S-102 Bathymetric Surface in ‘S-57 ECDIS’

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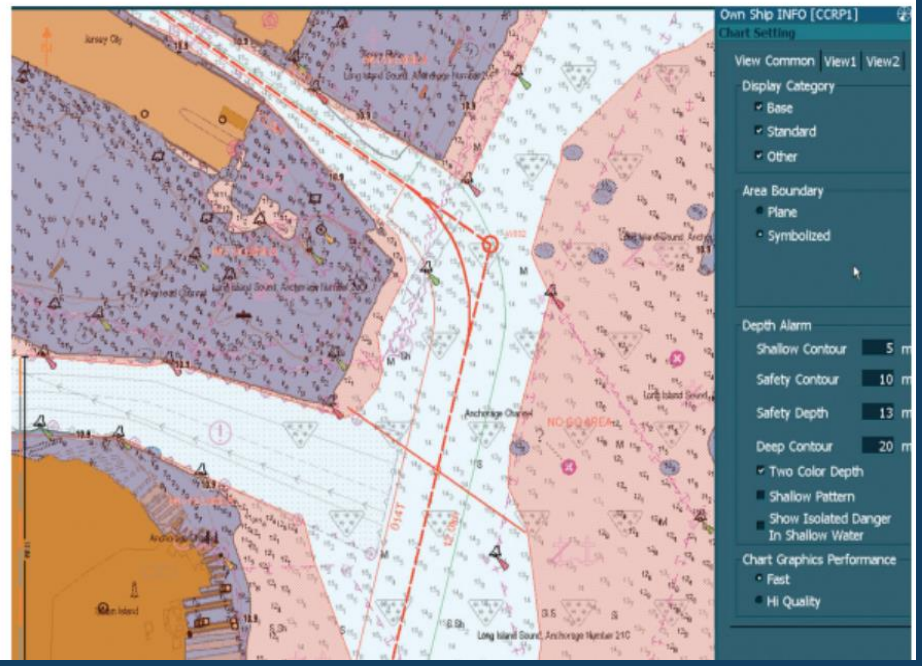
Background

- ECDIS community expresses dissatisfaction with low-resolution bathymetry (5-10-20 m)
- Introduction of HD ENCs has not yet resulted in any significant coverage
- Some have already made clear that they have no intention of producing HD ENCs
- ECDIS users are forced to draw No-Go lines manually

Disadvantages

- Procedure for setting depth alarm settings (safety depth, safety contour) is more complicated than the procedure in Workaround #1
- Area portrayed as safe (area outside the safety contour) does not correspond to the reality.
- Safety contour alarm will not sound at the proper depth but will sound at a later stage.



Source: Intertanko

S-102 Data Availability & Technology

- S-102 data is available already
- Use of S-102 together with S-57 is technologically possible, as is shown by a variety of **commercially available** PPU and other ECS applications
- Quote*: "*There is no need for industry to wait for the final implementation of an S-101 ENC enabled ECDIS. Additional S-1xx products can be used in existing systems with upgrades to software for those clients who wish to use them.*"
- It is questionable whether this is in line with current ECDIS regulations (may work with simple overlays), but what about alert functions, etc.
- Consequently, mariners must wait until ECDIS performance standards have been updated to cater for S-100.

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Roadmap for the S-100 Implementation Decade (2020 – 2030)

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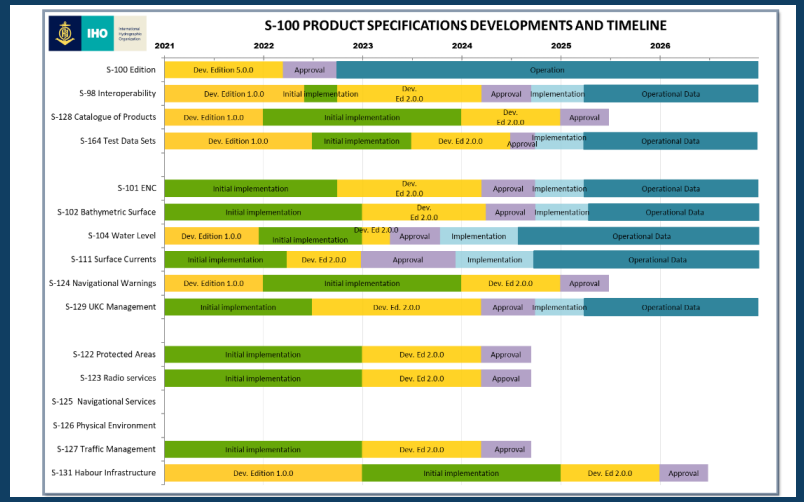
S-100 Implementation Decade

- S-100 Implementation Decade activities are making good progress but have not reached sufficient level of maturity to be available to the SOLAS shipping market any time soon
- Risk: Shipping companies will wait until the very last moment for the existing fleet, since safety policy, equipment, training (and more) needs to be changed
- If S-100 introduction does not look convincing to shipping industry (incl. low cost, not much training, not much hassle, reliable, etc.), not much enthusiasm can be expected
- Presentation Library 4.0 experience showed how time-consuming the roll-out was



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Revision of ECDIS PS With S-100 in Mind

- Necessary changes of normative standard for Dual Fuel ECDIS need to be completed - specifically a **combination** of:
  - MSC 232.(82) revision
  - IEC 61174 Testing standard revision
  - S-98 and other S-100 IHO standards

- According to Roadmap for the S-100 Implementation Decade (2020 – 2030), Annex 1, the revised ECDIS PS will be in force on 1 July 2025

- That would mean no significant commercial market usage **before 2030 on SOLAS ships** (due to transition period)

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Proposal – Use of S-102 Data in ‘S-57 ECDIS’

- Enabling an interim Dual Fuel ECDIS by **amending the S-52 and S-64 standards** and allowing **use of S-102 data in combination with S-57**
- With this, the current ECDIS performance standard (IEC 61174) **can stay as it is;** the industry would have the possibility to use a type-approved ECDIS but also use the value-added information sooner than currently scheduled
- This **interim step** will create early market acceptance and confidence in the new S-100 services; it will also provide safety benefits during voyage planning and voyage execution, where data is already available

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Proposed interim step

Current ECDIS

MSC 232.(82)
IEC61174:2015

S-52 6.1.1
S-64 3.0.3

Products supported
S-57 / S-63
S-61

interim DF ECDIS

MSC 232.(82)
IEC61174:2015

S-52 Annex
(Option for *S-102*)
S-64 Annex
(Option for *S-102*)

Products supported
S-57 / S-63
S-61

S-102

DF S-100 ECDIS

New IMO Res.
New IEC61174:202X

S-98
S-1XX
S-164

Products supported
S-57 / S-63 /S-101 –DF
S-102, S-104, S-124…

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Amendments Covered by S-52 Annex

- **Allow ENCs to be overlaid/interleaved/displaced by bathymetric data.**

  Modify all paragraphs that prevent use of data other than ENC.

- **As a minimum, only grid cell colouring is required. Generation of depth contours and soundings is optional.**

  Define new symbology for grids (e.g., grid cell colouring).

- **Automatic safety-contour generation required for display only (not for anti-grounding).**

  Define simple algorithm for contour creation.

- **Contours and spot soundings from ENCs must be suppressed within S-102 coverage.**

  Define combined display of ENCs and S-102 (e.g. display layers, priorities).

- **Specify the sequence of precedence for the data.**

  Define rules for pick report, anti-grounding, depth alarms.

  Define which dataset to use in case of overlapping data sets (what data is 'best').

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Amendments Covered by S-64 Annex

- Create test data sets (S-57 and S-102).
- Create test specifications for import of S-102.
- Create test specifications for combined (S-57 & S-102) portrayal, pick reports, alert generation.
- Create screen dumps (plots) for combined (S-57 & S-102) portrayal tests.

Action Required of ENC WG

- discuss this proposal
- endorse this proposal in order for it to be formally submitted to HSSC
- note SevenCs' willingness to get involved in the activities of such a work item