Web-based Data Management System Supports Maritime Research

With their web-based data management system DSHIP, the German-based company Werum Software & Systems supports maritime research on board research vessels. As can be seen on the Instagram profile of the current climate research expedition MOSAiC in the North Polar Sea, research work on the high seas may be fascinating, but it is also extremely laborious, fragmented and highly complex. As they depend on various environmental conditions such as wind speed or water temperature, hardly any of the measurements taken can be repeated – a huge challenge for both the crew and the technical equipment.

Easy to Operate

Vast quantities of contextual data, such as the ship's position, the water depth and weather data, are acquired on board the research vessels to support the scientists in analysing and evaluating their research findings. The scientists can link this contextual data to the data that they acquire, producing additional evaluation options. The demands on the software that reads, collects and visualizes such data on board are accordingly high: the system must be absolutely reliable and easy to operate for any user, and must be able to go without any administrator for the whole expedition.

Werum Software & Systems has been providing such robust, easy-to-handle software solutions for over 20 years. Its first version was installed on the German research vessel *Meteor* back in 1997. Since then, many other research vessels have been equipped with DSHIP all over the globe, for example in South Korea, Scotland and Argentina.

Federal Office for Agriculture and Food

In Germany, DSHIP is presently running on four large German research vessels and a number of smaller ones and, as of recently, also on the fishery research vessels *Solea* and *Clupea* of the Federal Office for Agriculture and Food (BLE). When DSHIP was installed on the *Clupea* last summer, the system demonstrated another of its strong points: despite the many configuration options, its installation does not take much time – in the case of the *Clupea*, the period between order placement and acceptance was no more than four weeks.

Chief scientist of the Baltic International Trawl Survey with the *Solea*, Dr Andrés Velasco, scientific employee at the Thünen Institute for Baltic Sea Fisheries, was downright positive at the end of the expedition: "We are very glad we switched to DSHIP – the system runs absolutely reliably and is really easy to operate. The many new possibilities that we have now to acquire, visualize and evaluate the data from our expeditions are a tremendous boon."

Recording Measurement Data

DSHIP's latest versions are web-based so that any scientist can download the data they need on environmental conditions, travel route and many other parameters directly onto their computers and use them for their own research purposes – on board the ship or at the end of the expedition.

And which way is the wind blowing? "More and more ships, such as cruise liners or racing yachts, are starting to record measurement data for scientific use during their trips", Ralf Löwenberg, project manager for DSHIP on *Solea* and *Clupea*, explains. "This means that many new application possibilities are opening up for our system at the moment." Environmental observation as a whole, for maritime research as well as for more topical challenges like climate change, is advancing at a breathtaking pace and needs reliable software systems designed to safely collect, link, visualize and store data that are increasing in amount as well as complexity. And Werum is all set.

About Werum Software & Systems

With a workforce of over 120, Werum Software & Systems AG is one of the largest independent employers for IT professionals in Germany. For more than 50 years, Werum has been implementing sophisticated software and systems for customers all over the world, among them many renowned companies from the automotive and aerospace industry as well as scientific institutions and public authorities.

Werum's activities focus on the support of customer-specific processes in the core areas of test data and information management, earth observation, eGovernment and enterprise information management. The software solutions are based on platforms specially developed for these areas.

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