

Baltic Sea Hydrographic Commission 21st Meeting

Agenda Item C1.2

FAMOS project report

2016-08-17

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) was submitted to the European Commission in February 2016.
- FAMOS Odin includes five new project partners, including the Lithuanian Maritime Safety (the 7th country represented in the consortium). This second project phase also extends the scope of some of the project activities.
- The FAMOS Odin proposal was evaluated positively, and the project will receive 11.1 MEUR in EU co-financing from the CEF Transport programme.
- Currently the FAMOS Odin Grant Agreement is being setup between the consortium (coordinated by SMA) and the European Commission.

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, SMA)
- Danish Geodata Agency (GST)
- Estonian Maritime Administration (EMA)
- Finnish Transport Agency (FTA)
- German Federal Agency for Cartography and Geodesy (BKG)
- German Federal Maritime and Hydrographic Agency (BSH)
- German Research Centre for Geosciences (GFZ)
- Lantmäteriet (the Swedish mapping, cadastral and land registration authority, LM)
- Lithuanian Maritime Safety Administration (LMSA)
- Maritime Administration of Latvia (MAL)
- National Land Survey of Finland / Finnish Geospatial Research Institute (FGI)
- SSPA Sweden AB
- Swedish Meteorological and Hydrological Institute (SMHI)
- Tallinn University of Technology (TUT)

- Technical University of Denmark (DTU)

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 and agreed upon within BSHC. Specifically, the project activities are as follows:

Activity 1: Hydrographic surveying

Hydrographic surveying of approx. 96 000 km² 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 (Baltic Sea Chart Datum 2000) 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.

The second phase of the project, FAMOS Odin, will receive further 11.1 MEUR in co-financing for the time 2016-2018. At present, the contract between the consortium and the Commission is being set up.

2.4 Operative work 2014-2015

Activity 1 (hydrographic surveying): The survey seasons 2014 and 2015 have been completed successfully with surveys of 8750 km² and 15820 km², respectively. The 2016 surveying season is on-going with both project

internal and externally procured resources. It is worth mentioning that FTA has finalized for the first time the full coverage, up-to-date hydrographic surveys in Finnish CAT I and II areas in May 2016, which means that their field surveying activities will not need further financing under the FAMOS Odin project.

Activity 2 (vertical datum): In sub-activity 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)

Two more surveys have been carried out in 2016 so far:

- North and west of Bornholm (BKG, GFZ, BSH; dedicated gravity survey)
- Bothnian Sea (GFZ, SMA, LM; piggy-back transit 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. An invitation to tender has been published and the procurement is expected to be completed before the end of 2016, as part of the FAMOS Odin project.

The 2016 Bornholm survey also served as a platform for GNSS related measurements as part of sub-activity 2.4 (real-time GNSS precision positioning at sea).

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/>. EU reporting for FAMOS Freja has become a major task, with one Action Status report submitted in Q2 2016 and the first financial report to be submitted in Q3. A project manager (half time) has been employed by SMA to strengthen the coordination team. FAMOS has been awarded the Flagship Project status under the EU Strategy for the Baltic Sea Region (policy area on maritime safety and security).

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 Re-Survey Scheme until 2020.

Activity 2: Two gravity measurement campaigns are planned to be conducted on Danish and Estonian vessels during the remaining 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 has been conducted, led by the German Federal Agency for Cartography and Geodesy. The evaluation of the results is currently on-going.

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 sub-activities 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 (final technical and financial report). For FAMOS Odin, the Grant Agreement with the Commission as well as a partnership agreement within the consortium will be set up. The overlap of FAMOS Freja and FAMOS Odin during 2016 causes significant work with the project management.

The meeting is invited to

- Take note of this report.
- Celebrate the continued financing for this important work under the umbrella of the BSHC.