

**Updated Paper for Consideration by S-101PT9****Vertical Clearance Alarms & Indications**

<b>Submitted by:</b>	UK
<b>Executive Summary:</b>	Introduction of new rules for ECDIS to alert and provide indications within S-101 ENC's for vertical clearances based on an air draft context parameter.
<b>Related Documents:</b>	IHO Annex A to S-52 – ECDIS Presentation Library Ed 4.0.3 IMO Performance Standard for ECDIS MSC.232(82)
<b>Related Projects:</b>	S-100 & S-101 PT SG

**Introduction / Background**

1. Currently in S-52 section 10.5.9, ECDIS generates a warning and alarm for vessels crossing or navigating close to their pre-set safety contour/depth. The ECDIS will also increase the line weight of their safety contour to visually alert the mariner and try to prevent a grounding. When it comes to navigating under vertical clearances however (BRIDGE, CBLOHD, PIPOHD, CONVYR, CRANES, GATCON) this functionality doesn't exist and is covered by a general visual indication.
2. The purpose of this paper is to establish whether an alert like that created by a safety contour, would increase the safety of vertical clearance hazards. This would be a logical extension of the safety contour concept and would reuse the content already in place for S-101 ENC's.

**Analysis/Discussion**

3. The S-57 UoOC, Attribute Catalogue and S-58 Validations have rules for capturing VERACC (vertical accuracy), VERCLR (vertical clearance), VERCCL (vertical clearance, closed), VERCOP (vertical clearance, open) and VERCSEA (vertical clearance safe), within ENC's. Currently the presentation and alerts (catalogue) within ECDIS do not fully utilise these attributes to their full potential. There are some ECDIS OEM's who already monitor the safety of overhead clearances in their "Look-Ahead" route monitoring.
4. S-101 provides us with the opportunity to embed this improved safety measure within ECDIS, making the functionality consistent for mariners. This future improvement will require inclusion in IMO ECDIS performance standard MSC.232(82), IEC 61174 and S-164.
5. It would also be prudent to ensure data producers are encoding these attributes now, so that S-57 ENC's can be converted successfully into S-101 during the dual fuel transition period.

6. In future the inclusion of tidal height information may also allow this information to be applied, but this is considered to be out of scope at this stage.

### **Recommendation**

7. The recommendation is for a new rule to be introduced to alert and indicate mariners of overhead obstructions based on their air draft. Amendments will have to be made to the Portrayal Catalogue to support this “air draft” parameter, and a new lookup table entry created within S-52 for this new parameter to be displayed.

8. The introduction of this rule should be postponed for S-101 ENC's after the dual fuel transition is complete to ensure there is no excess effort changing/maintaining the old standards during the transition period and ensures functionality is consistent. This will also avoid potential confusion of S-57 and S-101 having different alerts and indications when used alongside each other.

9. The IHO's recent submission to IMO (Sub-Committee on Navigation, Communications and Search and Rescue (NCSR), 9th session, 21-30 June 2022) did not include changes to Alerts and Indications in its revision of ECDIS Guidance and Performance Standards regarding S-101.

### **Action Required of S-101 PT**

10. The S-101PT is invited to:

- 1) **Agree** to adding improved S-101 vertical Clearance Alerts and Indications Post Dual Fuel.
- 2) **Inform** S-100 working group of the requirement to inform the IMO of Product Specification changes.
- 3) **Instruct** the S-101 Portrayal Sub Working Group to investigate the above recommendations.