase of the development work of the LOKI and TM Online publication system was completed April 2016.

Finland is evaluating solutions in order to renew the existing chart production system. Invitation to tender for a new system will take place in the beginning of 2017.

Study to determine product specifications for Bathymetric Surface model (S-102), was started as a part of Smart Marine Fairway Project under FTA's DIGI 2016 - 2020 Program.

4. Nautical publications

FHO has no publications covering Artic waters.

5. MSI

Finnish Transport Agency is responsible for safety radio communications in Finnish territorial waters and for distress radio communications in the deep channels of the Saimaa waterways system (inland water).

6. C-55

Nothing to report related to Artic waters.

7. Capacity building

Nothing to report.

8. Oceanographic activities

A research project to change the chart datum of nautical charts and navigational information from MSL-based to EVRS-based datum, "Transition to Baltic Sea Chart Datum 2000", has been done. Objective 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 production of the first test chart started in July 2016. After that more precise production and recourse plans will be done.
The FHO is chairing BSHC Chart Datum Working Group (CDWG). The CDWG work concerns harmonization of the vertical datums in the Baltic Sea nautical charts and other navigational products.

The FHO has acquired shipborne gravity surveys in the Sea of Bothnia during 24 September to 30 October 2015. Gravity surveys are done within FAMOS activity 2 geoid modelling for the Baltic Sea supporting the transition to the Baltic Sea Chart Datum 2000. Gravity surveys consist around 3800 km of surveyed lines. Surveys have been done in co-operation with the Finnish Geospatial Research Institute of National Land Survey and Deutsches GeoForschungs Zentrum using Meritaito Ltd as a contractor for survey vessel.

Airborne bathymetric LiDAR-tests have been executed in two test areas one on sea and one in inland lakes during November and December 2105. Reports have been received in February 2016. Further analysis of the data has been done within a Master's thesis during 2016.

Satellite bathymetry on sample sites on the coast of Finland and inland lakes has been studied. Further analysis of the data will be done within a master's thesis during 2016-2017.

9. Other activities

The FHO has continued the development of "Open Data" services. The new versions of view and download services were released (WMS, WMTS, WFS, file download service) link. The licensing was changed to use mainly Creative Commons terms and conditions. Some navigation critical feature classes are licensed with restrictions.

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

10. Conclusions

This report highlights the main activities of the Finnish Hydrographic Office during 2015, in the extent of ARHC interest.