4th S-101 PROJECT TEAM MEETING (S-101PT4)

13 - 14 June 2019

IHO Secretariat, Monaco

Draft Report

PT Member abbreviations:

AA	Al Armstrong (US – S-101PT Chair)
ADL	Antonio di Lieto (Carnival)
AK	Abri Kampfer (IHO Sec.)
AM	Ana Mileze (BR)
AWM	Arno Meurink (NL)
AN	Alberto Costa Neves (IHO Sec.)
AS	Alvaro Sanchez (AU)
BC	Bruno Cardoso (DK)
CH	Canhoe Hur (RoK)
CM	Christian Mouden (FR)
CT	Cristina Tirone (IT)
CZ	Chongyang Zhang (CN)
DM	Dara Mulyarenko (PRIMAR)
EL	Eric Li (US - NGA)
GK	Gabriela Kotsulim (EE)
GT	Guttorm Tomren (IALA)
HA	Hugh Astle (CARIS)
HC	Hyunsoo Choi (RoK - KRISO)
HE	Hans Engberg (SE)
HG	Hedrik Goehmann (SevenCs)
HP	Hannu Peiponen (Furuno)
VP	Valentine Palma (IT)
YB	Yong Baek (RoK – KHOA)
JL	Junshik Lee (RoK – KHOA)
JP	Jonathon Pritchard (UK)
JW	Jeff Wootton (IHO Sec.)
LH	Liz Hahessy (IC-ENC)
MB	Megan Bartlett (US)
MH	Mikko Hovi (FI – NCWG Chair)
MS	Mikan Stamenkovich (US – NIWC)
MX	Mingqiang Xu (CN)
OF	Odd Aage Føre (NO)
RBa	Rumi Baba (JP)
RBr	Rogier Broekman (NL – Chair DQWG)
RF	Richard Fowle (DK)
RS	Robert Sandvik (NO)
SJ	Shujuan Jia (CN)
SL	Shixin Li (CN)
SO	Sewoong Oh (RoK – KRISO)
SSk	Svein Skjaeveland (PRIMAR)
SSp	Sylvia Spohn (DE)
TH	Tomonori Hattori (JP)
TP	Tony Pharaoh (IHO Sec.)
TDP	Tom de Puyt (ESRI)
VB	Verena Bosselmann (NZ)

1. Opening and Administrative Arrangements

The Chair welcomed members to the meeting and noted that all meeting documents were available on the S-101PT4 document page.

2. Approval of Agenda and Actions from Higher Bodies

2.1 S-101PT Actions from HSSC11

The Chair informed the meeting the HSSC elected a new Vice-Chair- Mr Magnus Wallhagen (SE); and the word “marine” has been inserted into some of the S-100 based Product Specifications.

The meeting approved the agenda, and the chair reviewed the relevant actions from the HSSC12 and S-100WG4 meetings. He invited the meeting to consider action item HSSC11/11 requiring S-100WG/S-101PT/HSSC WG Chairs to consider how they can support an S-100 product showcase at the third IHO Council meeting. Contributors/participants in the showcase are to provide their draft presentations and input to the S-100WG Chair by 1 Sept.

See action.

2.2 S-101PT Actions from S-100WG4

The Chair noted that S-100WG4 action item 14 for the proposal to create a new ENC distribution protocol (presented by China), had been discussed during the ENCWG4 meeting; and it had been decided that most of the items in the proposal were already possible. China was invited to submit the presentation to the next WEND meeting for consideration.

2.3 S-101PT Way Forward (from HSSC11)

The Chair briefly reported on the current status of the S-101 Edit 1.0.0 Product Specification. Some inconsistencies between the DCEG and Feature Catalogue had been discovered and were in the process of being resolved. Additional work needs to be completed on the portrayal catalogue and there are missing symbols for the new S-101 feature classes that must be designed, agreed and produced. It was agree that a minor new edition will need to be produced to accommodate these required changes.

3. S-101 Components

3.1 S-101 Main Document [Armstrong]

The Chair briefly reviewed the list of editorial comments/actions that were compiled at the S-101PT3 meeting, and noted that a few items needed further consideration/investigation. These are highlighted in yellow in the comment sheet (document S-101PT4_2019_03.01_EN_S-101 Ed 2.0.0 Main Doc Road Map Action Items_V1.pdf).

3.2 S-101 DCEG [Wootton]

JW reported that the DCEG document had been completed. A few minor adjustments to align it with the new Feature Catalogue had been applied. Refer to agenda item 5.2.

3.3 S-101 Feature Catalogue [Baek]

JB reported that an update edition of the FC had been produced and was available from the Registry.

3.4 S-101 Portrayal Catalogue [Baek]

Still under development. JW noted that, although the there is a requirement to get it completed, it should not inhibit the implementation of the Edition 1.0.0 of the S-101 Product Specification for testing.

3.5 S-101 Validation Checks [Cardoso]

BC reported on the status of development of the S-101 validation checks. He noted that the review includes checks for changes in terminology; feature objects/attributes; and data structure. He noted that there was a requirement for some new checks, for example a check to test for objects that are simultaneously masters and slaves. There was a discussion about including the checks into a database so that they can be easily searched and output to a document format.

IHO Sec requested DK to consider what defining attributes should be assigned to individual tests so that they could be included into a single validation database for all S-10x checks.

The meeting noted that report.

See action.

4. S-101PT Reports

4.1 Report on the Status of the IHO GI Registry [Wootton]

JW reported on the current status of the IHO GI Registry and noted that the principle activities have been to align the FCD Register content with data models for S-100 based Product Specifications. He reported that the new Beta registry application which included Portrayal, Producer Code and Product Specification registers, had been brought online.

He also provide a report on the outcome of the Registry workshop that took place in conjunction with the S-100WG4 meeting. The workshop also agreed on some fundamental conventions for structuring Registry content, to be included in the S-99 Annex A document, relating to the use of language, syntax, camelCase conventions, code lists and remarks. He noted that a group had been set up to carry out a review of S-100 Part 2 and S-99.

The meeting noted the report.

4.2 Report on the Feature Catalogue Builder (FCB) Application [Baek]

YB reported on the status of the FCB application and the experiences with generating Edition 1.0.0 of the Feature Catalogue and noted that there were some discrepancies with association binding; association type or association name; and some feature associations. Work was ongoing to identify and resolve these discrepancies.

The meeting noted the report.

4.3 Report on the Portrayal Catalogue Builder Application [Baek]

YB reported on the new PCB that was also reported at the S-100WG4 meeting. As a result from feedback, the development team had implemented many new functions, including a sand box function; preview function; interface for defining styles and templates; interface for defining context parameters; and function to convert XSLT to Lua (due to be completed by 2020).

The meeting noted the report.

4.4 Update on the S-57 to S-101 Convertor [de Puyt]

TDP reported on the status of the converter application; and noted that the latest version of the conversion application could be downloaded from Basecamp. JW highlighted the spreadsheet that included a list of S-57 Features, Attributes and Enumerates that have not been included in S-101; or that have been remodelled. The meeting agreed that this spreadsheet could be improved as a reference with the inclusion of all the new concepts that have been included in S-101 Edition 1.0.0.

The meeting noted the report.

See action.

4.5 SPAWAR - S-100 Viewer – Status update [Stamenkovich]

MS provided a brief overview on the status of the NIWC (former SPAWAR) S-100 viewer.

The meeting noted the report.

4.6 KHOA - S-100/S-101 Viewer – Status update [Baek]

YB reported on the KHOA test to implement the Lua scripting language for ENCs. He noted that the outcomes were very positive. KHOA will be conducting further tests using other types of product datasets and will report to the next S-100 Test Strategy meeting in September.

The Chair thanked KHOA for their continued extensive work on this project.

4.7 S-101 Test Datasets

4.7.1 S-101 Conversion Practice [Choi]

HC reported on the S-101 Feature Catalogue (FC), he noted a few minor Feature Types had been discovered, which will be fixed and a new edition will be produced. Some of these included text placement. The Registry Manager thanked KHOA for their work, and noted that most of the issues seemed to be linked to associations.

CH reported that the KHOA S-100 Test Bed was related to their SMART Navigation Project. They used the ESRI converter to covert S-57 ENC to S-101 datasets and found that there was a need for 43% of the converted features for further editing.

The meeting noted the paper.

4.8 S-57 to S-101 Conversion Study [Pritchard]

JP provided a report on the investigations undertaken on the conversion of S-57 datasets to S-101 based on the associated ESRI converter and SPAWAR viewer; and data contributed by MS / Primar. The main objective was to look at how S-57 data could be "optimised" to prepare data for conversion to S-101. IIC have produced a report and have proposed steps for the conversion process.

IIC have carried out testing of the current converter application and have examined its operation; looked at how to optimise S-57 encoding in order to improve the conversion process. He provided a brief summary of next steps for implementing a standardized conversion process.

The meeting noted the report.

4.9 DQWG - QOBD Visualization and Validation Checks [Broekman]

RB reported on the CATZOC decision tree presented at HSSC11, and noted that it will be possible to automatically compute the equivalent of CATZOC if a survey has been adequately attributed. He commented on S-101 portrayal, and noted that screen wide symbolization of quality information is required. Boundaries of quality data should be displayed. The alerts and indicators model should also cover quality information. He also provided comments on some of the spatial operators (used in S-58) to help define the relationship between quality elements.

MH agreed with the concept – but questioned the additional work what will be required to implement the new quality model in ENCs.

4.10 S-100 Data Protection for S-101 ENC distribution services [Sandvik]

RS provided a brief outline of the shortcomings of the current S-63 scheme, especially with regard to ancillary files. He noted that the new S-100 Security Scheme will fix this problem. The new scheme uses a private/public key pair which are mathematically related to each other. Digital Certificate will provide a trusted infrastructure to exchange and verify a user's public keys. The new scheme will

support dual-fuel (S-57/S-101) exchange sets. Primar are currently producing test data which will be made freely available on Gihub for testing.

4.11 NCWG activities affecting S-101 development [Hovi]

MH provided a report on the activities of the NCWG since the last S-101PT meeting. Issues discussed within the NCWG that impact on ENC and S-101 development were specifically highlighted.

It was noted that there is a need to have a clear distinction between sea grass and seawwed/kelp – and be able to portray these as separate distinct features on charts.

See actions.

4.12 S-57 to S-101 Portrayal Gap Analysis [Wootton]

JW reported on the spreadsheets containing the new features and enumeration values that have been included in S-101 that are not in S-57 (noting that sea grass may also have to be added) and analysis work done so far as to any additional ECDIS symbology requirements. Symbols and, where appropriate, conditional drawing procedures will have to be developed based on the outcomes of further analysis which is required. This has been identified by the S-100WG as one of the most important bodies of work that needs to be completed for the release of the next version of S-101.

See also agenda item 5.6 and associated actions.

See action.

4.13 S-101 UML Mode [Wootton]

JW presented on behalf of Raphael Malyankar, on the UML model of the full application schema for the S-101 Product Specification, noting that the work had been funded by NOAA. The model will be made available on the Github site, where it will be maintained. After some discussion on the usefulness of the model, it was reported that it was most useful for software architects who are not familiar with the S-101.

The meeting noted the report.

4.14 NIWC Test bed Report [Stamenkovich]

MS reported that SPAWAR is now called NIWC (Naval Intelligence Warfare Centre). He reported that their S-101 Portrayal Catalogue 1.0.1 is available on basecamp. They had introduced changes to their Portrayal Catalogue which include attributes for quality of bathymetric data.

He proposed portrayal changes based on feedback and user experience. These included the need for attribute constraints and spatial references instead of direct points. Issues that are currently being worked on include date dependency, alerts and indications and symbol/viewing group dependency issues. These will be reported to the TSM7 meeting – Monaco in September 2019.

He invited members to test the applications developed by NIWC and to provide feedback (especially on the S-101 Lua portrayal catalogue).

The meeting noted the report.

5. S-101PT Proposals

5.1 Offshore Solar Farms [Meurink]

AWM reported on plans to build a floating solar park on the North Sea. He reported on the symbols and text in S-4 chapter 445.12 which need to be improved to cover marine solar farms. He request that Offshore Solar Farms should be added to the DCEG and a new S-101 attribute: category of offshore production area = 6 : solar farm should be created. The meeting agreed to the proposal.

See action.

5.2 DCEG Changes for S-101 Edition 2.0.0 [Wootton]

JW reported that since the publication of S-101 Edition 1.0.0, a number of issues have been identified (see paper) that will changes to the S-101 DCEG for inclusion in the next edition.

The meeting agreed with all the proposed changes identified in the paper. It also endorsed the continued review of the S-101 model for enumerated types that should be changed to Boolean types; and the continuation of the application of amendments to the DCEG similar to those approved by the meeting, as the review of the IHO GI Registry (FCD Register) content continues.

During the session, the issue of populating more meaningful values for the depthRangeMinimum for isolated shoals was raised. It was decided that this should be discussed by a small group intersessionally.

See actions.

5.3 Proposal of Alternate Options for Display Scale [Bartlett]

MB reported that the US (NOAA) are designing a new scheme of its electronic chart suite, and requested the group to consider different display scaly for ENCs. KHOA reported that they have also changed their scheme to a binary grid scheme, and supported the US proposal. HP – proposed that differences in loading strategy implemented in ECDIS has caused differences in display. JW stated that there needed to be a clearly established relationship between the compilation scale of S-101 datasets and a minimum set of ECDIS data display scales in order for functionality such as dataset loading/unloading and application of the scaleMinimum attribute to operate efficiently and consistently. RF proposed that there should be a common set of compilation scales to be used for data.

Following a lengthy discussion, the meeting concluded that the most important issue to be resolved was to establish an agreed common loading strategy. Also to consider removing the mandating on loading strategy.

See actions.

5.4 Quality of Horizontal Measurement [Mouden]

CM reported that the S-57 attribute QUAPOS will be qualityOfHorizontalMeasurement in S-101. Some of the values for QUAPOS are not considered to relate to the horizontal position but rather the method of survey. It was proposed that some of the definitions need to be reviewed. Note that many of the definitions should be reviewed by the DQWG.

See action.

5.5 Sector Extension Portrayal Attribute [Stamenkovich]

MS noted that NIWC had found inconsistencies with light sectors. Proposed that the sector extension definition should be changed to "The distance in screen millimetres (mm) by which a sector is extended beyond the default", and the second remark should be removed.

HA questioned what would happen if a sector shorter than 20 mm is required.

HP reported that the extension attribute was due to the removal of the S-52 CSP.

The meeting agreed that the wording describing sector light extension needs to be improved.

See actions.

5.6 S-101 Additional Portrayal Considerations [Wootton]

JW reported that additional work needs to be done on S-101 portrayal, and proposed that a sub-WG need to be formed in order to refine the current symbols, line styles, sounding structures and colours in order to modernize ENC portrayal in ECDIS. There was some concern from the meeting that a major change to ECDIS portrayal would create confusion for mariners and inconsistency between the portrayal of S-57 data and S-101 data in a "dual-fuelled" ECDIS. JW clarified that the proposed review should be scoped as a refinement of the existing Presentation Library only, in addition to the requirement for new symbology for S-101. The meeting agreed to the formation of the sub WG. MB agreed to discuss the possibility of taking the lead in this work on her return to the US.

See actions

6. General Topics [Armstrong]

None.

7. Any Other Business [Armstrong]

None.

8. Review of Meeting Actions [Armstrong/Pharaoh]

Due to a lack of time, it was agreed that the actions to be distributed via email.

9. Date and Venue of Next Meeting

Chair reported that the ENCWG had received an offer to host their next meeting in New Zealand in November 2020 – subject to confirmation. If confirmed, he will propose to hold the next S-101 meeting (S-101PT5) in conjunction with the ENCWG5 meeting.

10. Close of Meeting

The Chair thanked all members for their contribution.

Annex A

Agenda

Document Number Prefix	Agenda Item	Agenda Item / Document Title	
1. Opening and Administrative Arrangements			[Armstrong]
S-101PT4	1.1	List of Documents	
S-101PT4	1.2	List of Participants	
2. Approval of Agenda and Actions from Higher Bodies			
S-101PT4	2	Agenda	[Armstrong]
S-101PT4	2.1	S-101PT Actions from HSSC11	[Armstrong]
S-101PT4	2.2	S-101PT Actions from S-100WG4	[Armstrong]
S-101PT4	2.3	S-101PT Way Forward (from HSSC11)	[Armstrong]
3. S-101 Components			
S-101PT4	3.1	S-101 Main Document	[Armstrong]
S-101PT4	3.2	S-101 DCEG	[Wootton]
S-101PT4	3.3	S-101 Feature Catalogue	[ ]
S-101PT4	3.4	S-101 Portrayal Catalogue	[ ]
S-101PT4	3.5	S-101 Validation Checks	[ ]
S-101PT4	3.6	S-101 Data Encryption and Authentication Guide	[ ]
4. S-101PT Reports			
S-101PT4	4.1	Report on the Status of the IHO Registry	[Wootton]
S-101PT4	4.2	Report on the Feature Catalogue Builder Application	[Baek]
S-101PT4	4.3	Report on the Portrayal Catalogue Builder Application	[Baek]
S-101PT4	4.4	Update on the S-57 to S-101 Convertor	[ ]
S-101PT4	4.5	SPAWAR - S-100 Viewer – Status update	[Stamenkovich]
S-101PT4	4.6	KHOA - S-100/S-101 Viewer – Status update	[Baek]
S-101PT4	4.7	S-101 Test Datasets	[ ]
S-101PT4	4.7.1	S-101 Conversion Practice	[Baek]
S-101PT4	4.8	S-57 to S-101 Conversion Study	[Pritchard]
S-101PT4	4.9	DQWG - QOBD Visualization and Validation Checks	[Broekman]
S-101PT4	4.10	S-100 Data Protection for S-101 ENC distribution services	[Sandvik]
S-101PT4	4.11	NCWG activities affecting S-101 development	[Hovi]
S-101PT4	4.12	S-57 to S-101 Portrayal Gap Analysis	[ ]
S-101PT4	4.13	S-101 UML Model	[Wootton]
S-101PT4	4.14	NIWC Test bed Report	[Stamenkovich]
S-101PT4	4.15	S-101 Validation Checks Update	[Cardoso]
5. S-101PT Proposals			
S-101PT4	5.1	Offshore Solar Farms	[Meurink]
S-101PT4	5.2	DCEG Changes for S-101 Edition 2.0.0	[Wootton]
S-101PT4	5.3	Proposal of Alternate Options for Display Scale	[Bartlett]

S-101PT4	5.4	Quality of Horizontal Measurement	[Mouden]
S-101PT4	5.5	Sector Extension Portrayal Attribute	[Stamenkovich]
S-101PT4	5.6	S-101 Additional Portrayal Considerations	[Wootton]
6. General Topics			[Armstrong]
S-101PT4	6.1		[ ]
S-101PT4	6.2		[ ]
S-101PT4	6.3		[ ]
7. Any Other Business			[Armstrong]
S-101PT4	7.1		[ ]
S-101PT4	7.2		[ ]
8. Review of Meeting Actions			[Armstrong]
9. Date and Venue of Next Meeting			[Armstrong]
10. Close of Meeting			[Armstrong]

Annex B

List of Participants

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Annex C

List of Actions

No	Ref	Action	Who
1	2.1	Monitor the outcomes of the DQWG test regime and report any S-101 relevant issues to the S-101PT.	Chair
2	3.5	Denmark and IHO Sec to investigate incorporating the S-100 product validation checks into a database and developing a GUI interface.	BC/TP
3	4.4	IHO Sec to include entries in the S-57 to S-101 conversion spreadsheet for new items included in S-101 Edition 1.0.0.	JW
4	4.11	Draft amendments to the S-101 DCEG to make provision of encoding different colours of floodlighting; and encoding sea grass as a separate feature from seaweed.	JW
5	4.11	Consider how to reduce the triggering of "false" alarms in ECDIS through consistent encoding practices. This should be documented in the S-101 DCEG.	Chair-Sec
6	4.12	Provide the spreadsheet identifying the new S-101 data modelling (refer action for Agenda item 4.4) to the NCWG Chair for consideration of the NCWG of new symbology requirements at its next meeting.	JW
7	5.1	Netherlands to draft a definition for "solar farm" and submit to the Registry Manager (for registration). Registry Manager to include the new item in the DCEG.	AM/JW
8	5.2	Continue application of draft changes to the S-101 DCEG in line with the changes approved by the S-101PT4 meeting and changes to the FCD Register. For further review at S-101PT5.	JW
9	5.2	Discuss additional encoding guidance for the population of the depthRangeMinimum attribute for isolated shoal depth areas.	JW/AS/MH/RF
10	5.3	Propose to the S-100WG Chair to include an item on loading strategy to be discussed at the next Test Strategy meeting.	MB
11	5.4	Submit paper 5.4 identifying inconsistencies (with definitions) to the next DQWG.	CM
12	5.5	Improve the wording describing sector light extension as described in paper 5.5.	NIWC/JW

13	5.5	Conditional Symbology Procedure needs to be developed for item 2 in paper 5.5.	HA/HP/JW
14	5.6	Sub-WG to work on refining the current symbols, line styles, sounding structure/portrayal, colours/palettes etc… . User feedback is to be sought as part of the work. [Members: IHO Sec, IALA, Carnival, Germany, Teledyne-Caris, IIC, NZ, KHOA, US (NOAA), US (NGA), Netherlands (DGWG Chair)	Sub-WG