

## Paper for Consideration by ENCWG

### Amendments to the application of SCAMIN on key topographical features.

<b>Submitted by:</b>	UK Hydrographic Office
<b>Executive Summary:</b>	Topographic enhancements, including reprioritisation of some S57 land features within the SCAMIN rule file.
<b>Related Documents:</b>	
<b>Related Projects:</b>	S-101

#### Introduction / Background:

- Customer feedback from several key users within the maritime industry highlighted that key topographic detail, disappeared quickly from view when zooming out. This prevents the user from gathering key situational awareness information and hampers the use of other forms of navigation when GNSS is denied.

#### Analysis / Discussion:

- In S57, it is possible to move key topographic features between SCAMIN steps within the SCAMIN rule file which is applied during ENC creation.
- S-57 UOC states “Producers should be prepared to deviate from the step values specified when the significance of the feature dictates”.
- Linear LNDELV were identified from mariner feedback as a key topographic feature that needed to remain in view to provide improved situational awareness in the ECDIS.
- It was identified that moving LNDELV up one SCAMIN step may not resolve the widely reported issue as it still continues to disappear too soon from the ECDIS display.
- To preserve the granularity of the topographic information provided, other features were identified for application of the improved SCAMIN values. These included CTRPNT, SLOTOP and SLOGRD, to ensure land contouring remained seamless.

#### Options:

- Move LNDELV, CTRPNT, SLOTOP and SLOGRD to SCAMIN step 3
- UKHO Considered moving just LNDELV up two SCAMIN steps, to step 3 (see annex C) however the contours were broken in the absence of CTRPNT, SLOTOP and SLOGRD).
- All options pass S-58 checks with no observed issues.

#### Conclusions:

- Test-Data to trail three potential scenarios has been created by the UKHO, a summary of the outcomes is listed below:
  - LNDELV are removed at the same time as conspicuous LNDMRK features.
  - LNDELV stay on the display a lot longer than they currently do.
  - CTRPNT remained on SCAMIN step 1 and are therefore cleared from the display earlier than LNDELV, creating gaps in the contours. It was decided to apply the same SCAMIN value as LNDELV to ensure the features are seamless.
  - SLOTOP and SLOGRD also remained on SCAMIN step 1 and therefore cleared from the display earlier than LNDELV. It was decided to apply the same SCAMIN value as LNDELV, to ensure the representation was consistent.
  - Key topographic detailed stayed in view whilst transiting onto smaller scale ENC coverage, providing the mariner with a constant and consistent view of

the topographic detail.

**Recommendations:**

- Apply higher SCAMIN values to key topographic features, including LNDELV, CTRPNT, SLOTOP and SLOGRD.
- Move LNDELV, CTRPNT, SLOTOP and SLOGRD to SCAMIN step 3.
- The new SCAMIN rule file can be applied on every update and new cell created by the producer nation.

**Justification and Impacts:**

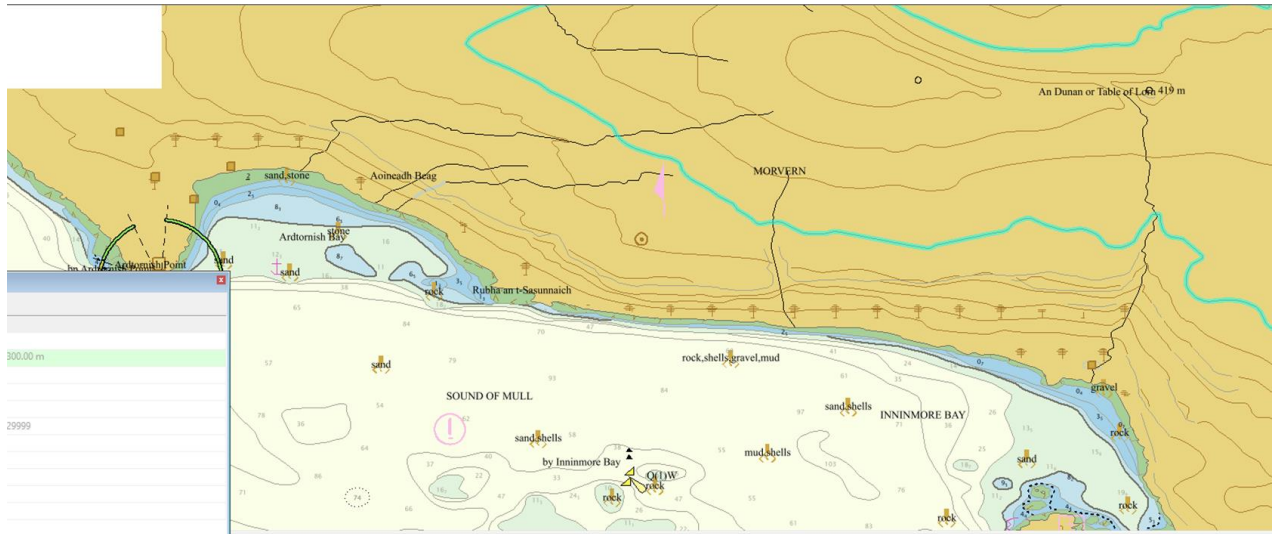
- Mariners expect a consistent and uniform representation of topography throughout ENC's from different producing authorities.
- The triangulation points and boundary marks are mapped to S-101 as Landmarks with new Category of Landmark values to cater for these features. Other features will not be mapped across to S-101 and will be lost. We will need to check these features are captured in the best way as part of the data prep before we convert to S-101

**Action required of ENCWG:**

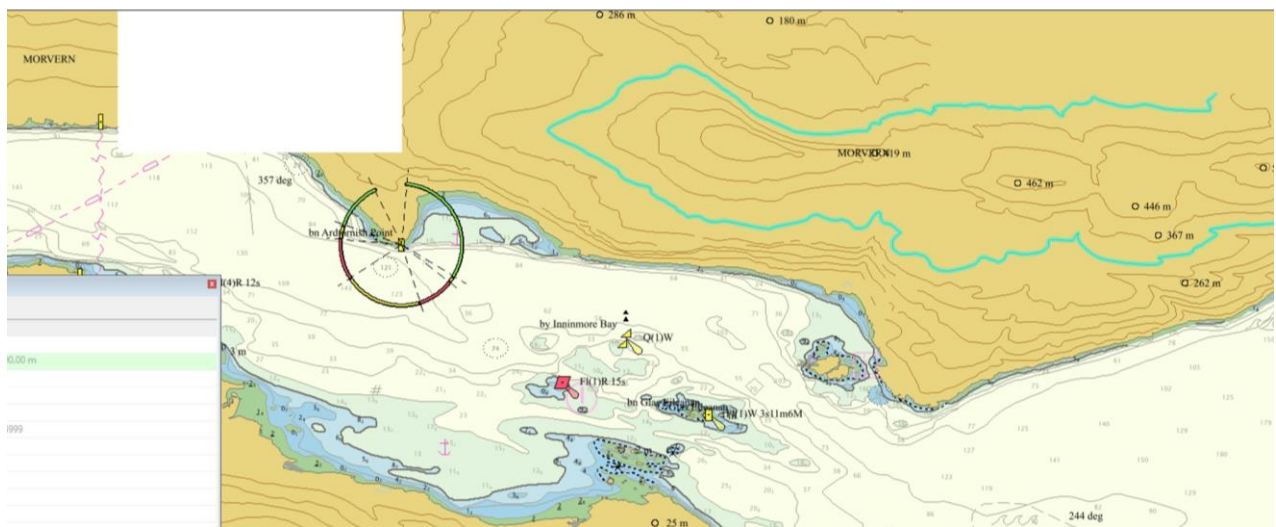
The ENCWG is invited to:

- a. Note this paper and ongoing discussion.
- b. Explore whether other HOs have had similar feedback from mariners regarding topographic features that have led to SCAMIN value changes.
- c. Consider changing the S-57 UOC step values in 2.2.7.1 recommendation table for LNDELV, CTRPNT, SLOTOP and SLOGRD.

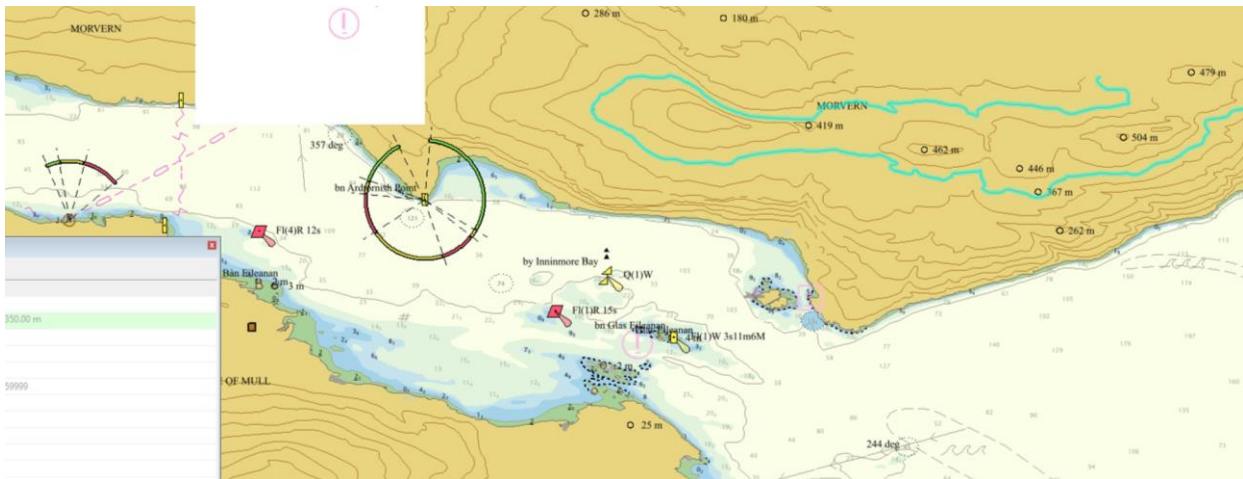
Annex A: LNDELV – Zoom set at 1:21,029.



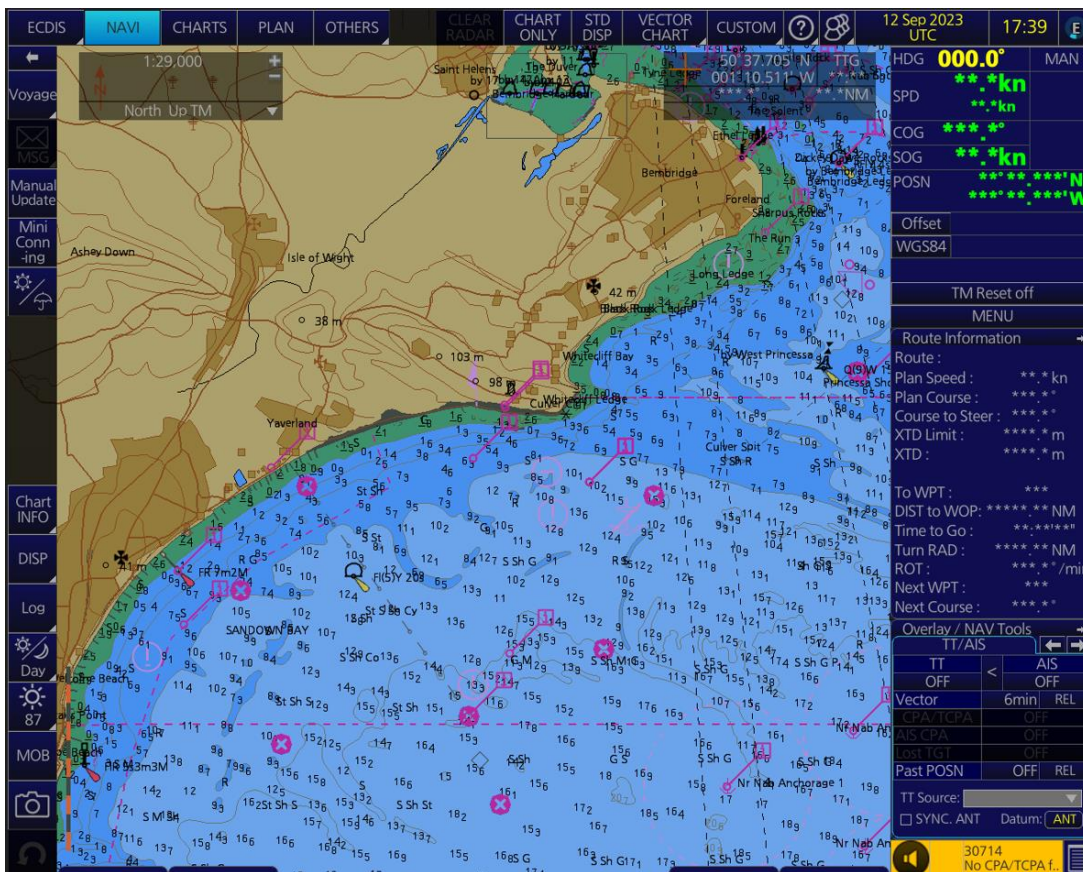
Annex B: LNDELV – zoom set at 1:43,606



Annex C LNDELV – Zoom set at 1:52,328.

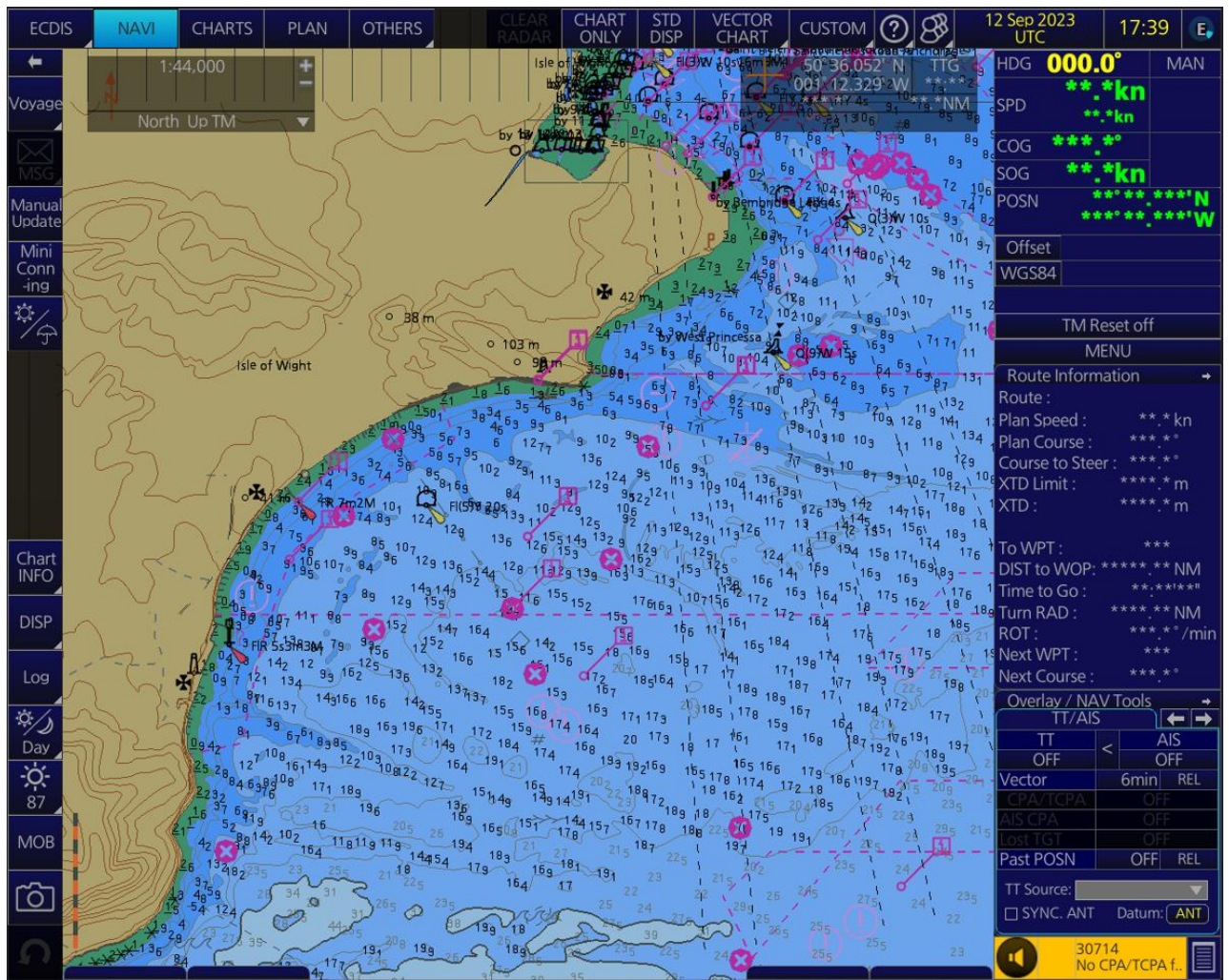


**New UKGO gridded ENC's around Southampton**



Screen shot taken at 1:29 000, showing all of the enhanced topography.





Screenshot of amended SCAMIN values showing a reduced amount of topographic detail but with LNDELV, SLOGRD and SLOTOP all in view at a scale of 1:44 000