

## North Sea Hydrographic Commission 32th Meeting

# Agenda NSHC32-G.6 FAMOS project report

2016-05-11

## 1 Summary

- The FAMOS project is on-going according to plan.
- The first phase of the project, FAMOS Freja (2014-2016) receives almost 12 MEUR of EU co-financing from the CEF Transport programme.
- Operative work in all project activities has been on-going since 2014.
- To secure continued EU co-financing, a project proposal for the follow-up phase, FAMOS Odin (2016-2018) has been submitted to the European Commission. The funding decision is pending, but project implementation has already started with some activities.

## 2 What has happened, results?

### 2.1 Project structure

The FAMOS project is split into several phases, covering the time from 2014 to 2020. The first phase, FAMOS Freja, is ongoing and covers 2014-2016. The second phase, FAMOS Odin, is currently starting and covers the period 2016-2018.

Presently, the project consortium includes the Hydrographic Offices of all Baltic Sea countries except Poland and Russia, as well as national geodetic authorities and institutes and one private company:

- Swedish Maritime Administration (coordinator)
- Danish Geodata Agency
- Estonian Maritime Administration
- Finnish Transport Agency
- German Federal Agency for Cartography and Geodesy
- German Federal Maritime and Hydrographic Agency
- GFZ German Research Centre for Geosciences
- Lantmäteriet (the Swedish mapping, cadastral and land registration authority)
- Lithuanian Maritime Safety Administration
- Maritime Administration of Latvia
- National Land Survey of Finland / Finnish Geospatial Research Institute
- SSPA Sweden AB
- Swedish Meteorological and Hydrological Institute
- Tallinn University of Technology
- Technical University of Denmark

### 2.2 Project activities

The FAMOS project focuses on surveying areas relevant for commercial shipping in the Baltic Sea according to the BSHC-HELCOM re-survey scheme. Furthermore, it serves as a platform for implementing the common

Baltic Sea chart datum as proposed by the BSHC Chart Datum Working Group. Specifically, the project activities are as follows:

### Activity 1: Hydrographic surveying

Hydrographic surveying of approx. 96 000 km<sup>2</sup> of areas important for commercial shipping in the Baltic Sea, and corresponding production of nautical charts. For the participating BSHC member states, the surveys follow the BSHC-HELCOM harmonised re-survey scheme as decided (latest) at the HELCOM Copenhagen Ministerial Meeting 2013. The BSHC-HELCOM scheme is available online at <http://www.sjofartsverket.se/helcom>.

### Activity 2: Harmonizing vertical datum / Vessel navigation for the future

- (1) Implementing a common geodetic vertical Baltic Sea chart reference level in line with the BSHC Chart Datum Working Group goals. This includes measurements of gravity during hydrographic surveys, verification of existing gravity data, and the computation of a new, more accurate geoid model.
- (2) Studies related to precision GNSS positioning at sea, with the aim of better UKC control and optimisation.

### Activity 3: Surveying infrastructure

Improvements of the surveying infrastructure in terms of survey boats and hydrographic equipment for the Baltic countries. The improved capacities are needed for these partners to achieve the goals set in the BSHC-HELCOM Scheme during later phases of the project.

### Activity 4: Data workflow from sounding to chart

Improve and streamline the workflow from Hydrographic survey of depth information to distribution of final nautical products. This includes the redesign of depth databases, procurement of new Chart Production Systems, studies of new IHO standards and the design of a Nautical SDI.

### Activity 5: Coordination and communication

Project coordination, communication and outreach.

## 2.3 EU co-financing from the CEF Transport programme

The first phase of the project, FAMOS Freja, receives EU co-financing of up to 11.9 MEUR from the CEF Transport programme (successor to the TEN-T programme). This is roughly one-third of the overall project costs of 33.9 MEUR for FAMOS Freja.

A similar project proposal requesting further 11.1 MEUR co-financing for the second phase, FAMOS Odin 2016-2018, has been submitted to the European Commission in February 2016. The funding decision is pending.

## 2.4 Operative work 2014-2015

**Activity 1 (hydrographic surveying):** The survey seasons 2014 and 2015 have been completed successfully with surveys of 8750 km<sup>2</sup> and 15820 km<sup>2</sup>, respectively. The 2016 surveying season is on-going with both project internal and externally procured resources.

**Activity 2 (vertical datum):** In subactivity 2.1, four gravity surveys have been conducted 2015:

- South of Bornholm (BKG, GFZ, BSH; dedicated gravity survey)
- Bothnian Sea (GFZ, FTA; dedicated gravity survey)
- Bothnian Sea (LM, DTU, SMA; piggy-back transit survey)
- Denmark (DTU, Royal Danish Navy, GST; piggy-back survey)

Work with databases, geoid modelling and Mean Sea Surface modelling has started. GNSS data processing is on-going. The chart datum change in Sweden, has started in the Northern Bay of Bothnia and the project is delivering according to plan. New official electronic charts have been published with the new chart datum,

Lantmäteriet has decided to procure a marine gravimeter for use primarily by the Swedish state. Procurement preparations are on-going as part of the FAMOS Odin project.

**Activity 3 (surveying infrastructure):** Smaller survey boats and other relevant equipment have been procured by the maritime administrations of Latvia and Estonia. The boats have been delivered in 2015 and 2016.

**Activity 4 (data workflow):** Various workflow and software upgrades have been performed by the relevant project partners. Most notably, Sweden procured a new Chart Production System (CARIS HPD), which is currently being implemented.

**Activity 5 (coordination and communications):** The project has been presented at relevant EU and maritime forums. The project website is available at <http://www.famosproject.eu/>.

### 3 What happens next, results? Operative work

**Activity 1:** Hydrographic surveying and chart production continue according to plan, i.e. what is specified in the proposal until 2016 and in the BSHC-HELCOM Scheme until 2020.

**Activity 2:** One gravity measurement campaign about to be started with German resources in the Southern Baltic. Three additional campaigns are planned to be conducted on Danish, Swedish and Estonian vessels during the field season 2016. Data processing and geoid modelling will continue. Sweden continues with their chart datum change project in the Bothnian Sea, successively working southwards along the coast.

As part of FAMOS Odin, a study on real time precision GNSS positioning at sea will be started 2016, led by the German Federal Agency for Cartography and Geodesy.

**Activity 3:** Putting into service of the new Estonian survey boat is the last task in activity 3, apart from minor equipment upgrades/procurements scheduled for 2016. Lithuania as a new project partner for the FAMOS Odin project will start with major upgrades of their survey vessel *Varuna*.

**Activity 4:** SMA continues with the new chart production system project. Other subactivities will continue, most notably the renewal of Danish and Finnish hydrographic/depth databases.

**Activity 5:** FAMOS Freja will end by the end of 2016, and project management will focus mostly on reporting towards the EU (interim financial report; final technical and

### The meeting is invited to

- Take note of this report.