

## Development and standardization of high resolution bathymetric products

### 1. Background

In the light of the limited areas available for navigational purposes, especially waterways, the steadily growing traffic and the high accuracy in navigation nowadays, a more efficient use of these limited areas is essential. In this regard Germany sees a growing need for detailed bathymetric information. The high-resolution navigational surface has a high potential to be used for navigation assistance and traffic management at the seaward harbor approach and port areas. Modern survey systems are capable of collecting huge amounts of bathymetric data in a short time with very high accuracy. This information can be used for the production of high density ENC's containing depth contours at decimeter intervals.

Standard ENC's depict a limited range of contour lines in defined 5, 10 (15) und 20 meter steps similar to paper charts. These contour lines are created to support common navigational practice but do not fully reflect the detailed topographic situation. For special applications like pilotage and vessel traffic services the density of these contours is not sufficient. Private service providers have identified this gap and started the provision of an additional bathymetric layer in a S-57 alike but non-standardized format named bENC (bathymetric ENC). The provided data are derived from most recent local multibeam surveys and are disseminated via internet for local clients. Those clients are equipped with devices, e.g. Portable Pilot Units (PPU) which display software is adapted to the specifics of bENC. PPU's combine regular ENC's of the subject area with the received additional bathymetric layer. The software suppresses the display of [depth soundings and] contour lines coded within the ENC and load up the bENC content instead. The depth information is portrayed by means of a specific color scheme which expands the designated ECDIS color set for depth areas. Due to its nature as a layer of a content limited to bathymetric lines and areas, the bENC data sets are relatively easy to produce in high – up to weekly - frequency and ready for wireless transfer by means of small bandwidth infrastructure.



The picture above shows the bENC as a merge of ENC and ABL

## **2. Proposal**

The bENC solution enjoys growing request and popularity in many pilotage areas of the world. However, since bENC comes as an apparently proprietary format, numerous potential user communities are hesitating to make regular use of it. The same effect can be observed on the producer side. National HOs are reluctant to invest in an enhancement of its production environment which is focused on a non-standardized data product. The S-100 framework will surely offer elegant technical solutions for this task in mid-term, but taken the fact, that the S-100 based environment of compliant product specifications, S-100 compliant data production software and S-100 compliant end users devices will not be available within the next three years to come, a solution based on well introduced S-57/S-52 standards seems the far more feasible option.

### **The Commission is invited to**

- take note of the report;
- discuss the general usefulness of an IHO S57/S52 ABL Standard;
- decide about further steps to proceed with this issue.