S-100 Test Strategy Meeting 8

Video Conference Meeting

2 March (13:00 to 15:00 CET, UTC+1)

3 March (13:00 to 15:00 CET, UTC+1)

4 March (13:00 to 15:00 CET, UTC+1)

Chair: Julia Powell (USA)
Vice-Chair: Elizabeth Hahessy (Denmark)
Secretary: Yong Baek (IHO Secretariat)

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MEETING PROTOCOL

Meeting participants are kindly requested to note the following meeting protocols;

- Please keep your camera and microphone turned "**off**" if you are not talking or presenting.
- If you want to make an intervention, **please turn your camera and microphone on and raise (and wave) your hand** to indicate that you wish to speak. (Please turn your camera and microphone off when finished)
- Don't forget to turn your microphone **"on"** before speaking, and **"off"** when finished.
- Please use the **"Chat"** function to communicate any text information to the meeting. Chat supports messages to the entire meeting and to individual participants.
- If you have problems connecting using Firefox or other browser – please try using Chrome.
- The VTC is recording with your consent. Please inform me if you against it.

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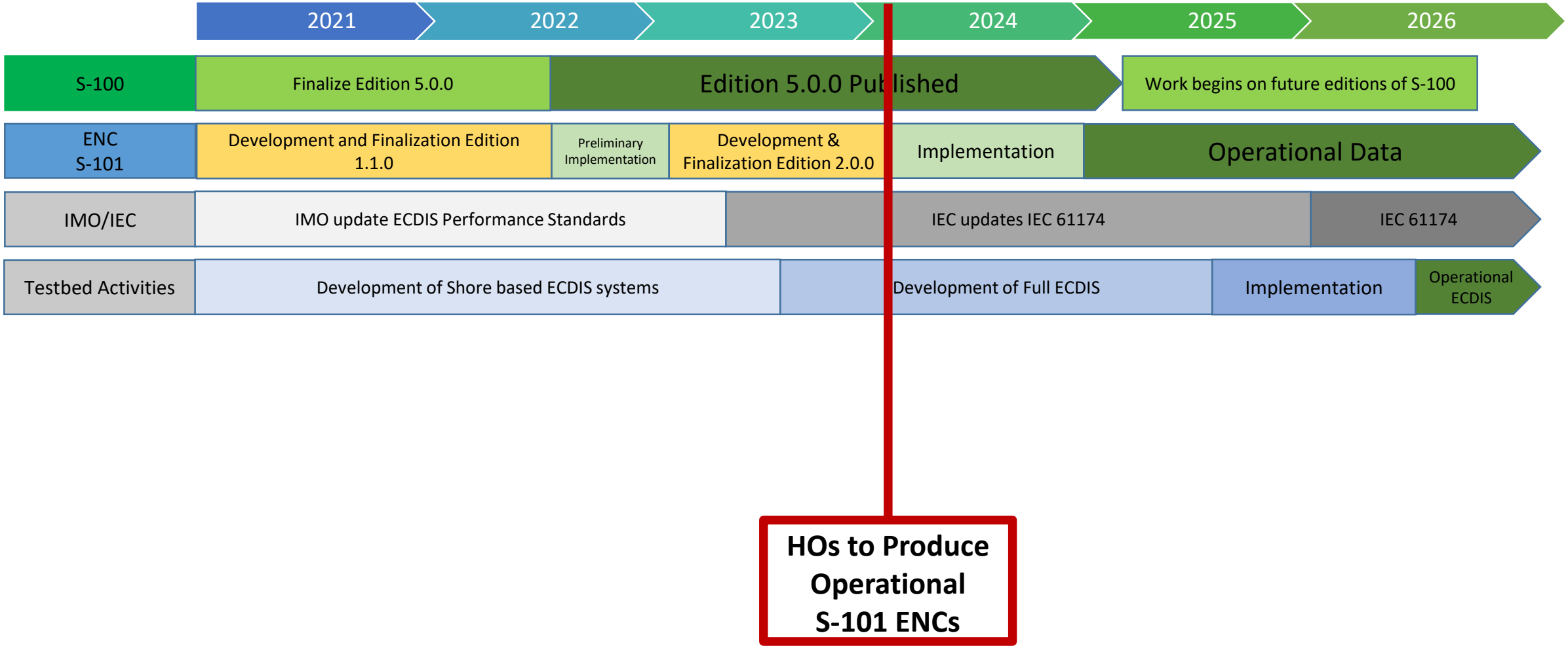
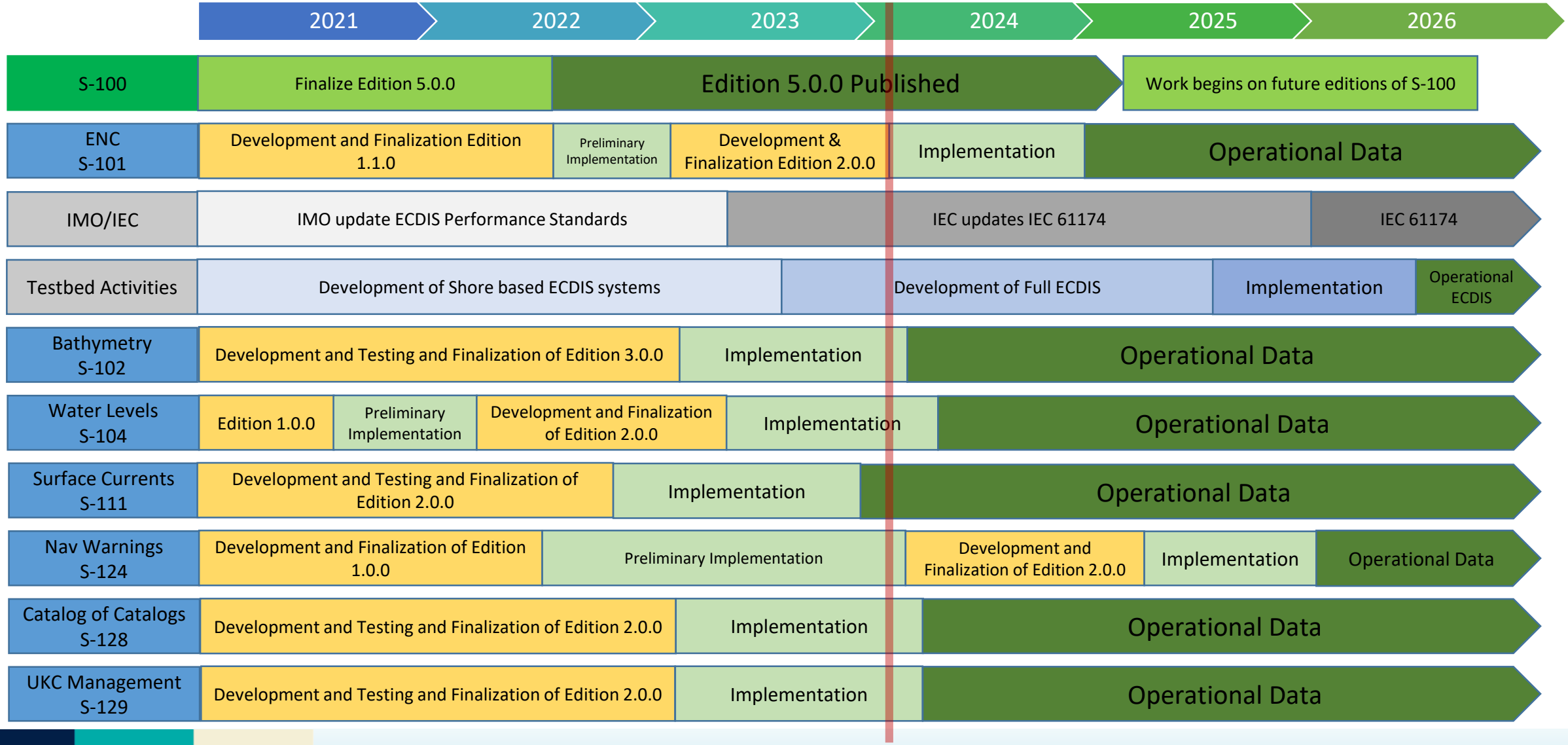
MEETING OBJECTIVES

- Consider and discuss major comments from the S-98 review and agree to a way forward for remaining comment adjudication
- Overview of ECDIS-DF and creation of a governance documents
- Consider technical proposals for S-100 Edition 5.0.0

S-100 Product Specifications developments and Timeline



S-100 Product Specifications developments and Timeline



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S-98 STATUS

- S100WG5 Action 5.1
  - *Prepare a new redline version of S-98, that moves the abstract parts of S-98 into S-100 (part 16) and realign S-98 content so as to provide an interoperability implementation. The new Part 16 will include the UML models and descriptive text on how to create an interoperability catalogue...*
- Completed in August 2020 and then sent to the entire working group + NIPWG and TWCLWG for review and comment
  - S-98 – 31 pages of comments
  - S-100 Part 16 – 17 pages of comments

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S-98 WAY FORWARD

- Difficult to adjudicate in a large meeting
- Several comments have been identified that require wide group discussion.
  - Tide adjustment
  - SENC distribution
- Recommend that the rest of the comments dealt with a small group of experts over a series of VTC’s

S-98 COMMENTS FOR DISCUSSION

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- Comment from Furuno C-5.1 g)

Tidal and water level adjustments

This is a serious issue. From maritime industry point of view, it is very difficult to justify investments in the development of S-100 compliant ECDIS and investments to any onboard retrofit of S-100 based ECDIS, if the end result is the same as with S-57 ENC charts.

The drafted specification in Clause C-5.1 g) will lock the functionality of S-100 based ECDIS to the same level as today is possible with S-57 based ECDIS.

It is well known that IMO SOLAS rule for voyage planning (IMO Assembly resolution A.893(21) year 2000) require use of current and tidal atlases and tide tables. At the date of publishing of the still valid IMO rule only printed books or their electronic facsimile copies were available. Today, 20 years later, it is well known that S-100 based products: S-102, S-104 and S-111 are planned to provide electronic alternatives for the IMO requirement of “current and tidal atlases and tide tables”. Therefore, now is the time to describe how ECDIS shall be able to manage the combination of S-101, S-102, S-104 and S-111 to facilitate machine-managed tidal and water level adjustment.

S-100 itself is the technology baseline for all S-100 based Products. S-100 itself should not prevent forever all possibilities to adjust tidal and water levels for applicable situation – being it planning or monitoring.

S-100 as baseline should provide overarching principles to be used by S-98 and S-100 Product Specifications for adjusting the depth related functionality.

As reference below are IMO MSC.252(83) specifications related to human machine interface:

- **simple operator action:** procedure achieved by no more than two hard-key or soft-key actions, excluding any necessary cursor movements, or voice actuation using programmed codes or equivalent alternative means

single operator action: procedure achieved by no more than one hard-key or soft-key action, excluding any necessary cursor movements, or voice actuation using programmed codes

S-98 COMMENTS FOR DISCUSSION

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- Proposed solution

Change C-5.1 g) as in the redline version below:

As default depth information should only be displayed as it has been provided in the ENC and not adjusted by tidal or water level height. If the ECDIS has integrated the use of a S-100 based tidal or water level product specifications and ENC charts, it may provide all depth related functionality based on the adjusted tide or water level ~~display the adjusted tide as an italicized offset to the sounding in the ENC~~. The data for the adjustment may be static (for example a forecast of future) or may be real-time (for example from water level measurements through radiocommunication). The details of such integrated depth related functionality are specified both in S-98 and in related S-100 based Product specifications (for example S-101, S-102, S-104 and S-111). The related standard, S-98 and related S-100 based Product Specification, may include conditional model to limit applicability of individual products for adjustment of water level. For example, individual S-101 chart cells or individual S-102 bathymetric cells may include metadata or feature objects which limit the geographical area for which the depth adjustment is permitted. For example, individual S-104 cells may include limitations related to date/time period when the depth adjustment is permitted.

When providing depth related functionality that has adjusted the depth information in the ENC:

1. The ECDIS shall display a permanent and non-obscured indication of the adjustment in use and if the adjustment is based on static or real-time information. Further details of the adjustment, at least source and applied date/time period of the data used for adjustment shall be available at least on demand by single operator action. If displayed area consist of sub-areas based on different sources and applied date/time periods or include areas without applied depth adjustment the border of such areas shall be presented and it shall be possible to toggle between presentation of no area fill and transparent area fill of different areas by single operator action.
2. It shall be possible to toggle between the adjusted and non-adjusted depth functionality by single operator action. This toggle function shall apply to all functionality of the ECDIS which is subject to the tidal and water level adjustment.
3. It shall be possible to select date/time period of the data used for the adjustment by simple operator action.
4. It shall be possible by single operator action to see both the adjusted safety contour and the safety contour based on non-adjusted ENC chart. This functionality shall be available both when the functionality of ECDIS is based on adjusted depth and when the functionality of ECDIS is based on non-adjusted depth. The line styles of the separate safety contours shall be distinguishable.
5. The ECDIS shall be capable to provide functionality depth adjustment based on static data and the ECDIS may be capable to provide functionality depth adjustment based on received real-time measurements of water level,
6. The ECDIS shall record at one-minute intervals the use of depth adjustment: depth adjustment related user selections in use and details of used S-100 products such as cell name, edition, update, issue date as applicable.

For definition of ‘single operator action’ and ‘simple operator action’, see IMO MSC.252(83)

S-98 COMMENTS FOR DISCUSSION

- C-5.3 Paragraph 3.2 (both France and IIC)
  - France
    - Is SENC concept applicable to S-100 based products or only for S-101 ENCs?
  - IIC
    - Just a note - does this imply that “ENC” is not synonymous with s-57/S-101 only? This doesn’t say that all the information “necessary for safe navigation” is contained in the S-57 feature catalogues - the line of reasoning would be that “ENC” is everything for safe navigation, therefore S-101 + S-102 is also “ENC” in that context, and S-102 is not “degrading” the display at all in the A.823 sense….

S-98 FOR DISCUSSION

- IMO PS defines a ENC/SENC as:

display additional navigation related information.

3.2 *Electronic Navigational Chart (ENC)* means the database, standardized as to content, structure and format, issued for use with ECDIS by or on the authority of a Government, authorized Hydrographic Office or other relevant government institution, and conform to IHO standards. The ENC contains all the chart information necessary for safe navigation and may contain supplementary information in addition to that contained in the paper chart (e.g. sailing directions) which may be considered necessary for safe navigation.

3.3 *System Electronic Navigational Chart (SENC)* means a database, in the manufacturer's internal ECDIS format, resulting from the lossless transformation of the entire ENC contents and its updates. It is this database that is accessed by ECDIS for the display generation and other navigational functions, and is equivalent to an up-to-date paper chart. The SENC may also contain information added by the mariner and information from other sources.

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S-98 FOR DISCUSSION - ALERTS

- Clause 8.3 (IIC and NIWC)
  - IIC - We really need to address the thorny issue of whether S-100 ECDIS is able to suppress alerts when multiple product specifications are loaded under interoperability. The core use case of S-102 on S-101 should be used as an example. As a group we need to establish a consistent description of this use case and include it in this section. My take on it is (a) depth contours will never be computed by an ECIDS (b) S-102 will probably include its own depth contours (c) suppression of S-101 depth contours for an S-102 contour should be acceptable functionality if the user has a clear indication. (d) Similarly a corrected depth should be acceptable. [Discuss? :-)]

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S-98 COMMENTS - ALERTS

- NIWC offered a clarification
  - “The alerts catalogue is a component of the portrayal catalogue; it describes each alert event along with its associated message(s) and highlighting rules.
  - The alerting model allows product developers to associate alerts with features (optionally satisfying specified conditions on attribute values) by encoding rules in the portrayal catalogue.
  - Alerts are associated with drawing instructions output by the portrayal, and are triggered when the vessel route (either actual track, during route monitoring, or planned, during route planning) intersects the geometry (which may be restricted or augmented) of a feature. The events are alarms, warnings, cautions, or indications as described in IMO MSC.252(83).”

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S-98 WRAP UP

- Form a small correspondence group to work through the remaining comments over the next 4 -6 months
- Send it to S-100WG for a final review
- Report to HSSC that S-98 1.0.0 will be delayed until 2022
  - S-98 is tied to Edition 5.0.0 of S-100 which is scheduled for 2022
  - Provides more time to set up the interoperability catalogue and potential test datasets

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IMO AND S-100

- The IMO Maritime Safety Committee at its 102nd meeting held from 04 to 11 November, noted the recommendations from NCSR and agreed with the recommendations of the Sub-Committee regarding consolidation and renaming of outputs, as well as the expansion (resolution MSC.232 (82) on Revised Performance Standards for Electronic Chart Display and Information Systems (ECDIS)
- With respect to the proposal, on the inclusion of outputs in the 2020-2021 biennial agenda of the Sub-Committee, the Committee did not approve their inclusion since there would not be sufficient time to address those outputs during this biennium, due to the rescheduling of NCSR 8 in view of the pandemic.
- The outputs could thus, at the earliest, be included in the next biennial agenda of 2022-2023

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WHAT THIS MEANS

- The initial proposal suggested to amend the footnotes and references to include S-101 and S-100
- However, the way S-100 and S-98 are now structured their needs to be more thought put towards this approach.
  - For example, remove the footnotes and refer to Appendix 1 and to the IHO List of Approved Standards for ECDIS
  - https://iho.int/en/standards-in-force
- Need to work with relevant stakeholders such as CIRM to provide a cohesive approach to recommending changes to the ECDIS PS to cater to the needs of an S-100 based ECDIS

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S-100 CATALOGUE METADATA PROGRESS

- As directed by S100WG5 a new metadata part was drafted and sent to the metadata correspondence group for comment.
- Held a series of VTC meetings to adjudicate the non-editorial comments.
- Next steps
  - Clean up redline
  - Follow up on outstanding comments
  - Submit to S100WG for final review and approval for Edition 5.0.0