Paper for Consideration by S-101PT 5

S-101 Project Team, Work Plan

Submitted by:	S-101 PT Chair
Executive Summary:	This paper proposes a Work Plan to progress the activity of the S-101PT to deliver a further version of S-101 which moves us towards achieving the objectives set in the PT TORs. It additional proposes further activities to support achieving these objectives and new methods to support effective delivery.
Related Documents:	S-101 Edition 1.0.0, S-101 PT TORs
Related Projects:	S-100

Introduction / Background

1. The S-101 Project Team has three clear objectives set out in its terms of reference[1].

    i)   Develop the S-101 Product Specification to S-100 Readiness Level 4
    ii) Ensure that S-101 meets the needs for SOLAS navigation
    iii) Coordinate the development of S-101 Test Data Sets for type approval

S-101 1.0.0 was published in 2018 for development and testing purposes and this was a major achievement. However, until S-101 reaches greater maturity and completeness there are significant limitations to the test and development work that can be achieved.

The S-101PT TORs also include a draft workplan which includes 3 work items.

A1 Develop and Finalize Edition 2.0.0 of S-101 ENC Product Specification
A2 Monitor the implementation of S-101 to S-100 Readiness Level 4
A3 Review the S-101 Value Added Roadmap annually

Reflecting these objectives and work items, this paper proposes a more detailed work plan in order to deliver an Edition 1.1.0 of S-101 during 2021. This will address many of the missing elements and support more comprehensive and meaningful testing. S-100 is not yet sufficiently mature in itself to begin work on S-101 2.0.0 but 1.1.0 will act as a significant step towards that goal.

Analysis/Discussion

2. Although S-101 1.0.0 was published a number of components remained missing or incomplete. These can be briefly summarised as shown in table 1 below (See S-101PT5-4 for detailed updates);

Footnote 1 - S-101 PT Terms of Reference - https://iho.int/uploads/user/Services%20and%20Standards/S-100WG/MISC/S-101%20PT%20TORs.docx

Component	Status	Comments
Product Specification Main Document	Complete	Complete but subject to refinement.
Data Classification and Encoding Guide	Complete	Complete but work to further evolve the data model and encoding guidance is required. A number of outstanding comments remain.
Feature Catalogue	Complete	Complete although some aspects may require further refinement.
Portrayal Catalogue	Partially Complete	Reflects S-52 and some symbology not present. Work to develop new/refined symbols is required.
Validation Checks	Not Included	Without these the production of test datasets is limited.
Exchange Catalogue	Partially Complete	Sufficiently complete to support limited testing but work is underway at the S-100WG level.
Data Protection	Partially Complete	Part 15 was present in S-100 4.0.0 but further evolution is likely.
Interoperability Catalogue	Not Included	S-98 is still being developed.
Alerts and Indications Catalogue	Not Included	This component is not yet present in S-100.

Table 1 – high level summary of S-101 1.0.0 components

As shown in table 1 some components remain dependent on the stabilisation and extension of S-100. Therefore, it is proposed that S-101 1.1.0 will reflect S-100 4.0.0, this will still allow progress in some areas and refinement of the data model and data production guidelines which are less affected by these components. This should also assist with implementation as production systems currently supporting 1.0.0 should be able to be configured to support 1.1.0. Table 2 shows these components in relation to the new S-100 Readiness Levels;

	Dec 2018		Jun 2021	Dec 2022			From Mid 2023 ??
Readiness levels	Level 1		Level 2	Level 3	Level 4	Level 5	
S-101 Edition	1.0.0		1.1.0	2.0.0			
Required product specification component							
Main Prod. Spec. Document	X		X	X	X	X	
A Default encoding	X		X	X	X	X	
Feature Catalogue	X		X	X	X	X	
Data Classification and Encoding Gudie (DCEG)	X		X	X	X	X	
Portrayal catalogue			X	X	X	X	
Validation tests and test datasets			\	X	X	X	
Exchange Catalogue			\	X	X	X	
Data protection (compression, encryption and digital signatures)				X	X	X	
Interoperability catalogue (Scope TBD)				X	X	X	
Alerts and Indications catalogue					X	X	

A draft work plan was included in S-101PT letter 1/2020 and a further proposed version is present at annex A of this document. This plan seeks to plan the activities required to deliver 1.1.0 and meet Readiness Level 2. It includes dependencies and ownership but some of the dates are provisional. At this stage the PT is invited to endorse the scope and sequence of the tasks.

3.   S-101 being complete and robust is a valid goal, but unless S-101 meets (or exceeds) end user needs and can be produced by hydrographic offices it will not become an operational standard. Therefore, in support of objective ii and work item A2 activities will be needed to engage with end users and ENC producers. The ENCWG recently formed a sub-group on S-57 to S-101 conversion and that may be the logical route to achieve engagement for the production aspect. For end users a considered approach needs to be developed in consultation with end user representatives. This aspect may require a proposal to HSSC. At this stage it is proposed that a more detailed plan for these two areas is developed. This work can logically follow the drafting of S-101 1.1.0.

4.   Objective iii) relates to test datasets for type approval. Although S-101 1.1.0 can usefully provide further test datasets until more stable versions of S-100 and S-98 are in place it would not be possible to prepare a set of datasets to support type approval. Therefore, it is proposed that this will be a focus for S-101 2.0.0. Test datasets for validation will be produced as far as possible but these serve a different purpose.

5.   As S-101 moves towards an operational version effective processes for maintaining the standard need to be adopted and tested. To support Portrayal changes a new web-based form is proposed and we will seek to adopt this model along with a formal checklist to be used for the preparation and review of the new edition of the product specification. Given the priority set out by HSSC for S-101 it is proposed to maintain an Issue and Risks log to support awareness of the maturity of S-101 as we move towards an operational version. This will avoid duplication of effort if an issue has already been reported. Clear presentation of the risks will support HSSC in progressing the S-100 Implementation Roadmap.

Recommendation

6.   In order to progress the work of the S-101PT it is necessary to set out a clear work plan to support the development of S-101 1.1.0. The proposed plan will deliver a more complete S-101 specification to support meaningful testing including end user feedback.

Action Required of ENC WG

The S-101PT is invited to:
a. Endorse the proposed work plan included at Annex A of this paper..

b. Endorse an activity to design an engagement ensure S-101 meets end user needs and to support S-101 implementation through engagement with producers and industry to deliver work item A2.

c. Endorse the establishment of a change management process for S-101 to support ongoing maintenance.

d. Endorse the establishment of an Issues and Risks Log to support the delivery of the S-101PT Work Plan.

e. PT members are invited to indicate resource availability to support this work.

Annex A – Proposed S-101 PT Work Plan 2020-2021

A1	Develop and Finalize Edition 2.0.0 of S-101 ENC Product Specification

Intent is to deliver an updated and more complete S-101 1.1.0 during 2021 so that meaningful testing can support a 2.0.0 aligned with a future version of S-100.

Ref	Task	Dependencies	Who	Start	End	Status
A.1.1	**Conduct a review cycle of the S-101 Data Product Specification and DCEG. Includes comment review.**	**None**	**ALL**	**01/10/2020**	**31/01/2021**	**PLANNED**
A.1.2	Process registry changes resulting from review of the DPS and DCEG.	A.1.1	IHO Sec	31/01/2021	28/02/2021	PLANNED
A.1.3	Prepare an updated Feature Catalogue for S-101 1.1.0.	A.1.1/A.1.2	KHOA	01/03/2021	31/03/2021	PLANNED
A.1.4	**Prepare new and updated Portrayal content.**	*A.1.1*	**Port SG**	**01/10/2020**	**31/03/2021**	**IN PROGRESS**
A.1.5	Process registry changes resulting from Portrayal work.	A.1.4	IHO Sec	01/04/2021	30/04/2021	PLANNED
A.1.6	Prepare a complete PC for S-101 1.1.0.	A.1.1, A.1.2	KHOA	01/05/2021	31/05/2021	PLANNED
A.1.7	**Prepare an initial draft set of S-101 Validation Checks. (Critical checks as a minimum)**	*A.1.3/A.1.6*	**VC SG**	**01/04/2020**	**31/05/2021**	**IN PROGRESS**
A.1.8	Prepare content for publication.	*Various*	IHO Sec	01/02/2021	31/05/2021	PLANNED
A.1.9	Conduct pre-publication quality checks.	*A.1.8*	ALL	01/06/2021	31/08/2021	PLANNED

A2	Monitor the implementation of S-101 to S-100 Readiness Level 4

Ref	Task	Dependencies	Who	Start	End	Status
To be developed by early 2021 - Chair to lead						

A3	Review the S-101 Value Added Roadmap annually

Ref	Task	Dependencies	Who	Start	End	Status
A.3.1	Chair to prepare updated draft.		Chair			PLANNED
A.3.2	Conduct a review cycle.	A.3.1	All			

Note 1 - Dependencies shown in italic font are partial dependencies the task can progress without the other task completing but it cannot be completed.

Note 2 - Timeframes shown are subject to refinement, the aim of this version is primarily to agree tasks, owners and sequence. Tasks in bold have firm dates at this stage.