

Paper for Consideration by NSHC

Harmonization of Sounding datum

Submitted by:	Germany (BSH)
Executive Summary:	Harmonization of different Sounding datum in ENC's of the North Sea region
Related Documents:	S-57 ENC Product Specification
Related Projects:	Future S-101, S-102, S-104, S-111 products

Introduction / Background

- a. The activities of the TWG to implement a uniform chart datum (based on LAT) are well advanced. The differences in national reference surfaces at the international boundaries are largely below the specified norm of 50% of the maximum Total Vertical Uncertainty (TVU) as defined in S44 (Order 1a).
- b. In German waters a distinction is currently made between a reference system for the offshore area and the tidally influenced rivers. In German ENC's, the Chart Datum for the offshore area is labelled "LAT" and the Chart Datum for the rivers is labelled "approximate LAT". This is implemented in such a way that the sounding datum (SDAT) = 23 (LAT) is always assigned uniformly in the ENC header and as local meta-objects M_SDAT with the attribute value for the vertical datum (VERDAT) = 10 (approximate LAT) are defined in the tidally influenced rivers.

Analysis/Discussion

- a. The results of the TWG are not yet reflected in the allocation of the sounding datum in ENC's. The sounding datum (SDAT) in the Data Set Parameter field (DSPM) in ENC's of the North Sea region is currently not assigned uniformly among the North Sea rim. It differs between LAT and approximated LAT.
- b. The boundary between the two reference systems is an artificial line that expresses both the different administrative responsibilities and the partially different approaches to define the chart datum. The provision of the M_SDAT object to reflect this circumstance provides no additional value to the chart user.

The mariners do not get uniform information of the used vertical reference system, neither in the ENC header nor in the ENC meta information.

Conclusions

- a. In line with the further investigation and aiming reduction of differences between the provided Chart Datums along the borders, and intending to improve the information provision for the mariners, we propose a standardized assignment of the sounding datum (SDAT) in all ENC's of the North Sea. The proposed value for SDAT should be approximate lowest astronomical tide (10).
- b. Within the ENC's, i.e. along the boundary between the offshore area and the tidal rivers, no further distinction of vertical reference systems is requested. Approximate LAT also applies uniformly here.

Recommendations

- Adjustment of all future New Editions of S-57 ENC's in the North Sea with SDAT = 10 (approximate LAT) in the Data Set Parameter field (DSPM)
- Removal of all additional M_SDAT
- Publishing of all concerning S-1XX data products in accordance with this uniform reference system

Justification and Impacts

We believe that this uniform value not only reflects the current state of Chart Datum as closely as possible, it provides in particular the user with harmonized information. Additionally, it creates a good basis for providing all future S-1XX data products consistently.

Action Required

The NSHC is invited to (if TWG and NSICCWG are not able to manage the action items within their remit to achieve the proposed sounding datum harmonisation):

- a. discuss the proposal

- b. introduce the uniform sounding datum = 10 (approximate lowest astronomical tide) for all ENC's in the North Sea region
- c. establish this sounding datum for all future S-101 and S-102 data products as mandatory

The TWG is invited to:

- a. continue its activities to further reduce the differences in reference surfaces
- b. discuss and enforce this uniform sounding datum in future S-104 and S-111 data products

The NSICCWG is invited to:

- a. agree on proposed uniform sounding datum
- b. specify the transition steps to implement the proposed harmonisation in existing S-57 ENC
- c. ensure consistent provision of the suggested sounding datum in future S-101 ENC