Chart Production System at the Swedish Hydrographic Office

(NHC58 action #8 cont'd)

Summary

The situation regarding the necessary need for renewal of the system for chart production at the Swedish HO (SHO) has previously been described in papers to NHC59 in Reykjavik, Iceland 2015 and to NHC60 in Stavanger, Norway 2016.

This paper describes the present status and outcome from the project in February 2017. Major milestones since the last report to NHC60 are described and some initial experiences from the project are discussed.

Background

It became evident for the SHO around 2011-2012 that major components of the system which has been in use for production of charts and ENCs (from approx. 1993) was approaching the end of its lifecycle. Our software supplier declared that there would be no further development of those components.

Procurement

A requirements specification was produced 2014-2015 and finalised in April 2015. A public open procurement was prepared and the request for proposals was announced in May 2015. We received two tenders from Caris and Esri respectively.

In October the Caris proposal was selected after a very tight race and the contract was signed in early November 2015.

Major steps and milestones in the implementation

After the report to NHC60 in April 2016 the following steps and actions were performed in accordance with the project plan. An important milestone in March 2016 was approval of the design specification for "the complete system" to be delivered within the project. The complete system should meet all requirements from our procurement and should be developed as an ordinary update of Caris HPD.

During the period March to June 2016 all relevant processes and instructions in our quality management system were reviewed and changed where necessary. This was considered a high priority task and consumed considerable resources. The most important configurations in Caris HPD were prepared in close cooperation with the supplier. Training for all staff that will operate the system was initiated and self-study tasks were given over the summer period.

The complete system was delivered and installed in August 2016. SHO performed a system acceptance test (SAT) of the delivered system. The number of errors identified during SAT were clearly manageable and nothing very serious did show up. Caris delivered an updated version in October and some testing efforts were repeated. The delivered system was approved for Production Start Up (PSU).

During September and October a comprehensive user training for all operators was organised in two separate groups and for three weeks each. There were two weeks training given by Caris staff and one additional week where all the changes in internal processes, routines and instructions were reviewed led by internal staff.

Production Start Up (PSU) with Caris HPD

The production and data maintenance in the old system was stopped September 30th 2016. During the two following weeks initially all Swedish ENC cells were imported in to Caris HPD followed by testing and quality assurance activities. During this period all critical new navigational information was communicated through navigational warnings.

From October 18th and two weeks forward a limited production started, important updates were handled and the first ENCs were published using Caris HPD.

From November 4th 2016 (official PSU) we have "full speed" in updates and publishing of EN/ER. "Full speed" meaning that all operators are working with the system but of course we realise that to really achieve full speed and a good skills level generally among operators it will take considerable time still.

The implementation project as described in the contract between Caris and the Swedish Maritime Administration was formally closed as planned February 9.

Cartography migration

The process of re-establishing all cartographic products such as paper charts, leisure craft charts, digital raster products and all other chart products and services has now started after a delay following the PSU. This is run as an internal project and the goal is that all official charts and leisure craft chart series will be recreated and produced from Caris HPD at the end of 2018.

The method chosen to recreate the cartographic products is a combination of automatic migration (developed by SHO and Caris jointly) and interactive editing following a **one-to-one approach** defined in the project. Guided by a raster backdrop from the old system the cartographic appearance is recreated to look the same as much as possible.

In the project some functionality to enable management and editing of cartographic data in seamless covers has been developed. This will enable more flexible output of cartographic products.

Some experiences gained

A first remark here is that this project is somewhat unusual in the fact that it delivered the required **result**, it delivered in **time** and within the original **budget**.

The transition period between shutting down old system and producing EN/ER in the new system had to be short. Internally we often described this as a "heart transplantation". Nothing major was allowed to go wrong, activities had to be done and timelines had to be kept.

We engaged an external consultant as project leader from the start of the procurement and all the way through the implementation project. We have evaluated this as one of the success factors. An experienced external project leader was able to organise and keep track of our resources with less consideration to internal history and relations.

The project team of internal resources was about 15 persons, comprising experienced users, systems management resources and IT experts. This team has worked hard and their devotion and commitment to their tasks is clearly also a success factor in the project. It must be noted that this also has reduced the available resources for normal day-to-day production and did put considerable strain on our organisation as a whole.

It is still too early for comprehensive experiences from a production and operational view. We have realised that the change (between old and new system) in data model for storage has resulted in data quality and consistency issues and we have allocated more resources than anticipated to solve such issues and we see that this is a one-time effort.

Action requested from NHC61

The NHC61 is invited to note this report.

The "New Champs" project was a part of FAMOS Freja and thereby;

Co-financed by the European Union
Connecting Europe Facility