

10th Meeting of the S-101 Project Team (S-101PT10)

Brest, France – Tuesday 13th June – Thursday 15th June 2023

Draft Record

NOTE: the following Record is ordered by Agenda Item number and not necessarily in the order of presentation of Papers.

Decisions are highlighted in **grey**. Action numbers highlighted in **blue**.

* Denotes Papers to be taken only if time permits

S101PT10 - Draft Record of Meeting		
(13-15 June 2023)		
Topics	Document	Discussion, Decisions and Actions
Participants	S101PT10-01A	<p>List of registered participants [S-101PT Chair]</p> <ul style="list-style-type: none"> - Meeting opened by S-101PT Chair, Tom Richardson. - Welcome address from Head of Public Services and International Relations and Directorate-International Charting Co-ordinator for Region G, Captain Pierre-Yves Dupuy, of the Service Hydrographique et Océanographique de la Marine (SHOM). He welcomed participants to Brest, noting its extensive maritime history; and stressed the importance of the work being done by the Project Team in developing the S-101 Product Specification as the fundamental dataset layer to support the realisation of the S-100 Roadmap for the S-100 Implementation Decade (2020-2030) - The Chair was pleased to note the number of face-to-face attendees at this meeting. He stated that the principle outcome of the meeting was to discuss and adjudicate on proposals related to the development of Edition 1.2.0 of the S-101 ENC Product Specification, which will be the final “implementation and testing” version of the Product Specification before publication of the operational release Edition 2.0.0. The Chair encouraged all attendees to review the S-101PT List of Contacts and provide the IHO Secretariat with any updates. [Permanent S-101PT Action]
Agenda	S101PT10-02	<p>Approval of the agenda [S-101PT Chair]</p> <ul style="list-style-type: none"> - The S-101PT10 Agenda was approved without amendment or comment, noting that the order of proceedings may depart from the Agenda in order to better cover related Agenda items sequentially; and to accommodate remote Presenters in different time zones. [Decision]
HSSC15 Actions	S101PT10-03	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair summarized the Actions from HSSC15 (held the previous week) impacting the S-101PT. The meeting noted the Report. [Decision] - He noted in particular: <ul style="list-style-type: none"> o Recognition by the HSSC of the work of the Project Team, in particular the publication of S-101 Edition 1.1.0; and the significant contributions of the Expert Contributors; o The timeframes for the S-100 Implementation Roadmap, requiring that the Edition 2.0.0 Operational version of S-101 is to be published during 2024 in preparation for the introduction of S-100 ECDIS on vessels from 01 January 2026. In order to achieve this timeframe, the final draft S-101 Edition 2.0.0 is to be submitted to the HSSC during September 2024, for endorsement of the Committee by correspondence; o The report from the ISO 9001 Cell, with a focus on S-101 development and the operation of the IHO Geospatial Information (GI Registry);

		<ul style="list-style-type: none"> ○ HSSC recognition of the relative immaturity of the development status of Publications S-98, S-128 and S-164, which could have an adverse implication on achieving the timeframes as outlined in the Roadmap; and <ul style="list-style-type: none"> ○ The report from IEC regarding the revision of IEC Publication 61174 - <i>Maritime navigation and radiocommunication equipment and systems - Electronic chart display and information system (ECDIS) - Operational and performance requirements, methods of testing and required test results.</i> - There were no comments or questions from the meeting related to the Report.
S101PT9 Report	S101PT10-04	<p>[IHO Sec (Jeff Wootton)]</p> <ul style="list-style-type: none"> - The S-101PT9 report was accepted without comment. [Decision]
S101PT Actions	S101PT10-05	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair thanked the members of the S-101PT for the continuing significant progress that had been made on the S-101 Actions list since S-101PT9, and encouraged members to check for any outstanding Actions that may be within their remit. - The S-101PT Secretary reported on the Actions that have been closed since S-101PT9, with no comments on these from the floor. He then stepped through the S-101PT Action items that were listed as ongoing for an indication on progress on these items. The status of Actions remains unchanged except for the following: <ul style="list-style-type: none"> ○ S-101PT5-13: To remain ongoing, noting however Paper S-101PT10-07.9 submitted to this meeting; ○ S-101PT6-10: Action to remain ongoing, however transferred to Klas Östergren (SE); ○ S-101PT8-11: List as Time Expired. This Action has been taken over in part by a pending (yet to be approved) Project within the Singapore Lab to test S-101 and S-102 interoperability with Mariner feedback. Remaining aspects of this Action to be addressed as part of ongoing Action S-101PT8-14. ○ S-101PT8-26: Close this Action. Existing specified minimum list of mandated ECDIS viewing scales to be tested. See related Action S-101PT10-09. ○ S-101PT8-30: To be discussed at S-100WG10 meeting. Will likely be a Paper in the lead-up to S-100WG10 submitted to S-101PT11. ○ S-101PT9-10: List as Time Expired. May be further action resulting from discussions at this meeting. ○ S-101PT9-11: Completed. UK and DK have notified their intention to contribute. ○ S-101PT9-16: The Chair requested any comments on this Action from the floor. Hannu Peiponen (IEC) stated that the interpretation of loxodromic lines in S-100 ECDIS should be kept as it is in S-57/S-52. To remain ongoing pending any further feedback. ○ S-101PT9-17: Close Action. Would cause confusion during the dual-fuel period. May be re-investigated post dual-fuel. ○ S-101PT9-20: Paper S-101PT10-07.1 for this meeting. ○ S-101PT9-21: Completed. Paper S-101PT10-07.1 for this meeting. ○ S-101PT9-23: Completed – confirmed by Holger Bothien (SevenCs). ○ S-101PT9-27: List as Time Expired. ○ S-101PT9-29: A meeting had been held between IHO Sec and the developer of S-102 documentation, which was being managed in the S-102 GitHub repository. Further investigation/discussion required, with SHOM to also be included in these discussions. Leave Action open. ○ S-101PT9-32: Completed. ○ Portrayal Actions: 101PT Portrayal Sub-Group Lead (Alvaro Sanchez) will check the status of these Actions and amend as appropriate. [Action S-101PT10/02] - There were no further comments from the floor in regard to the status of S-101PT Actions, however Project Team Members were encouraged to provide status on ongoing Actions as they are progressed. [Action S-101PT10/01]
DCEG SG Update	S101PT10-06.1	<p>[IHO Sec (Jeff Wootton)]</p> <ul style="list-style-type: none"> - The DCEG Sub-Group Lead (Jeff Wootton) presented the report on the activities of the DCEG Sub-Group since S-101PT9 and tabled the draft S-101 DCEG Edition

		<p>1.2.0 document for consideration of the PT, noting that further development work was required.</p> <ul style="list-style-type: none"> - Principle discussion items of note: <ul style="list-style-type: none"> o Klas Östergren (SE), with assistance from IHO Sec, T-Caris and NIWC, agreed to work on implementation and testing of the TextPlacement cartographic feature and provide feedback for refining the guidance included in the S-101 DCEG. [Action S-101PT10/04] o In order to better prepare S-57 data for conversion/migration to S-101, it was suggested that a proposal should be submitted to the ENCWG to provide guidance in the S-57 UOC that the attributes POSACC and SOUACC should be populated for relevant S-57 Objects corresponding to the mandate of the population of the equivalent S-101 attributes. [Action S-101PT10/03] o The S-101PT Portrayal Sub-Group Lead (Alvaro Sanchez) reported that the ECDIS alarms and indications for the mandatory population of the horizontalPositionAccuracy and verticalAccuracy attributes for the depth-related features in S-101, corresponding to any new requirement included in the revised ECDIS Performance Standards (MSC.530(106)) still needs to be addressed; and would be the subject of discussion within the Portrayal Sub-Group. - The ongoing activities of the DCEG Sub-Group were noted. - S-101PT approved the recommendation on the proposed way forward included in the presentation for progressing the S-101 DCEG to Edition 2.0.0. [Decision] - S-101PT approved the changes included in the draft DCEG Edition 1.2.0 as reported in the presentation, pending a full review of the document by the Project Team in the lead-up to the S-101PT11 meeting. [Decision]
Portrayal SG Update	S101PT10-06.2	<p>[S-101PT Vice-Chair]</p> <ul style="list-style-type: none"> - The S-101PT Vice-Chair and Portrayal Sub-Group Lead (Alvaro Sanchez) presented the report on the activities of the Portrayal Sub-Group since S-101PT9. The key points of the Report were noted, in particular the publication of Edition 1.1.1 of the S-101 Portrayal Catalogue in April 2023. - Principle discussion items of note: <ul style="list-style-type: none"> o Independent Mariner Selectors: It was agreed that a test(s) is required in S-164 for Independent Mariner Selectors. [Action S-101PT10/05] o Updating of all symbols in the Portrayal Register: It was agreed that further investigation is required, with the IHO Sec, in discussion with KHOA, to review the current Portrayal Register contents to identify the work to be done; and to what extent this any required changes may be automated. [Action S-101PT10/06]. To assist with this work, Christos Kastrisios (UNH) stated that they would be willing to develop a converter tool in cooperation with KHOA to convert Tiny (or other) SVG to the required S-100 SVG format. Further discussion related to general access to the GitLab repository used by the IHO Sec to log GI Registry issues with KHOA. It was reported that this would not be possible due to the limitation of the number of people that were permitted to access the GitLab. o Mariners Objects: In order to guarantee some flexibility in implementation by OEMs, S-101PT agreed that Mariners Objects symbols were out of scope for S-101 and therefore there was no requirement to include these symbols in the S-101 Portrayal Catalogue. It was further decided that there was no requirement to register Mariners Objects symbols in the Portrayal Register. [Decision] o Review registration of all Viewing Groups (VG) & Viewing Group Layers (VGL): Concern was raised that this would be a large body of work and it was unsure whether the resources were available to do this work. It was agreed to assign the Portrayal Sub-Group the task of reviewing the gaps in the content of the various Item Types in the IHO GI Registry, Portrayal Register and submit proposals to close these gaps as required. [Action S-101PT10/07] o Allocate and register mariners viewing group for INDHLT: Concern was raised that there may be an issue with S-52 in regard to specification for the implementation of the Indication Highlights (INDHLT) functionality in ECDIS to conform to the requirements of the IMO Resolutions. IEC (HP) responded that this was covered in Section 6 of S-64, and there were therefore tests included in S-64 corresponding to the IMO requirement. It was agreed that the Portrayal

		<p>Sub-Group Lead to be tasked to further investigate the issue with assigning a Viewing Group to INDHLT; and if required bring the issue to the attention of the S-164 Sub-Group (S-100WG). [Action S-101PT10/08]</p> <ul style="list-style-type: none"> - There were no further discussions related to the Report.
Validation Checks SG Update	S101PT10-06.3	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair presented the report on the activities of the S-101 Validation Checks Sub-Group since S-101PT9. - Principle discussion items of note: <ul style="list-style-type: none"> o It was noted that an initial set of S-101 Validation Checks (spreadsheet) had been developed for inclusion in S-101 Edition 1.1.0, however it was further noted that these Checks consisted an initial draft only with significant further development required. o An S-100 Validation Checks Sub-Group had been formed under the S-100WG to develop the generic S-100 level Validation Checks; the Sub-Group currently has 32 members from various Working Groups and Project Teams. There would be a requirement to establish a boundary between S-100 specific and Product Specification level Validation Checks. S-101PT members were encouraged to contribute to the work of the S-100 Validation Checks Sub-Group and, if possible, to implement the Checks as included in S-101 Edition 1.1.0. A virtual meeting of the Sub-Group is scheduled for 01 July. o Implementation of a set of Validation Checks by SevenCs in their software was acknowledged. - It was noted that the Validation Checks Sub-Group still did not have a Lead. A nomination was received for Klas Östergren (SE) to assume the position, which was endorsed with appreciation by the S-101PT. [Decision]
Test Dataset SG Update	S101PT10-06.4	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair presented the report on the activities of the S-101 Test Dataset Sub-Group since S-101PT9. - Principle discussion items of note: <ul style="list-style-type: none"> o The IHO Special Projects fund had been utilised for the creation of 21 S-101 Test Datasets which are intended to support comprehensive S-101 testing and Portrayal Catalogue development. o GROMOD has commenced work on S-164 and S-58 test datasets for S-101, projected for completion for S-101 Edition 1.2.0. Yann Corlay (GEOMOD) provided a progress report on the development of the test datasets. - It was noted that the Test Datasets Sub-Group still did not have a Lead. Richard Fowle (DK) indicated that he will contribute to the work of the Sub-Group, but cannot lead; there were no nominations to take up the position. The Chair will continue to lead this Sub-Group in the interim.
Scales SG Update	S101PT10-06.5	<p>[FR (Christian Mouden)]</p> <ul style="list-style-type: none"> - The ENC Scales Sub-Group Lead (Christian Mouden) presented the report on the activities of the ENC Scales Sub-Group since S-101PT9. - Principle discussion items of note: <ul style="list-style-type: none"> o No significant progress since S-101PT9. A meeting of Sub-Group members and any other interested parties was to be held on the morning of 14 June before the morning Session of the S-101PT10 meeting. o While a S-101 Edition 1.1.0 dataset had been recently provided for testing, the loading strategy was yet to be implemented in order to test the loading algorithm approved for S-101 Edition 1.1.0. Project Team Members and Implementers were encouraged to develop test data, test the data loading algorithm and report any findings to the Sub-Group Lead for informing back to the S-101PT. [Action S-101PT10/09] o It is intended that the Edition 1.2.0 S-101 Main document would include enhanced guidance on the utilisation of ENC scales, with UK suggesting that this may be aided by the inclusion of PowerPoint animations (demonstrated during the Sub-Group meeting on 14 June – see below) to demonstrate the relationships between different scaled ENC data and Mariners selected viewing scale for data rendering and display in ECDIS. - Sub-Group meeting 14 June:

		<ul style="list-style-type: none"> ○ Mikan Stamenkovich (NIWC) reported that they had not been able to implement the loading algorithm and were not in a position to dedicate further resources to this at this time. The ENC Scales Sub-Group Lead responded that the rendering of the Electronic Navigational Data Service (ENDS) in the ECDIS was a two-step process, with the loading algorithm only intended to select the correct dataset(s) to load; the actual portrayal is the second step. This was confirmed by Friedhelm Moggert-Kägeler (SevenCs). Mikan Stamenkovich stated that NIWC will upload their latest response/findings to the related GitHub Issue. ○ The Chair referenced related discussions taking place in the WENDWG related to ENC scheming. Jeff Wootton (IHO Sec) suggested that if a world-wide scheme could be developed for INT Paper Charts it should be possible to develop a similar scheme for ENCs, however at this time there are too many disagreements within the WENDWG and the HSSC in regard to such an international scheme. ○ Mikan Stamenkovich reported that one of the main problems was “at the seams”, where data portrayal (text, sector lines etc) crosses dataset boundaries. Hannu Peiponen (Furuno) responded that this will only be easily solved with an international agreement on ENC scheming and scales. ○ It was again suggested that the re-introduction of the concept of Usage Bands (Navigational Purpose) should be considered to assist with the data loading/unloading process. It was agreed that this would not be considered at this time, with Hannu Peiponen stating that their software did not use Usage Bands in their loading/unloading procedure as it caused too many problems. Mikan Stamenkovich stated that there is clear guidance in S-52 regarding the utilisation of Usage Bands, however the corresponding guidance does not currently exist in S-101 for utilisation of maximum/minimum display scales. The ENC Scales Sub-Group Lead responded that this was intended to be addressed for S-101 Edition 1.2.0. ○ Richard Coyles (UK) demonstrated the PowerPoint animations that had been developed to more clearly demonstrate the dataset load/unload process. The animations were well received, with Hannu Peiponen suggesting that these could be further improved by adding an additional scenario for when the Mariner zooms out to a small scale (overview) of the area.
S-101 1.2.0 Proposals	S101PT10-07	[Chair]
Improvements to Encoding Maritime Jurisdiction Features in S-101	S101PT10-07.1	<p>[UK (Richard Coyles)]</p> <ul style="list-style-type: none"> - Richard Coyles (UK) presented the Paper, which continues discussions initiated at the S-101PT9 meeting (Action S-101PT9-20 refers). - Following some discussion on the merits of allowing “linear” maritime jurisdiction areas to be encoded as curve type geometric primitives in some cases in order to remove the current “work-arounds” in S-101 of encoding very narrow areas, the Project Team agreed to allow this encoding. However, rather than introducing new curve type features in S-101 as recommended in the Paper, it was agreed that the curve geometric primitive would be allowable for the relevant maritime jurisdiction area features (TerritorialSeaArea, ContiguousZone, ExclusiveEconomicZone, ContinentalShelfArea and AdministrationArea). [Decision] - Jeff Wootton (IHO Sec) was tasked to include line primitive to the existing S-101 maritime jurisdiction features as included in the left-hand column of the Table at Annex A to Paper S-100WG10-07.1 [Action S-101PT10/10] and apply the corresponding changes throughout the DCEG as required.
DQ Portrayal in S-101	S101PT10-07.2	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair updated the project Team on the progress made on implementing the existing (S-52) data quality portrayal symbology in S-101. - Christos Kastrisios (UNH) further reported that the symbology for day and dusk display modes had been developed, with the night mode symbology yet to be done. The Project Team commended UNH on the work that has been done so far and asked UNH, with assistance from NIWC, to continue data quality symbol

		<p>development for (traditional) ECDIS dual-fuel display for S-101 Edition 1.2.0. [Action S-101PT10/11]</p> <ul style="list-style-type: none"> - It was noted that the highlighting for ECDIS Alarms and Indications related to data quality, corresponding to any new requirement included in the revised ECDIS Performance Standards (MSC.530(106)), was also yet to be developed.
S-101 Change Proposal - Berthing/FenderBerth	S-101PT10-07.3	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair presented the S-101 Change Proposal, on behalf of Raphael Malyankar (Portolan Sciences), for amending the definition of the term “Berthing” to be more generalised; and including a new term (for consideration for S-101) for “Fender Berth. - The Project Team approved the amendment of the definition for the term Berthing to the generic definition (2) as included in the Paper; and the proposal of a new term “Berthing Signal” having the more specific (1) definition as included in the Paper. [Decision]. Jeff Wootton (IHO Sec) was tasked with proposing amendments to the IHO GI Registry, Concept Register in conformance with the Project Team decision in response to the Paper; and with updating the S-101 DCEG as required. [Action S-101PT10/12] - The Project Team approved in principle the addition of a new term “Fender Berth” in the IHO GI Registry; and agreed that this new concept was out of scope for the S-101 Product Specification. [Decision]. Jeff Wootton (IHO Sec) was tasked with notifying the NIPWG (Raphael) to propose the new concept “Fender Berth” to the GI Registry, Concept Register. [Action S-101PT10/13]
Support for MRNs in S-101	S101PT10-07.4	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair presented the Paper, on behalf of Germany, for ensuring that MRNs are implemented in S-100 based Product Specifications before they reach operational status, noting that this paper will also be discussed at the NIPWG10 meeting (September 2023). - The general opinion of the meeting was support for the concept, however there was concern that implementing this now would take away from all the other work required to get S-101 to the Edition 2.0.0 operational release. - The Chair suggested that perhaps a method to implement MRNs would be to include MRN as a new attribute for the NauticalInformation Information type and associate this to the required feature. This was generally not supported as MRN is related to a single real-world feature which is best modelled by inclusion of a MRN attribute on the Feature types themselves. - Yong Baek (IHO Sec) stated that the S-100 Framework needs to include more concise guidance on the use and application of MRNs in S-100 based products. - The Chair suggested that S-124 will likely use MRNs with S-101 data. - The Project Team agreed in principle with the inclusion of support for MRNs in S-101, however considered that there is more work to be done at the S-100 level to provide guidance for the consistent implementation of MRNs. [Decision] - The Chair was tasked with taking this up with the S-100WG to provide further guidance on the consistent implementation of MRNs in S-100. [Action S-101PT10/15] - PRIMAR was tasked with reporting the S-101PT discussions on the consistent implementation of MRNs to the NIPWG. [Action S-101PT10/16] - Sylvia Spohn (DE - remote) stated that DE were happy with the outcome and that the discussion was being taken forward.
Mooring/Warping Facility in S-101	S101PT10-07.5	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair presented the Paper proposing complete re-modelling of the Feature type MooringWarpingFacility. - The focus of discussion was the values of the attribute categoryOrMooringWarpingFacility. It was noted that there was an outstanding DCEG Sub-Group Action to investigate the encoding of mooring buoys, which can be subsumed by any Actions resulting from this Paper. It was also noted that mooring cables can currently be encoded in two ways (also as categoryOfCable in addition to categoryOrMooringWarpingFacility). The discussions were substantively in support of the re-modelling of the MooringWarpingFacility feature as suggested in

		<p>the Paper, although it was questioned whether bollards are appropriate for a navigational ENC product or such information is more appropriate for port infrastructure or mooring/berthing Product Specifications such as S-131. This prompted a wider discussion regarding the requirement to harmonise as much as possible the modelling/information between different S-100 based Product Specifications.</p> <ul style="list-style-type: none"> - The Project Team agreed that further investigation was required to determine the best option for the modelling of the attribute categoryOfMooringWarpingFacility value 6 (mooring cable). [Decision] [Action S-101PT10/17] - The Project Team approved the removal of attribute categoryOfMooringWarpingFacility value 7 (mooring buoy) as an allowable value and creation of a new MooringBuoy feature in S-101. [Decision] [Action S-101PT10/18] - The DCEG Sub-Group was tasked with discussing the outstanding recommendations in the Paper. [Action S-101PT10/19] - The Chair was tasked with reporting the S-101PT discussions on the revised modelling of the attribute categoryOfMooringWarpingFacility to the NIPWG, noting the requirement for the harmonization of information between products (S-101 and S-131). [Action S-101PT10/20]
Category of Bridge in S-101	S101PT10-07.6	<p>[FR (Christian Mouden)]</p> <ul style="list-style-type: none"> - Christian Mouden (FR) presented the Paper proposing the remodelling of Feature type Bridge in order to remove inconsistencies for the values of the attribute categoryOfBridge. - There was unanimous support for the proposal, with the only additional discussion to determine whether the changes should be made for S-101 Edition 1.2.0 or delayed until Edition 2.0.0. The discussion was in favour of incorporating the changes for Edition 1.2.0. - As the modelling for bridges is also significant in regard to river navigation, the opinion of the Inland ENC Harmonization Group (IEHG) was sought in regard to the proposal. Denise LaDue (IEHG – remote) responded that the IEHG supports the proposal. - The Project Team approved the recommendations for the revised modelling for the S-101 feature Bridge as included in the Paper. For inclusion in S-101 Edition 1.2.0. [Decision] - Jeff Wootton (IHO Sec) was tasked with applying the changes to the modelling of the S-101 feature Bridge as included in the Paper; and with updating the S-101 DCEG as required. [Action S-101PT10/14]
Use of Roles in the Feature Catalogue	S101PT10-07.7	<p>[Friedhelm Moggert-Kägeler (SevenCs)]</p> <ul style="list-style-type: none"> - Friedhelm Moggert-Kägeler (SevenCs) presented the Paper identifying possible errors in the way the roles are specified for feature associations in the S-101 DCEG and Feature Catalogue. - Jeff Wootton (IHO Sec) stated that there was a requirement for the small Associations Sub-Group to have a meeting in order to discuss this and other issues related to the encoding guidance for associations in the DCEG and the their structure in the Feature Catalogue. It was additionally suggested that, as part of the discussions of the Sub-Group, consideration should be given to reviewing the names of the association roles. - The Project Team approved the recommendations on the use of roles in the S-101 Feature Catalogue as included in the Paper, pending confirmation and further discussion by the Associations Sub-Group. [Decision] - Jeff Wootton (IHO Sec) was tasked with convening a meeting (VTC) of the Associations Sub-Group to discuss the recommendations included in the Paper and apply agreed changes to the DCEG. [Action S-101PT10/22]
Topmarks with Multiple Colours	S101PT10-07.8	<p>[NL (Arno Meurink)]</p> <ul style="list-style-type: none"> - Arno Meurink (NL) presented the Paper proposing the introduction into S-101 of the ability to encode multiple colours for topmarks, as is possible doe S-57 ENCs. - The Chair and Friedhelm Moggert-Kägeler (SevenCs) strongly suggested that there needed to be alignment between S-101 and the S-401 Inland ENC Product Specification; and the use case was included in the Paper that the ability to encode

		<p>multiple colours for topmarks was required for inland navigation. The Project Team subsequently approved the recommendation to amend the multiplicity of the sub-attribute colour on the complex attribute topmark to [0.*], noting that this will also require colourPattern to be included as an allowable sub-attribute. [Decision]</p> <ul style="list-style-type: none"> - Jeff Wootton (IHO Sec) was tasked with amending the multiplicity of sub-attribute colour on the complex attribute topmark to [0.*] for all instances in the S-101 DCEG; and with adding colourPattern as an allowable sub-attribute. [Action S-101PT10/23] - In regard to validation checks, the Project Team agreed that NL should raise the issue of the validation checks associated with the colours of daymarks/topmarks with the S-101 Validation Checks Sub-Group. [Action S-101PT10/24] - In regard to S-57 to S-101, the Project Team agreed that further discussion was required on the conversion of the S-57 TOPMAR object to the S-101 Daymark feature in some encoding situations within ENC Conversion Sub-Group [Decision]; however as this would be an process that would be discussed by the Sub-Group as part of the application of changes resulting in the changes from S-101 Edition 1.1.0 to Edition 1.2.0, it was considered that no S-101PT Action was required.
Vertical Datum Information in S-101	S101PT10-07.9	<p>[S-101PT Chair / Mikan Mikan Stamenkovich (NIWC)]</p> <ul style="list-style-type: none"> - The Chair presented Paper 07.9; and Mikan Stamenkovich (NIWC) presented Paper 07.9A, related to confusion over the inclusion of vertical datum information in S-101 datasets. - After some discussion, the Project Team agreed in principle with the recommendations in Papers. [Decision] However, it was decided that a more complete proposal was required for consideration. - IHO Sec, in consultation with Chair and NIWC, was tasked with developing a proposal on possible options for the modelling of the metadata features in line with discussions at S-101PT10 for consideration of the DCEG Sub-Group. [Action S-101PT10/25]
Use of the UpdateInformation Feature	S101PT10-07.10	<p>[AU (Alvaro Sanchez)]</p> <ul style="list-style-type: none"> - Alvaro Sanchez (AU and S-101PT Vice-Chair) presented the Paper examining more practical use of the UpdateInformation feature in S-101 in the context of the current ENC Update review process in ECDIS. - It was noted that the both IMO MSC.232(82) (2006) and MSC.530(106) (2022) – <i>Performance Standards for ECDIS</i>, state that the ECDIS “should” provide the functionality for the mariner to display Updates; while in both S-52 and S-98 this is a “must”. Based on the IMO requirement, it was suggested that there is no requirement to include Update review functionality for all changes – only those that are considered to have an impact on navigation. - There was extensive discussion on the recommendations in the Paper. In general, the recommendations were supported, with T-Caris, ESRI, NIWC, IHO Sec and SevenCs stating that they could see no problems with the proposal, with SevenCs adding that there will be a need to be careful about what needs to be identified as an Update. Hannu Peiponen (IEC), while in general supporting the proposal and SevenCs comments, additionally noted that IMO does not distinguish between the different S-100 products when providing information on Updates; S-164 should therefore have enough documented tests to support this approach. Further, it should be a cartographic decision as to what Update information needs to be reported to the Mariner – the current mechanism does not allow for this. - The Chair suggested that in the future the Route Check function could be utilised to only highlight those Updates specific to the planned route. This was not supported. - Mikko Hovi (FI) did not support the proposal, as FI have already developed their S-101 production process using the existing ECDIS Update indication method and current intention of the UpdateInformation meta feature. He had grave concerns on the impact of the proposal on Data Producers this close to S-101 operational release. FI were in support of eventual implementation of the proposal, but not for the planned 2026 introduction on vessels of S-100 ECDIS. - Hannu Peiponen was concerned that implementing this change may extend the implementation of S-101 by at least a year.

		<ul style="list-style-type: none"> - After further discussion, the Project Team agreed that further work was required for the modelling and implementation of the UpdateInformation feature, based on the recommendations in the Paper. [Decision] - Jeff Wootton (IHO Sec) was tasked with developing a proposal for the modelling and implementation of the UpdateInformation feature, based on the recommendations in the Paper, for consideration of the DCEG Sub-Group. [Action S-101PT10/21]
Small Craft Mooring Areas	S101PT10-07.11	<p>[FR (Christian Mouden)]</p> <ul style="list-style-type: none"> - Christian Mouden (FR) presented the Paper proposing the addition of a new Feature SmallCraftMooringArea” in S-101 Edition 1.2.0. - Jeff Wootton (IHO Sec) pointed out that the fact that a small craft mooring area is an area within which anchoring is prohibited can be identified by encoding a RestrictedAreaNavigational coincident with the AnchorageArea. He also stated that any decisions taken as a result of this proposal should not conflict with concurrent work being done by the NIPWG. - The Project Team agreed in principle with the recommendations in the Paper. [Decision] - FR, UK, AU and IHO Sec were tasked with re-working the proposal on small craft mooring areas in consultation with the NIPWG for presentation to NIPWG and S-101PT. [Action S-101PT10/26]
Mandating the ReplacedData Attribute	S101PT10-07.12	<p>[PRIMAR (Mikus Ranka)] *</p> <ul style="list-style-type: none"> - Mikus Ranka (PRIMAR) presented the Paper proposing the mandation of S100_DatasetDiscoveryMetadata attributes replacedData and dataReplacement. - The Chair raised concerns of the references in the paper to commercial data distribution processes, which were supported by Su Marks (IC-ENC). Mikus Ranka responded that there was no intention in the Paper to over-regulate data distribution processes. - The Project Team approved the replacedData attribute to be mandatory only if a cell is cancelled; and attribute dataReplacement to be mandatory if replacedData = <i>True</i>. [Decision] - Jeff Wootton (IHO Sec) was tasked with applying changes to the S-101 Main document in line with the recommendations in the Paper and the decisions made at the meeting. [Action S-101PT10/27]
Mandating Dataset File with New Support File	S101PT10-07.13	<p>[PRIMAR (Mikus Ranka)] *</p> <ul style="list-style-type: none"> - Mikus Ranka (PRIMAR) presented the Paper on considerations regarding the support file management. - All comments were in support of the recommendations included in the Paper, with Dave Grant (NIWC – remote) adding that support files only need to be supplied to the ECDIS once. - The Project Team approved the recommendations included in Paper S-101PT10-07.13. [Decision] - PRIMAR was tasked with providing redline changes for the S-101 Main document for mandating a dataset file to be included in the Exchange Set containing the first release of a new support file. [Action S-101PT10/29]
Support File Attribute S100_Purpose Usage	S101PT10-07.14	<p>[PRIMAR (Mikus Ranka)] *</p> <ul style="list-style-type: none"> - Mikus Ranka (PRIMAR) presented the Paper on S-101 ENC Cancellation Update encoding indicating that the Update is a cancellation Update for its base dataset. - The Chair prefaced discussions by commenting that this was a very late submission, so Project Team members may require more time to consider the proposal. He also asked whether the proposal has also been considered for S-128. Svein Skjaeveland (PRIMAR) responded that to his knowledge it had not. - The Chair suggested that PRIMAR, with cooperation from IC-ENC, develop test datasets for testing (“file-less” and “file” cancellations) and provide feedback to S-101PT11. - The Project Team agreed that further investigation (development of test datasets and testing) of the proposal is required. [Decision]

		<ul style="list-style-type: none"> - PRIMAR and IC-ENC were tasked with further investigating the proposal on cancellation update information, including development of test datasets and testing, and report back to S-101PT. [Action S-101PT10/28]
Testbed Experiences	S101PT10-08	<p>[Various]</p> <p>The following testbed reports were provided for information to Project Team members:</p> <ul style="list-style-type: none"> - Christian Mouden (FR) gave a presentation “S-100 Across the Channel”, which is a joint SHOM-UKHO S-100 ECDIS project to test S-100 ECDIS, including the dual-fuel concept, across multiple S-100 based Product Specifications. - Klas Östergren (SE) informed the meeting of a prospective 3 year project to test interoperability between S-101, S-102 and S-104, intended to commence in November 2023. - Soo-kyoung Yeom (ROK) gave a presentation updating the meeting on the S-100 Open Online Platform (S1OOP) testbed project. - Mikus Ranka (PRIMAR) gave a presentation on the PRIMAR Conversion Task Force Project. - Laura Tyzack (IC-ENC) provided a verbal update on a S-57 to S-101 conversion project initiated by IC-ENC. - Mikan Stamenkovich (NIWC) provided an update of the status of the NIWC S-100 Viewer and Shore ECDIS, stating that there had been significant changes made in their Shore ECDIS since S-101PT9. Yong Baek (IHO Sec) reported that the latest version of the software can be downloaded from the Repository in the IHO GI Registry. - The Chair provided an update on the establishment of the S-100 Resources GitHub repository (https://iho-ohi.github.io/S100Resources/). Any feedback from Project Team members will be welcome, for further discussion at the S-101PT11 meeting. [Action S-101PT10/30]
ISO Cell Update	S101PT10-09	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair reported on the activities of the ISO Cell since S-101PT9, with apologies on behalf of the Vice-Chair, who was unfortunately not available to deliver the report. - Referenced HSSC15 Paper 05.5B - <i>Report on the application of some ISO 9001 Principles in the development of S-101 PS</i>. - Clarification was requested as to whether the “Effort KPI” requested of the HSSC was only intended for S-101. The Chair responded that initially this would be for S-101 only, but may be extended in future. - Noting that a draft DQWG template has been developed for the Data Quality section of S-100 based Product Specifications, PRIMAR was tasked with providing redline changes for the S-101 Main document, Section 6 (Data Quality) to conform to the DQWG template. [Action S-101PT10/31]
Delivery of S-101 2.0.0	S-101PT10-10	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair gave a presentation on the projected way forward for the delivery of S-101 Edition 2.0.0. - Mikan Stamenkovich (NIWC) asked whether, at the completion of the Review Report (RR) and Committee Draft for Voting (CDV) stages of IEC 61174 development, this would mean that S-101 would need to be effectively “frozen”. Hannu Peiponen (IEC) responded that it should be, noting the possible impact of changes to S-101 on the revision cycle of IEC 61174. Jeff Wootton (IHO Sec) suggested that this needs to be identified as a very high risk given that when the initial operational release of S-101 is made available critical changes may be identified when this initial version is implemented. S-101 has the flexibility in its structure to be easily updated through transmissible Catalogues, while related ECDIS Standards (such as IEC) do not have this flexibility. This prompted significant discussion. - It was noted that there is a HSSC Action to align all prospective operational S-100 based Product Specifications to S-100 Edition 1.0.0. The Project Team agreed that Edition 1.2.0 of S-101 is to be aligned to S-100 Edition 5.1.0. [Decision] - It was suggested that, after publication of Edition 1.2.0, changes should be limited as much as possible. This suggestion was strongly supported by Hannu Peiponen (IEC). The Project Team agreed that after publication of S-101 Edition 1.2.0

		<p>changes to S-101 will be limited so as to avoid changes to configuration files and significant changes to the data model. [Decision]</p> <ul style="list-style-type: none"> - FR and SE reported that they are intending to start full data migration to S-101 as soon as production/database software aligned to S-101 Edition 2.0.0 is available. - Mikan Stamenkovich (NIWC) suggested that the cadence of S-101 related meetings needs to be increased, as he has concerns that there are still some fundamental issues that still need to be resolved. Jeff Wootton (IHO Sec) suggested that the monthly Project Team Executive meetings could be used to report on and move tasks forward. - Yong Baek (IHO Sec) noted that the S-164 Sub-Group had been established, and would be leveraging on work that is already taking place within the S-100 Validation and S-101 Validation Sub-Groups.
Date and Location of Next Meeting	S101PT10-11	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Project Team confirmed that the S-101PT11 meeting will be held in Lombok, Indonesia during the week commencing 25 September 2023 in conjunction with ENCWG8. [Decision] - Noting the discussions under Agenda item 10, The Project Team agreed that the S-101PT12 meeting will be held in a virtual format in the first quarter of 2024 (dates to be confirmed). [Decision] - The Project Team accepted the invitation from Sweden to host the S-101PT13 meeting during June 2024 (dates to be confirmed). [Decision]
Election of S-101PT Office Bearers		<p><i>[IHO Sec] Requirement of all WG/PT following each ordinary session of the IHO General Assembly</i></p> <ul style="list-style-type: none"> - The Project Team elected by acclamation Tom Richardson (UK) to remain as Chair; and Alvaro Sanchez (AU) and Klas Östergren (SE) as co-Vice Chairs, of the S-101PT for the next IHO Intercessional period. [Decision] - Jeff Wootton (IHO Sec) was tasked with updating the S-101PT web page for the new S-101PT Office Bearers as required.
Meeting Closes	N/A	<p>[S-101PT Chair]</p> <ul style="list-style-type: none"> - The Chair thanked all participants for their inputs to the meeting. He commended the Service Hydrographique et Océanographique de la Marine (SHOM) for its exceptional organization and hosting of the S-101PT10 meeting, in particular Christian Mouden and other participating SHOM staff for their technical assistance in all aspects of the meeting. - The Chair then closed the meeting, stating that he was looking forward to welcoming S-101 Project Team members to the S-101PT11 meeting in Lombok in September 2023.