S-102 PT15 Minutes

17 November 2023: 0900 – 1700 (all times are UTC+8)

Rendezvous Hotel, Singapore (Symphony Ballrooms)

Agenda Item	Subject	GitHub Issue	Actions	Responsible for action	Target date
17 November 2023
Topic A: Incidentals
A.1	Welcome/ Housekeeping	N/A	N/A	N/A	N/A
A.2	Review of S-102PT14 Minutes/Pending actions	N/A	N/A	N/A	N/A
Topic 1: S-102 PS (Major Issues)
1.1	Portrayal Catalogue Development	49, 48	Develop PC. Target is for S-102 ed 3.0. Any major changes between editions in FC will be distributed to NIWC from Chair.	NIWC/Chair	March 2024
1.2	MPA concern that the "high-colour" portrayal of S-102 data is not entirely satisfactory when implemented.	N/A	Consider improvements of the PC and how it can be better presented. PT will pay attention to this input and keep close communication with the Singapore Lab.	PT	N/A
Mid-session Tea Break -1000 to 1020
1.3	Validation checks annex	59, 50	There will be a continued discussion on validation checks (including holes and no data areas).	PT	Continually
1.4	BSH Uncertainty presentation Including: 1. Associated redline changes 2. Remove abbreviations 3. Proposed abbreviation change (from SK to PRVTK).	8	1. The proposal was **accepted**. The S-102 PS will have two options for uncertainty: One with different uncertainty values in the dataset. The other one where uncertainty has a common min-max value. Before implementation in S-102 PS it must first be included in S-98 Annex C. (a) Chair to consult JP on content of paper to be submitted to S-98. (b) A paper will be sent in before S-98 next meeting. 2. **Decision** to remove unused abbreviations. 3. Connected to no. 2 and will be removed.	1. (a)Chair (b)Chair 2. BSH 3. BSH	1.a. ASAP 1.b. Paper for S-98 in December 2023. 2. Completed shortly after the meeting. 3. (Made moot by 2)
1.5	BSH Change Proposal (*QualityofSurvey to QualityofBathymetryCoverage*)	N/A	Registration of *QualityofBathymetryCoverage* in the GI Registry successful. Changes in PS will be made accordingly. BSH to provide submission content to Vice Chair	BSH	March 2024

1.6	BSH-led discussion on Uncertainty Registration	N/A	1. Chair will send email to Jeff to request Vice Chair's appointment as IHO GI Registry submitter. 2. VC will send clarification proposal to GI Registry, to add 'Uncertainty' in Data Dictionary Register under Bathymetry Coverage.	1. Chair 2. Vice Chair	1. Completed shortly after the meeting. 2. ASAP
1.7	SMA presentation on grid cell/cell area updates	29	A redline will be added to GitHub issue #29. Changes in the PS will be made accordingly.	SMA/Chair	ASAP
1.8	SMA Proposal to remove Annex F	61	**Decision** to remove Annex F.	Chair	ASAP
Lunch - 1200 to 1300					
Topic 2: S-102 PS Other Issues					
2.1	PRIMAR paper on *ReplacedData* and *DataReplacement*	N/A	Proposal **accepted**, provided the removal of the text regarding S-100 ed 5.1. Redline submission in GitHub. Chair will review presentation and consult Svein if necessary	Chair/PRIMAR	January 2024
2.2	Naudeq Proposal to change notation convention for transparency	63	The current version of PS will be reviewed and all sections regarding transparency will be removed. Ensuring consistency in language with opaqueness.	Chair	Completed shortly after the meeting.
2.3	Discussion on data quality portrayal considerations. (Email conversation)	N/A	There will be a continued discussion on this subject. The data quality portrayal should match the portrayal within the S-101 ENC to ensure consistency.	PT	Continually
2.4	Proposal to change references to vertical datums	60, 53	GitHub issue #60 - List the vertical datums. GitHub issue #53 - It was **approved** to change the text in clause 5.1, 2nd paragraph.	Issue #60 BSH Issue #53 Chair	#60 Completed shortly after the meeting. #53 ASAP
Topic 3: Timelines and Outstanding Tasks					
3.1	Discussion on timelines between now and Ed. 3.0 To include how we ensure continuity of effort beyond the life of this PT	N/A	A GitHub issue will be created to discuss more on the case where a S-102 product contains more than one vertical datum.	BSH	ASAP
3.2	Assignment of outstanding tasks	N/A	N/A	N/A	N/A
3.3	Discussion on how best to capture outstanding items for non-nav spec	N/A	Create new GitHub issues with a non-nav label.	Chair/PT	Completed shortly after the meeting.

Mid-session Tea Break – 1500 to 1520					
Topic 4: Discussion About GitHub/Metanorma					
4.1	Chair report on progress. 1. Making draft-dev version available alongside in-force version through HTML page 2. Problem with insufficient image sizes in rendered document 3. Quality of formatting of the standard document 4. Deciding how to account for artifacts other than PS document components	57, 52	Information from Chair. S-102 PT have continued support from Ribose. A link to a GitHub user guide: https://docs.github.com/en/discussions/quickstart	Chair/ Ribose	Continually
Topic 5: Test bed reports					
5.1	SMA demonstration of Baltic Sea E-nav project	N/A	Progress report from the project.	N/A	N/A
5.2	NOAA test/evaluation files	N/A	-	N/A	N/A
5.3	BSH demonstration of S-102 Data Management using QGIS	N/A	Presentation on QGIS plugin.	N/A	N/A
Topic 6: Issues Arising During S-100WG8					
6.1	Placeholder	N/A	-	N/A	N/A
Topic 7: Misc., next meeting					
7.1	Plans for Next Meeting	N/A	29th and 30th of January 2024 S-102PT16.		
7.2	Review of minutes and actions	N/A	After review of minutes and action there was a **decision** to skip ed. 2.3. The aim for spring/summer 2024 is ed. 3.0.	N/A	N/A

Agenda Item A1 and A2.

Chair (Lawrence Haselmeier) welcomed everyone to S-102 PT15. He thanked everyone for joining, both in person and those on VTC. Then it was a short introduction of the leadership team (Chair Lawrence Haselmeier (USA), Vice-Chair Lynn Patterson (Canada), Secretary Anna Wall (Sweden)). The agenda for the day was presented. There were no objections or comments to the agenda.

The S-102 Secretary went through last meeting's (PT14) minutes and pending actions. It was concluded that many issues have been completed in GitHub and Chair is pleased about the progress. A minor amendment will be made in the PT14 minutes regarding a typo.

Agenda Item 1.1 Portrayal Catalogue Development.
Two major items occurred during S-100WG8.

1. S-100 is moving to edition 5.2. This gives S-102 more time to complete operational edition 3.0. The aim is still March 2024 for completion. Chair pointed out that PT will aim to have work done as soon as possible but there will be time to finalize the text and changes.

2. KHOA has updated the PC builder. A question to the PT was if there is a need to consider this new builder for the development of S-102 PC.

General manager at MPA commented that they are also looking into the portrayal of S-100 products, for example how to portray two different resolutions. Further analysis will point out if there are any differences, and how it will look when adding S-101. MPA work closely with the Korean institute. This is also to make sure there are no duplicate of efforts. S-102 PT will pay attention to this and keep close communication with the Singapore Lab.

NIWC mentioned that a sample of the PC have been provided by them but so far there has been very little feedback. It was made available in June 2023 to the PT.

NIWC asked what is being used in KHOA's Portrayal testbed. KHOA explained that it is a personal one, not open. They are also working to solve a technical issue, so they are not using a Portrayal Catalogue solution at the moment. The issue is in reference to the use of several layers, which is also connected to Duel Fuel. This adds complexity. The testbed is hard-coded and used only for KHOA's internal work.

NIWC indicated that the PC for S-102 can be a simple solution, since the content has a low feature attribute count.

Another question for KHOA was if it is possible to use Basic Portrayal Catalogue, that was presented during S-100WG8. This, however, is for Product Specifications that have no PC. It is the minimum of displaying and it is not yet for grid format, but this is something KHOA will consider in their development.

Chair asked if NIWC can start on the progress of a PC, not a complex one but to the stage of a functioning one. He also inquired what resources they need. If NIWC can receive the development from KHOA, where grids are included, they can start. KHOA explained that they may have it prepared for the next TSM in March 2024.

There was a following discussion on XSLT or Lua language. Chair of S-100WG explained that there are disadvantages and advantages with both languages. There were those within the PT that had a preference for one or the other, however a conclusion of the discussion was that both are simple enough for S-102. An objective is to set up at time when the PC experts meet and have a discussion.

Around March a draft should be presented, and tests can begin after that. Any major changes between the FC editions will be provided to NIWC by the Chair.

General manager at MPA spoke about time constraints and how the portrayal can be better represented in about five years. He urged for testing new ideas. Chair will ensure PT present tests and give this input attention. Chair also mentioned that any suggestions are welcomed. Another input to this was that PTs may have to improvise, since the PS and S-100 are not that far in development yet.

Agenda Item 1.2 MPA concern that the "high-color" portrayal of S-102 data is not entirely satisfactory when implemented.

See above discussion in item 1.1.

Agenda Item 1.3 Validation checks annex.

From S-100WG8 it was agreed that a standardized naming convention will be used. A template will be generated for circulation in December and any feedback should be in by January. S-164 will work on coordination of specifications from project teams, as well as cross-product validation checks. A suggestion is to maintain the S-100 validation checks in S-158. The underlying product specifications will be stored as annexes to S-158. More discussion regarding this suggestion will be at the upcoming TSM.

The discussion then moved in to what is considered a hole in a S-102 product. There has to be an agreement to what a hole is, in consideration with underlying S-101. Holes can be either acceptable or not acceptable. The members have to look at S-102 and S-101 in combination and ensure the safety. The users of the products require simplicity. MPA added that, in the Singapore Straits, high density ENC have been used in a project that was completed this year. It is a push for the users and a way for them to see the benefits of S-101. It was further discussed if there could be a minimum size of a hole, or possibly a maximum number of them. It was also stated that the producers of the S-102 products need to be alert of them regardless.

Another input was that this issue is not new. Pilots, for example, have had these issues for decades.

The GitHub issue (#50) shows good examples where there are two different types of holes. It is a good starting point and can be used to create criteria for holes.

Another idea was to have fairways completely filled. However, for Finland holes in fairways are needed, due to reasons of restriction. Finland cannot always produce products without holes.

NOAA added that it may be possible to use the object detection tool Detect Holidays. It scans grids for unpopulated nodes ("holidays"). This option could be investigated more.

The discussion will continue in GitHub (issue #50).

Agenda Item 1.4 BSH Uncertainty presentation.

1.   Uncertainty presentation and Associated redline changes

For some time, discussions have been going on in GitHub regarding this item. It was agreed that Germany make a proposal and redline. The purpose is to store the uncertainty value in a more effective way. Currently it is always linked to each depth value. BSH argue that there is no need to store the same value at each bathymetry value. With this proposal the file size will decrease.

In a case where the data has different values, the min- and max- values has to be filled. If the uncertainty values are the same for min and max it should be omitted in the bathymetry coverage. According to BSH this could save around 14% of the file size. This proposal does not affect the dataset or how to store uncertainty. BSH already have S-102 products that are not entirely filled but yet exceeds the size limit.

BSH then demonstrated how it looks in the HDF5-file. In group F the Depth attribute and the Uncertainty attribute are displayed. It was also demonstrated how it looks like with just Depth displayed. All the information does not need to be at each depth value. In the Object Attribute, it is displayed that min and max have the same value.

A question during the presentation was if this is Mandatory and the answer is that it is Optional. Producers choose one or the other solution.

Many members approved of the proposal. The question of adding this to S-100 was raised but it was decided to add it to Annex C in S-98 as a clarification. The aim is to have the paper sent to S-98 before their meeting in December.

2. Remove abbreviations.

BSH has recognized some abbreviation in section *1.3.3 Abbreviated terms* that are not used in the PS. The proposal is to remove them since they are unnecessary in the PS. There was no objection.

3. Proposed abbreviation change (from SK to PRVTK)

Due to above proposal, the abbreviation SK will also be removed.

Agenda Item 1.5 BSH Change Proposal (*QualityofSurvey to QualityofBathymetryCoverage*).

The registration of QualityofBathymetryCoverage in the GI Registry has been successful. BSH propose changes of all occurrences of feature QualityOfSurvey to QualityOfBathymetryCoverage in the PS. There were no objections.

Agenda Item 1.6 BSH-led discussion on Uncertainty Registration.

The attribute 'uncertainty' is missing in the Data Dictionary for Bathymetry Coverage in the GI Registry. The PT agreed that this is incorrect. The attributes that are listed in the Data Dictionary are only recommended attributes, but it should still be a complete list of the attributes that could be used. To make the correction a clarification proposal will be sent in to the GI Registry by the Submitting Organization Representative. Shortly after the meeting Vice-Chair was chosen as representative.

Agenda Item 1.7 SMA presentation on grid cell/cell area updates.

SMA presented a short update on GitHub issue #29. After PT14 there was a review period. No comments or objections were made so it was decided to go through with the proposed changes.

SMA presented smaller text changes in the PS regarding bounding box. And when looking back at the origin of the GitHub issue, SMA will also include a clarifying image of the bounding box.

SMA will create a redline and add it to the GitHub issue and the changes will be made accordingly by the Chair.

Agenda Item 1.8 SMA Proposal to remove Annex F.

There were no objections to this proposal. It was decided to remove Annex F from the PS.

Agenda Item 2.1 PRIMAR paper on *ReplacedData* and *DataReplacement*.

PRIMAR presented their paper at the meeting. The suggestion is to add two attributes: replacedData and dataReplacement in S-100_DatasetDiscoveryMetadata. PRIMAR want this to be mandated in the different Project Teams. S-101 has accepted this proposal.

There were some follow-up questions and discussion. The proposal was accepted, provided the removal of the text regarding S-100 5.1**.**

Agenda Item 2.2 Naudeq Proposal to change notation convention for transparency.

Chair presented this item from GitHub issue #63. The objective was to change the sentence and use opaqueness. Table 3 has to be amended. Chair will review the current version of the PS and remove all sections regarding transparency, assuring consistency in the language with the other specs and previous action (PT14) to remove Dusk and Dawn.

Agenda Item 2.3 Discussion on data quality portrayal considerations.

This item contained some general discussion on portrayal of S-102 products. It is likely that some things will be included in S-98, specifically that involves the contours. Though input must come from PT. There will be a continued discussion on this subject.

Agenda Item 2.4 Proposal to change references to vertical datums.
Regarding GitHub issue #60, several members agreed with the proposal. A specific list from 1-49 will be added to the PS. A check is needed before if any of them are missing.

Regarding GitHub issue #53, it was accepted to change the text in clause 5.1 2nd paragraph.

Agenda Item 3.1 Discussion on timelines between now and Ed. 3.0.

It was established that S-100 ed 5.2 will be available 1 July 2024. Which means that S-102 PS ed 3.0 has to be ready by then. It also means that the PT have a little more time now.

The feature catalogue is prioritized. There was a question to PT if there are any other major changes needed to be entered. BSH mentioned vertical datums and the issue when a S-102 product covers more than one datum. For example, a product that contains a lock. Today the S-102 PS only allow one vertical datum. This issue and potential solutions needs to be discussed more. A GitHub issue will be created for further discussion.

Agenda Item 3.2 Assignment of outstanding tasks.

Nothing was raised during this item. Chair invited the PT members to assist and pitch in and as much as possible in the work.

Agenda Item 3.3 Discussion on how best to capture outstanding items for non-nav spec.

One suggestion was to use GitHub issues to capture non-nav matters. These GitHub issues can be a place to record concerns, questions, cases, etc., with an additional short summary. A non-nav label can also be created for these issues.

There was a question if these GitHub issues really should be in another project. Not to distract the focus from the nav project, the PT decided to still keep the non-nav in the same repository in GitHub. Migration to a new repository can happen at a later time.

Agenda Item 4.1 Chair report on progress regarding GitHub/Metanorma.

Chair reported on progress regarding GitHub and Metanorma. There might be an error when extracting the PDF version of the PS. It was discovered that some pages are missing or in the wrong order. However, in the Word version the pages are correct. Ribose will keep on supporting S-102PT with any incorrect parts.

A link was posted in the VTC chat to GitHub for beginners that can be useful for members. Chair also stated that if anyone has any issues or trouble, just raise them to him or in GitHub.

Agenda Item 5.1 SMA demonstration of Baltic Sea E-nav project.

SMA presented the latest progress from the Baltic Sea E-nav project. There are so far no demonstrations since the project is still in very early stages. There was a kick off meeting 6-7 November in Stockholm. Partners within the project are:
-Hydrographic Offices: Sweden (coordinator), Finland, Estonia, Latvia, Germany, Denmark. Lithuania and Poland are associated partners.

-Academia: RiSE (SE) and SAMK (FI)
-Private sector: ECDIS OEM – Furuno
-Meteorological agency: Finnish Meteorological Institute.
-RENCs: Associated: PRIMAR, IC-ENC

The goal is to develop S-101, S-102 and to some extent S-104 products and run tests and further refine the products. It will be a commercial roll out 2026.

Agenda Item 5.2 NOAA test/evaluation files.

No input by anyone on this item.

Agenda Item 5.3 BSH demonstration of S-102 Data Management using QGIS

BSH had a presentation on how they use QGIS (Open Source system) and their developed plugin solution to display S-102 data.

The bathymetry layer is by default displayed. The user can then choose which items to be switched on. The metadata is also displayed, with a connected attribute table. Depth value can also be easily presented. For those who are interested, BSH can distribute the installation file.

Agenda Item 6.1 Placeholder for any issues arising during S-100WG8.

No other issues were raised during this item that had not already been discussed during the meeting.

Agenda Item 7.1 Plans for next meeting.

The leadership team suggested to have the next PT meeting (PT16) the 29th and 30th of January 2024. It will be a VTC meeting.

Chair will ask S-100WG Chair if S-102PT17 can be held in conjunction with S-100WG9 in Genoa, Italy November 2024. Focus may be on the non-nav part at this meeting.

Agenda Item 7.2 Review minutes and actions.

The minutes and actions for PT15 where presented by the Secretary.

At the end of the meeting there was a **decision** to skip ed. 2.3 and aim for ed. 3.0. Chair encouraged the use of GitHub, thanked everyone for participating and then closed PT15.