

Baltic Sea Hydrographic Commission 23rd Meeting

Agenda Item C5

FAMOS project status report

2018-06-23

1 Summary

- The FAMOS project is on-going according to plan.
- The first phase of the project, FAMOS Freja (2014-2016) has been finished and approved.
- The second phase of the project, FAMOS Odin (2016-2018) receives almost 11 MEUR of EU co-financing from the CEF Transport programme. ASR 2018 approved.
- Operative work in all project activities has been on-going since 2014.
- FAMOS Odin includes five new project partners, including one from Lithuania (the 7th country represented in the consortium). This second project phase also extends the scope of some of the project activities, especially with regard to the Lithuanian involvement and work related to the Baltic Sea chart datum.
- There are some personnel changes in the coordinator's project management team at the Swedish Maritime Administration. As of 2018-03-01 Caroline Johansson has been appointed as communications officer and project administrator.

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, covered 2014-2016. The second phase, FAMOS Odin, is ongoing 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, new partner in FAMOS Odin)
- Maritime Administration of Latvia (MAL)
- National Land Survey of Finland / Finnish Geospatial Research Institute (FGI, new partner in FAMOS Odin)
- SSPA Sweden AB (new partner in FAMOS Odin)
- Swedish Meteorological and Hydrological Institute (SMHI, new partner in FAMOS Odin)
- Tallinn University of Technology (TUT, new partner in FAMOS Odin)

- 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 by the 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 in line with the BSHC Chart Datum Working Group goals (BSCD 2000). 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, received 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 up to 10.8 MEUR in co-financing during 2016-2018, for estimated total costs of 28,9 MEUR.

The project activities, exact goals, time line and detailed budget are agreed upon with the European Commission in "grant agreements". The grant agreement for FAMOS Odin was signed in October 2016.

2.4 Operative actions 2017-2018

Activity 1 (hydrographic surveying): The survey season 2017 have been completed successfully with surveys of 13317 km² under FAMOS Odin. The 2018 surveying season is on-going with both project internal and externally procured resources.

In 2018, SMA has increased procured additional surveys from the open market, covering extensive areas in the Swedish EEZ. The procured survey providers Clinton Marine Survey AB and MMT (Marin Mätteknik AB) are currently working on the contracts.

Activity 2 (vertical datum): In FAMOS Odin sub-activity 2.1, six shipborne gravity campaigns have been prepared, measured and computed.

Work with databases, geoid modelling and Mean Sea Surface modelling is on-going. GNSS data processing is on-going. The chart datum change in Sweden is progressing well. The chart datum change in Bay of Bothnia is completed, as well as approximately 35 percent of Sea of Bothnia. The project is somewhat delayed, as a consequence of the change of production system. Finland is progressing with their chart datum change as well, but are also experiencing som delays.

Activity 3 (surveying infrastructure): The procurement of major upgrades for the Lithuanian survey vessel *Varuna* has been completed. The delivery and installation of the upgrades was completed in the beginning of 2018. Over all activity 3 has been completed, with the exception of procurements regarding ROV's for EMA and MAL.

Activity 4 (data workflow): Various workflow and software upgrades have been performed by the relevant project partners. Most notably, the Swedish paper chart cartography has been migrated to the new system. FTA has implemented a new Depth Database System and procured the same Chart Production System (CARIS HPD) as SMA. MAL has migrated all survey data and procured a new chart production system (CARIS HPD).

Activity 5 (coordination and communications): The project has been presented at relevant EU and maritime forums. The final report for FAMOS Freja is approved, as well as FAMOS Odin ASR 2018. There have been personnel changes in SMA's project management. As of 2018-03-01 Caroline Johansson has been appointed as communications officer and project administrator.

3 What happens next, results? Operative work

Originally, there was the project MonaLisa, from which FAMOS and STM evolved. FAMOS and STM have worked with different focus areas, but as things stand, the work areas and benefits of the projects are very much in the same field. Work is in progress of how to interconnect the two projects. Indications from the commission encourages this unification. A project-partner workshop on the subject was held in Malmö March 7-9 2018. The project team aims for writing an application for a new CEF-call by the winter 2018-2019.

Activity 1: Hydrographic surveying and chart production continue according to plan, i.e. what is specified in the proposal until 2018 and in the BSHC-HELCOM Re-Survey Scheme until 2020. This includes surveys with the partners' own vessel resources, as well as surveys procured from the open market.

Activity 2: Gravity campaigns are planned to be conducted in German waters as well as another onboard-campaign on a Finnlines Ferry.

The chart datum change projects will continue in Sweden and Finland.

Activity 3: Procurement of an ROV for MAL is planned for 2018.

Activity 4: GST is the procurement phase of a new depth database. MAL is implementing the CARIS database fully for cartography and hydrographic production.

Activity 5: The project will be presented at relevant EU and maritime forums.

The meeting is invited to

- Take note of this report.