2nd Joint IHO/IALA Workshop on S-100/S-200
Annapolis, United States of America
9 to 13 September 2024

Contribution to the IHO Work Programme 2024

Task 1.1.6   Maintain relationship with IALA. Joint workshop for S-100.

High level summary (can be used for posting on social media. Please provide concise lists in bullet point format):

- The workshop addressed several key topics, including identifying training gaps in S-100 courses for mariners and internal authorities, as well as technical gaps within the S-100 infrastructure. Participants also reviewed and provided recommendations for updating IHO and IALA documentation on technical requirements for managers. The need for improved documentation of Aids to Navigation product specifications was highlighted, along with discussions on technical issues, such as schema validation impacting GML-based products.
- Key outcomes included consensus to align S-125 portrayal with IMO Circular 243. The significance of SECOM (Secure Common Data Exchange Network) and the MCP (Maritime Connectivity Platform) in data distribution and security was highlighted. It was recommended that IHO and IALA develop reference materials to support implementors. SECOM's potential for S-100 services was demonstrated, a framework for improving shore-to-ship communication was discussed and addressing data delivery latency was suggested.
- The workshop was essential for advancing S-100 and S-200 implementation, addressing both technical and training gaps, and ensuring continued collaboration between IHO and IALA to enhance future maritime safety and navigational systems.

Details:

During the opening session, Francis Zachariae, IALA Secretary-General, welcomed participants to the workshop, noting the strong interest with 84 experts attending. He provided an update on IALA's new status as an Intergovernmental Organization and expressed hope for productive outcomes leading to harmonization in S-100/200 development. He thanked CMTS, the Steering Committee, IHO, and sponsors for their contributions. Zachariae emphasized the potential of S-100 to harmonize the maritime sector's digital future beyond ECDIS.

Dr John Nyberg, IHO Director, welcomed participants and emphasized the strong partnership between IHO and IALA, built on mutual respect and shared goals. He acknowledged past collaborative efforts in promoting safe navigation and discussed the ongoing focus on developing and adopting S-100 standards. Dr Nyberg highlighted the upcoming milestones and challenges in achieving global S-100 data coverage. He stressed the importance of collaboration, training, and interoperability among stakeholders.

The workshop began with presentations on various topics including NOAA's Precision Marine Navigation, the implementation of S-100 in the Baltic Sea, the IALA S-200 series product specifications, training initiatives, activities from the IHO-SGP Innovation and Technology Laboratory, and implementation examples from Norway, Denmark, Korea, and the U.S. on S-124/S-125.

Over the subsequent days, participants were divided into three working groups (WG1 - Operations, WG2 - Technical, WG3 - Training) to address key areas of focus.

Working Group 1 (Operations):
Review the actions identified during the first workshop in 2020 and implement necessary follow-up steps and Identify gaps relating to portrayal within various product specifications related to Aids to Navigation and VTS product specifications. The outcomes from the WG1 are followings:

- Contents of S-101 data model should be evaluated to ensure all information once contained in S-125 has been accounted for. This should enable S-101 product to create the list of lights.

- With regards to AtoNs, S-124 is intended to be used for time-critical, navigationally significant information, in accordance with existing S-124 definitions for Marine Safety Information (MSI).

- S-125 contains AtoN changes (in the form of Advance Notice of Changes (AC), Proposed Changes (PC), Temporary Changes (TC), and Discrepancies (DC)). S-125 is a "derivative" dataset and all features and attributes must also appear in S-201. Navigationally significant information is included in S-125 product. Both S-124 and S-125 are MSI.

Working Group 2 (Technical):
Better documentation of the intended use of the product specifications and how it all works together was requested since a number of participants who were not familiar with the intended plans noted the lack of such descriptions. Some gaps that affect the implementation of all GML based product were discussed and interested parties were invited to submit concerns to the upcoming meeting of S-100WG.

Consensus was reached for IHO and IALA to dedicate more efforts to facilitate testing of the S-100 based service. It was also noted that the IHO-Singapore Lab could be a good venue to collect testbed outputs for review and facilitate further testing to resolve any identified issues or gaps.

Significant time was dedicated to discussing SECOM and MCP. The current IHO security scheme was briefly discussed, and several concerns were noted, to which an invite to contribute to the ongoing IHO Security Scheme Project Team was extended. The benefits of SECOM and MCP's Service Registry and Identity Registry concepts were discussed, and it was noted that many of the earlier concerns could be resolved by utilizing SECOM.

A comprehensive review of data distribution and associated security scheme was given by reviewing Hannu Peiponen's input paper to WENDWG14 on the expectations of provision of Electronic Navigational Data Services (ENDS). Several working group members expressed that it was very educational and helpful to better see the full picture of data dis-semination. The outcomes from the WG2 are followings:

- The IHO is recommended to review IALA's international compliance requirements for data and services, including those for non-SOLAS vessels.
- The IHO-SGP lab was invited to identify technical gaps in product specifications and develop a structured testing template.
- The integration of MCP identity management with IHO's system was suggested, focusing on data producer protection, and IALA was encouraged to provide security-related input.
- Establishing a formal notification system for updates to the S-100 standard was recommended to ensure all stakeholders are informed promptly.
- Discussions highlighted key issues in testing S-100 data distribution, including SECOM, MCP, and IHO registry integration.
- It was suggested to retain the current S-124 symbol with enhanced cartographic symbols and to align S-125 symbols with IMO guidelines, while keeping the S-101 symbol unchanged during the dual-fuel period.

Working Group 3 (Training):
The WG3 focused on reviewing and discussing pilot IALA S-200 courses and identifying training gaps in the S-100 starter course for both mariners and internal authorities. Technical training gaps within the S-100 infrastructure were also documented, with recommendations made for IHO and IALA to address them. Additionally, suggestions for amending IALA and IHO documentation to define technical knowledge requirements for managers were provided. The outcomes from WG3 are as follows:

- Identifying knowledge gaps related to S-100 and forthcoming changes within the maritime community is crucial to tailor future training programs.
- Informal communication methods, such as multimedia and social media, were suggested for S-100 outreach, alongside coordinated marketing from IALA and IHO.
- Recommendations were made to refine IMO's STCW training language and include transition training to ECDIS, MSI, and NAEST.
- Significant gaps in technical training across various user groups were identified, necessitating tailored courses for different stakeholders.
- Training should be delivered in multiple languages and adapted to the needs of diverse user groups, including implementors, developers, AtoN managers, VTS authorities, system integrators, policy makers, and end users.
- The need to empower product specification developers and ensure the completion of ongoing IHO, IALA, IEHG, WMO, IOC-UNESCO and NATO product specifications was emphasized.

The workshop provided a platform for discussing S-100 and S-200 implementation challenges and opportunities. Key outcomes included actionable recommendations on operations, technical requirements, and training strategies, which are essential to ensuring the smooth global adoption of S-100 standards and enhancing maritime safety and navigation systems.

Photo

Upcoming meetings:
It was decided IHO and IALA would consider hosting a future workshop together.