Proposal to investigate a point distance approach for the bathymetric coverage requirement

Submitted by Germany and Finland

1. Context

IHO Publication S-44 Edition 6.0.0 introduced the new Bathymetric Coverage (BC) requirement, expressing as a percentage the extent to which an area is surveyed using a systematic method of measuring the depth. Since its inception, the BC requirement has proven difficult to conjugate with existing hydrographic survey specifications. Concerns addressed are related to the interpretation and practical usage and of the BC requirement, as well as its relationship to the Feature Detection (FD) requirement. Moreover, S-44 Edition 6.0.0 did not sufficiently detail how data from non-acoustic measurement techniques can be qualified using the BC requirement.

The most stringent orders of S-44 are driven by the FD requirement, which in turn warrants a high fidelity of bathymetric representation. The ability to detect a feature is itself quantifiable by the point density (or the square root of its inverse, i.e. point distance) and limited by the spatial resolution of the measurement sensor. The less stringent orders of S-44 should be driven by the requirement of a minimum fidelity of bathymetric representation for the intended purpose. Here again, the point distance is a simple and effective metric.

2. Proposal

We propose to investigate if a point distance approach could be adopted in S-44 for the BC requirement. This would eliminate any doubt about interpretation, increase the practical usage of the BC requirement and allow for easy adaptation to new measurement techniques in hydrography.

3. Actions

The HSWG Chairing committee is requested to:

1. Take knowledge of the current proposal.
2. Circulate the proposal to all HSWG members.
3. Setup an online meeting on September 13 2023 at 13:00 (CET) during which HSWG members are invited to share their views on the current proposal.
4. Consider the need for a new HSWG sub Work Group on bathymetric coverage.