E-NAVIGATION REVOLUTION

Hydrographic Data Working Together With Mariners

The HQS Wellington at the Embankment, London, UK, was the stage for the conference â€˜e-Navigation Revolutionâ€™ that was held from 11-12 November 2014. As the name of the event implies, the delegates debated about various aspects of navigation using ECDIS. Although this is becoming compulsory, there are more movements requiring attention, such as unmanned autonomic ships, vulnerability of GNSS signals, chart updates and of course the interaction with hydrographic data.

The conference was chaired by the former UK Hydrographer Nick Lambert. He led the participants through an interesting list of speakers. There is much to say about human-machine interfaces and the technological aspects of autonomous shipping, as Kate Adamson concluded in her contribution. The connectivity will be increased and she believes that unmanned shipping may be the future, changing the business model and improving overall safety as humans are not optimally equipped for multitasking – which is required, especially in 'tricky' situations.

Peter Blackhurst reflected upon the increased need of data for navigation. Much of the information is subject to change, like tides, weather, navigational warnings, chart updates and software updates. With the of communication systems this can be on a ship in virtually real time. Some of this information is regulated while other types of communication are commercially interesting. All in all, additional information can increase safety of shipping but prioritisation needs to happen.

Jeppesen's John Klippen went into the interface between hardware and the navigational data providers – and sees ways to make this more user friendly by making changes to licensing and communication models. He was especially aware of the need to make updates automatic, these being chart updates, Notices to Mariners and weather information. By providing these updates as small files, download costs can be managed, thereby making up to date information available to more ships.

On the second day, Bob Cockshott made everyone aware of the danger of relying on GNSS signals as they are easy to jam or can be weakened by solar activity. This may lead to shorter or longer times and the position of a ship is displayed with reduced accuracy. The systems are not always able to detect this and issue a warning. His suggestion was to improve receiver design to avoid jamming and to give clear fault warnings. In addition, users should not be over-reliant on GNSS systems, augmenting their systems with other technologies such as eLoran.

Trinity House's Roger Barker gave a presentation on the changing maritime environment, with such obstacles as wind farms under construction and shoals that may move in the time. The question is – are the charts still accurate? Especially in the busy North Sea and the Channel this may be a challenge. Frequent surveying and communication about the changes to all navigators is essential, according to Mr Barker.

Wiliam Heaps warned all attendees not to take the data availability and quality of charts for granted. Survey data coverage is fine in the UK, however, only '10% of the seafloor has been surveyed by echo sounders at a resolution of 1 minute or better'. Especially in ports there is a need for additional hydrographic information and detailed bathymetry. He presented a case in Southampton where all parties involved could make all required data available on portable pilot units. In this case he discovered that there are many parties involved in the profession – and not always the obvious ones. Organisations active in leisure, and marine and land planners can also be stakeholders – as can developers of offshore energy and coastal recreational facilities. They all need to work together on the most optimal product.

A round-table discussion concluded the event. One of the conclusions was that there is still plenty of work to be done to meet the ECDIS implementation deadline in 2017. Another conclusion was that work needs to be done on data, communications, the interface and interactions between stakeholders. Conference delegates also agreed to form a Special Interest group on e-Navigation, which would be hosted by IMarEST. They were supportive of this concept, as this could reinforce the road towards further implementation and development of the technology.