

S-123 Marine Radio Services Task Group (S-123TG) Report March 5, 2024

Introduction

S-123 Product Specifications Edition 1.0.0 was published in January 2019.

NIPWG held a VTC in September 2021 noting that a task group should be formed to update the S-123 Product Specifications. It was only until November 2021 that an S-123 task group (S-123TG) was formed to create a list of changes to update the product specifications to the next version.

This report summarizes the work accomplished by the S-123TG from November 2021 to February 2024. Documentation for these meetings can be found on the [NIPWG Wiki webpage for S-123](#) and the [NIPWG Product Specifications webpage](#) on the IHO website.

Task Group Members

- Bridget Gagné (Canada, CCG): Task Group Lead
- Eivind Mong (Canada, CCG): NIPWG Chair
- Quinn Arruda (Canada, CCG) ([Joined starting TG8](#))
- Philipp Schwedas (Germany, BSH)
- Chunggho Lee (Republic of Korea, KHOA) ([TG1 to TG2](#))
- Jason Youé (United Kingdom of Great Britain and Northern Ireland, UKHO) ([Joined starting TG7](#))
- Mark Podbury (United Kingdom of Great Britain and Northern Ireland, UKHO) ([TG6: SME Guest](#))
- Neil Salter (United Kingdom of Great Britain and Northern Ireland, UKHO) ([Joined starting TG7](#))
- Iliia Maslov (Bureau Veritas Marine & Offshore) ([Joined starting TG18: SME Guest](#))
- Hugh Astle (Teledyne Caris)
- Jonathan Pritchard (IIC Technologies)
- Shwu-Jing Chang (National Taiwan Ocean University)
- Raphael Malyankar (Portolan Sciences)
- Briana Sullivan (University of New Hampshire) ([TG1 to TG2](#))

Work Accomplished

The S-123TG held 20 monthly meetings from December 2021 to January 2024, inclusively. The initial cumulative feedback collected to date document was 33 pages in length. The conclusions and additional feedback has increased the document to 61 pages (~85% increase).

The S-123TG had extensive discussions regarding remodelling certain elements of the Product Specifications to better respond to the feedback collected and is captured in a separate presentation document consisting of 23 slides.

Over the 8 quarterly NIPWG meetings held over 2022 and 2023, NIPWG members were kept up to date about the status of the S-123TG and work accomplished, as well as any decisions made regarding changes to the S-123 Product Specifications. The S-123TG also took this opportunity to ask the NIPWG members for additional guidance and the appropriate next steps to take regarding the proposed changes presented.

Recommendations

The S-123TG proposes the changes as captured in the [cumulative feedback collected to date document](#) and the [data model revision document](#) to increment the S-123 Product Specifications from Edition 1.0.0 to Edition 1.1.0.

In addition, the new version of the S-123 Product Specifications will align with S-100 Edition 5.2.0, and will elaborate the chapter on Data Quality to align with the current updated guidance as per S-97 Part C.

Impacts of the Work

According to the [S-100 Implementation Priorities](#), the S-123 Product Specifications is part of “Phase 2 / Route Planning” with no specific date as of yet on when it should be operational.

As agreed upon during [NIPWG-10 in September 2023](#), the next version of the S-123 Product Specifications is to include new feature types and information objects to capture “connectivity subscription” information as brought up by an SME from Bureau Veritas (BV) Marine & Offshore. As concluded in [BV’s input paper](#), “the safety issue related to the provision of the coverage zones for connectivity used in remote control with a mapping in ENC is pertinent for the emerging autonomous and remotely operated shipping both inland and at sea. Creation of the dedicated data objects in S-123 is a mitigation for the risk of the loss of remote control. Availability of the standardised Product Specification from IHO and of a roadmap for the implementation is important for the industry.”

BV has indicated that in the rule note [NR467 Rules for the Classification of Steel Ships](#), there is a reference to S-100 in [Section 3: Ship-Shore Communication](#) (of Part F: Additional Class Notations, Chapter 4: Integrated and Digital Systems):

4.5 External communication provider

4.5.1 The coverage charts are to be provided on board and on shore in the ROC. A digital interface is to be provided to plot the quality-of-service data for each communication device on the connectivity coverage charts, including the signal strength, outages, and the name of the external provider, as measured during the transit in the areas.

Note 1: If cellular networks are used, the SLA should provide at least a single Guaranteed Bit Rate subscription which provides a latency below the latency threshold. It is recommended to choose the satellite communication provider’s subscription with the equivalent of a Guaranteed Bit Rate, if available.

Note 2: It is recommended to choose SLA which includes provision and regular updates of the connectivity coverage charts indicating the signal strength in a format suitable for [Electronic Navigation Chart overlay as per IHO S-57 or S-100 standards](#).

Note 3: The ad hoc networks are recommended for the areas with a high risk of the traffic congestion in the public wireless networks.

BV mentioned that once the S-123 Product Specifications has been updated to include connectivity subscription, the rule note mentioned above will be replaced accordingly. BV clarified that the information in “Note 2” acts as a recommendation, and BV does not expect compliance with it.

BV is prepared to test S-123 data with the connectivity information in cooperation with various actors (shipowner, national producing authority, connectivity provider, and ECDIS manufacturer). This should be factored in when determining timelines and the urgency for getting the next version of S-123 ready.

Future Work

There are still various aspects of the Product Specifications that will need to be worked on in order to increment the version to Edition 2.0.0 such as implementing a portrayal catalogue, updating the validation checks, creating test datasets and conducting an impact study. According to the latest version of the [S-100 Timeline for the Prioritized IHO Product Specifications](#) (July 9, 2023), development of Edition 2.0.0 of the S-123 Product Specifications is to start at the beginning of 2025 to allow time for the development of portrayal.

Additional elements to consider including in the Product Specifications would be an exchange catalogue, sample datasets, multilingual support, data protection, interoperability catalogue, and underlying schemas and example resources.

Action Required of NIPWG

NIPWG is invited to note this report, as well as review and endorse the proposed changes as recommended by the S-123TG.