Dual Fuel ECDIS & S-100 Implementation

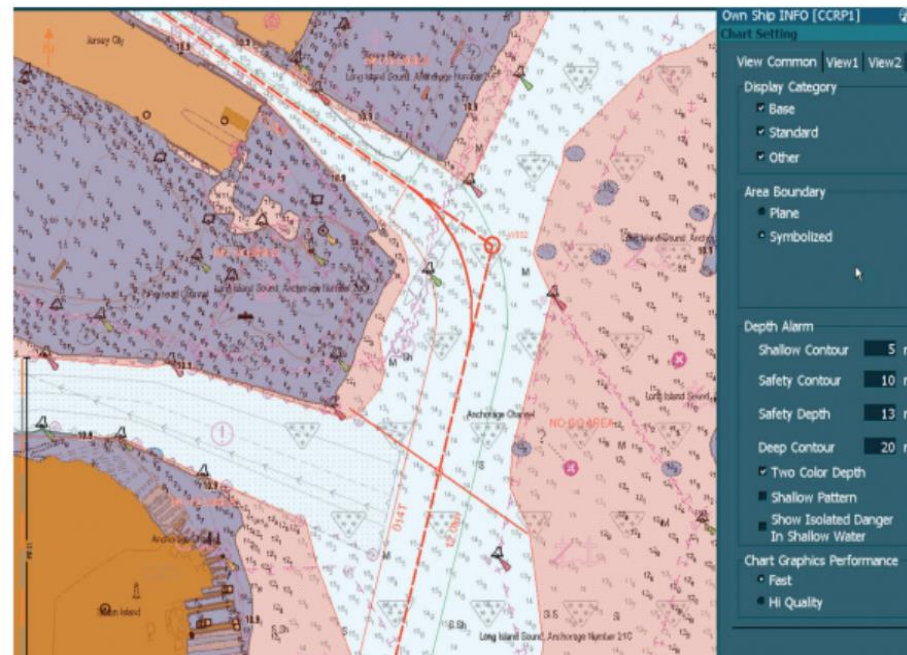**S-102 Bathymetric Surface in 'S-57 ECDIS'**

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Presented by Friedhelm Moggert-Kägeler at the IHO S-100WG6

Background

- ECDIS community suffers from low resolution bathymetry (5-10-20 m)

- Introduction of HD ENCs unfortunately has not resulted in any significant coverage

- ECDIS Users are forced to draw No Go lines manually

Source: Intertanko
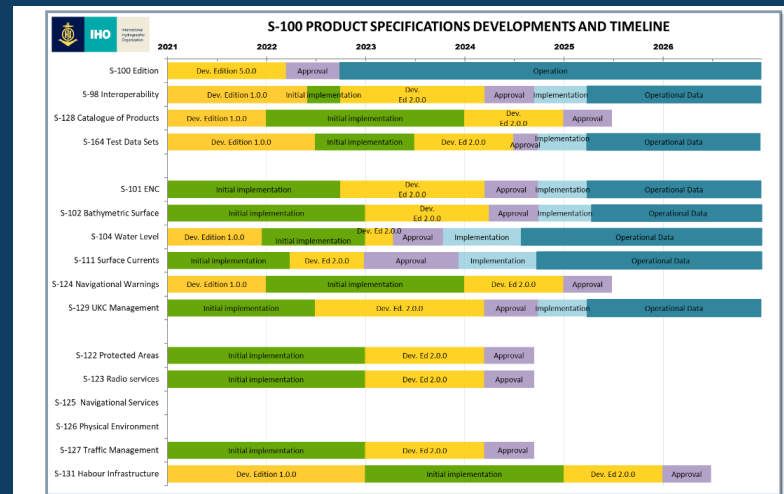
S-102 Data availability & Technology

- S-102 data is available already and counting

- S-102 use together with S-57 is technologically possible, which a variety of **commercially available** PPU and other ECS applications shows

- 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.*"

- Questionable if this is in line with current ECDIS regulations (may work with simple overlays), but what about alert functions etc.

- Consequently, mariners have to 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)

SevenCs

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 anytime soon

- Risk: Shipping companies will wait until the very last moment for the existing fleet, since Safety Policy, Equipment, Training…. 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

Revision of ECDIS PS

- Necessary normative standard changes 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 1. July 2025

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

Proposed interim step

Current ECDIS	interim DF ECDIS	DF S-100 ECDIS
MSC 232.(82) IEC61174:2015	MSC 232.(82) IEC61174:2015	New IMO Res. New IEC61174:202X
S-52 6.1.1 S-64 3.0.3	**S-52 Annex (Option for _S-102_) S-64 Annex (Option for _S-102_)**	S-98 S-1XX S-164
Products supported S-57 / S-63 S-61	Products supported S-57 / S-63 S-61 S-102	Products supported S-57 / S-63 /S-101 –DF S-102, S-104, S-124...

Proposal

- Enabling an interim Dual Fuel ECDIS by **amending the S-52 standard** and allow to **use S-102 data in combination with S-57**

- With this, the current ECDIS Performance standard (IEC 61174) **can stay as is** and the industry would have the possibility to use a type approved ECDIS but also using the value-added information sooner than currently scheduled

- This **interim step** will create market acceptance and confidence of the new S-100 services early and will provide safety benefits during Voyage Planning and execution where data is already available

SevenCs

Amendments covered by S-52 Annex

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

  Modify all paragraphs preventing other data than ENC to be used.

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

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

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

  Define simple algorithm for contour creation.

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

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

- **Specify precedence of 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").

SevenCs

Amendments covered by S-64 Annex

- Create test data sets (S-57 and S-102).

- Create test specifications for S-102 import.

- Create test specifications for combined (S-57 & S-102) portrayal, pick reports, alert generation.

- Create screendumps (plots) for combined (S-57 & S-102) portrayal tests.

Action Required of S-100 WG

- discuss this proposal

- endorse this proposal in order for it to be formally submitted to HSSC

- seek HSSC approval for this proposal

- note SevenCs' willingness to get involved in the activities of such a work item