

Paper for Consideration by HSCC

Report on the application of some ISO 9001 Principles in the development of S-101 PS

Submitted by:	HSSC ISO 9001 Cell
Executive Summary:	This paper presents the work done by the HSSC ISO 9001 Cell and some recommendations are proposed to carry on the experiment of applying ISO 9001 for process management.
Related Documents:	-
Appendices	1- GANTT diagram, monitoring the critical path to S-101 Edition 2.0.0 2- S-100 GI registry, increasing resilience
Related Projects:	HSSC; S-100; S-101; DQWG.

Introduction / Background

HSSC13/52

HSSC 13 endorsed the principle of continuing the experiment with the setup of an organisation: the “HSSC ISO 9001 Cell” and with “Project Control Officers (PCO)” as suggested by the HSSC Vice Chair, DQWG and S-100WG/S-101PT. HSSC Vice Chair agreed to be designated as PCO for general activities related to the application of ISO 9001 principles. The S-101 PT Vice-Chair agreed to act as PCO in the cell.

HSSC ISO9001 Cell/S-101 PT are tasked to design and maintain a Gantt diagram for experimentation and risk management purposes.

Progress on HSSC Action Items

ISO Cell has been set up, comprised of S-101 Vice Chair (acting as S-101 PCO), DQWG Chair, HSSC Vice Chair (acting as HSSC PCO of the activities related to the application of ISO 9001 principles).

Three meetings have been held with an active participation of S-101 PT Chair on: 12/08/2021, 16/11/2021 and 3/03/2022.

A GANTT diagram and Risks and Opportunities Management Purposes document are maintained by the S-101 PCO. Meetings enable discussions and agreement on planning, risk assessment and mitigation.

Analysis/Discussion

In this life cycle, delivering S-101 PS Edition 2.0.0 experiences a period of complexity: lack of human resources; number of interconnected activities to be achieved in a short time (liaise with other WG, cross review checks); dependency on S-100 Ed 5.0.0; and DF-ECDIS Governance. As mentioned in the S-101 report, monthly PT executive meetings take place to track progress and conduct management reviews.

During the ISO cell meetings, concerns have been raised regarding the shifting of some tasks and IHO GI Registry development with a potential high level of impact assessed on the deadlines. Appendices 1 and 2 present a review of the situation and some recommendations to mitigate the associated risks.

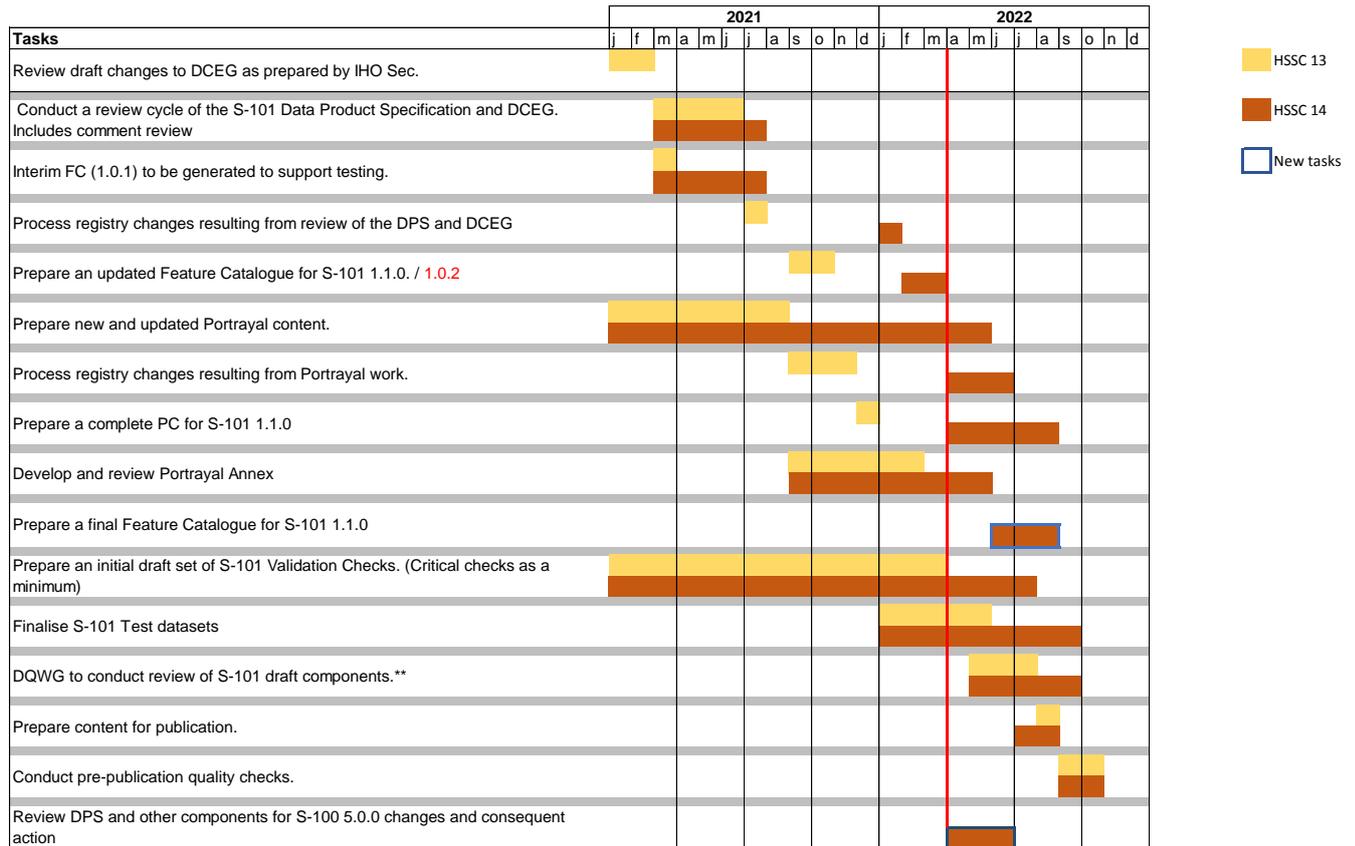
Action Required of HSCC

The HSCC is invited to:

- a. **Note** this paper.
- b. **Endorse** the principle of maintaining the HSSC ISO 9001 cell active, at least until the approval of S-101 Ed 2.0.0; and task the HSSC ISO9001 Cell/S-101 PT to design and maintain a Gantt diagram for experimentation and risk management purposes.
- c. **Address** the issues and shortfalls addressed in appendices 1 and 2.
- d. **Initiate** any further actions as considered necessary.

Appendix 1 – GANTT diagram, monitoring the critical path to S-101 Edition 2.0.0

The comparison between the work plan presented at HSSC 13 and HSSC 14 is shown below :



There is an increase in delays, some of which are of concern, in particular the S-101 Portrayal Catalogue development has been delayed by 9 months since HSSC 13. It is now on the critical path of the project. There is a partial interdependence between the Portrayal Catalogue for S-101 and the baseline symbology for the future paper chart derived automatically from S-101, being developed by NCWG. The resources allocated to progress on these tasks are clearly insufficient and there is a real risk of not meeting the targets set out in the S-100 Roadmap

The registration of the changes affecting the Data Product Specification and DCEG after the review cycle has been delayed of 6 months.

Test data preparation has also been delayed, but the risk can be considered under control with the support of the Special Projects Fund.

From an ISO 9001 perspective, a key takeaway is that the roadmap set out a plan without due consideration of the available resources.

Recommendations

1. Address the risk of not having the S-101 ed 2.0.0 in time:
 - a. Consider to organize quickly a dedicated workshop on Portrayal Catalog
 - b. Explore as a priority how special projects fund could assist with resources to assist with the development of the Portrayal Catalogue

Appendix 2 – S-100 GI registry, increasing resilience

The IHO Geospatial Information (GI) Registry is a fundamental component of S-100 framework, developed and maintained by KHOA, owned by the IHO, and managed by the Secretariat of the IHO. KHOA does high quality work, but as standards become mature, we need to rely on a more stable and resilient infrastructure.

The following concerns have been raised:

- a. Implementation and maintenance of the IHO GI Registry depends on a single provider.
- b. Very few experts are able to use the tools at the IHO Secretariat (in practice, one Technical Standards Support Officer is in charge of maintain Registry content and updating the FC, PC and DCEG).
- c. Traceability of changes, validation workflow: documents are established, shared, and enriched by the S-101PT in a MS Word format, which makes the rigorous monitoring of contributions complex. As an example, DCEG of S-101 is now a document of about 700 pages.
- d. Co-design of new functionalities involving end-users.
- e. Test environment in order to perform User Acceptance Tests (UAT) and approve new releases or versions before deploying operationally;
- f. Multi-language management.

Given the importance of this tool, not only for S-101, and in a perspective of continuous improvement, the ISO cell recommends addressing these weaknesses using the PDCA (Plan-do-check-act) method. The PDCA method aims to mark out the continuous improvement strategy around 4 main stages which are repeated in a cyclical manner:

- Plan: analysis of the situation, the problems encountered and the resources available, and development of a relevant action plan, with key indicators to assess the impact of the results.
- Do: implementation of the action plan with all the actors concerned.
- Check: evaluation of the results thanks to the KPIs and, if necessary, implementation of corrective solutions.
- Act: end-of-cycle assessment. If the objective is not achieved, a new cycle is launched.

Recommendations

In order to increase the resilience of the IHO GI Registry:

1. Carry out an audit on the IHO GI Registry, considering the different aspects: strategic, organizational and technical; in particular review the sufficiency of current resources to operate and support this infrastructure.
2. Propose relevant actions to improve the management of this tool (first step of PDCA method). This could involve training of PT members, additional resources, ...
3. It may be beneficial for an external party to conduct the audit to identify opportunities for improvement, it may be subcontracted; ISO cell in collaboration with IHO Secretariat should draft the terms of reference.