

IALA COUNCIL 3rd session



8 - 12 December 2025
Mumbai, India

10 – TECHNICAL ACTIVITIES

10.1 – Committee work organisation

10.1.2.2 Proposal on IALA seminar on D@S International 2025

Note by the Secretariat

1. INTRODUCTION

The Digital@Sea (D@S) initiative is the successor to the former e-Navigation Underway (ENUW) conference series. The ENUW conferences, initiated in the early 2000s, focused on the implementation of e-Navigation, international cooperation, and the evolution of digital maritime services. In 2017, participating organizations established a Coordinating Group to jointly plan and manage the series. In 2020, reflecting emerging technologies such as Maritime Autonomous Surface Ships (MASS), new maritime communication systems, and data-centric navigation services, the series underwent a strategic re-branding and was renamed Digital@Sea.

The updated initiative was structured around three components:

- D@S Conference Series (International and Regional)
- D@S Capacity Building
- D@S Clusters

Participating organizations have included IALA, the Danish Maritime Authority (DMA), the United States Coast Guard (USCG), the Canadian Coast Guard (CCG), the Radio Technical Commission for Maritime Services (RTCM), and the Ministry of Oceans and Fisheries of the Republic of Korea (MOF).

Since adopting the Digital@Sea brand, the conferences have broadened their scope to include S-100 implementation, VDES and maritime connectivity, autonomous shipping, data governance, cyber security, fleet monitoring, and the wider domain of maritime digital transformation.

2. CURRENT STRUCTURE OF THE DIGITAL@SEA CONFERENCE SERIES

2.1 D@S INTERNATIONAL

Hosted by the DMA.

2.2 D@S NORTH AMERICA

Jointly coordinated by the USCG, CCG, and RTCM.

2.3 D@S ASIA PACIFIC

Hosted by MOF.

These combined formats have served as an international platform connecting government bodies, international organizations, academia, and industry to discuss digital navigation, maritime data services, and emerging technologies.

3. DISCONTINUATION OF D@S INTERNATIONAL BY DMA

In 2025, DMA informed the D@S Coordinating Group that it would no longer be able to host the Digital@Sea International conference due to internal governmental restructuring.

This development creates a structural gap in the series and necessitates a reconsideration of the overall future of D@S structure with a conference in North America, in Asia and in Europe. At the same time, the strong recognition of the D@S brand and the pace of maritime digitalization provide an opportunity to modernize and strengthen the initiative.

4. CONSIDERATIONS FOR THE FUTURE

4.1 MAINTAINING THE DIGITAL@SEA BRAND WITH THEMATIC FOCUS

To retain continuity and brand value, future conferences may adopt a theme-based naming format, such as Digital@Sea: [Theme] – [Year] (e.g., Digital@Sea: Resilient Navigation 2027).

This allows the series to preserve its identity while remaining adaptable to evolving technological, regulatory, and policy developments.

4.2 IALA TO ASSUME THE ROLE OF ORGANISING D@S INTERNATIONAL

Given IALA's global mandate and neutral position, it is proposed that IALA take the responsibility to host the 2026 International Conference in seminar format and continue to coordinate the D@S series of conference. The Secretariat will liaise with interested members to host the international conference from 2027 if appropriate.

4.3 D@S CONFERENCES IN 2026

Three conferences are expected to continue as planned in 2026, ensuring continuity, visibility, and momentum while the international format is being redesigned.

2026

- D@S International: A three-day event to be held between 16–20 March 2026 at IALA HQ (subject to Council approval)
- D@S Asia Pacific: To be held between September and November 2026 in Korea
- D@S North America: Scheduled for 6–7 May 2026 in Fort Lauderdale, Florida, alongside the RTCM (Radio Technical Commission for Maritime Services) Conference

2027

- D@S International: Planned for February 2027, with hosting opportunities open to interested Members.
- D@S Asia Pacific: To be held between September and November 2027, taking into account the IALA Conference in India (1–5 November 2027)
- D@S North America: Planned for early May or April 2027

2028

- D@S International: Planned for February 2028, with hosting opportunities open to interested Members.
- D@S Asia Pacific: To be held in the Republic of Korea
- D@S North America: Scheduled to take place in Canada between April and May 2028, further strengthening cross-continental cooperation

5. THE COUNCIL IS REQUESTED TO

Note the information provided, and **Approve** the seminar proposal as set out in the Annex A of this document.

ANNEX A**DRAFT SEMINAR PROPOSAL****DIGITAL@SEA INTERNATIONAL: RESILIENT AIDS TO NAVIGATION SERVICE**

VISION	O4 - Improve the provision and harmonisation of Marine Aids to Navigation globally, through targeted training, technical cooperation, and capacity building initiatives.
PROPOSAL	To conduct the Digital@Sea International 2026 Seminar: <i>Resilient Navigation</i> , bringing together international experts to address technical, operational, organizational, and connectivity-related challenges in building a resilient digital navigation ecosystem. The seminar will focus on the robustness, integrity, and operational reliability of S-100–based services, resilient PNT, cyber-secure data distribution, and the continuity of maritime operations in degraded or disrupted conditions.
PURPOSE	<ul style="list-style-type: none"> • To develop a shared understanding of what “resilient navigation” requires in a digital, data-centric maritime environment. • To examine how S-100/S-200–based services, VDES/MCP connectivity, and secure IP-distribution frameworks contribute to operational resilience. • To harmonise ongoing efforts across IHO, IALA, and maritime authorities to ensure reliable and interoperable digital maritime services. • To identify practical pathways for Member States to achieve robust implementation and strengthen continuity-of-navigation capabilities.
POSSIBLE TOPICS	<ul style="list-style-type: none"> • Ensuring resilience in the S-100/S-200 ecosystem: lessons from trials and testbeds. • Operational reliability of S-124, S-125, S-201, S-211, S-212 and portrayal resilience in multi-PS environments. • S-98 interoperability challenges when services degrade or data sources become unavailable. • Resilient PNT and integration with digital maritime services. • Maritime Resource Name (MRN), identity services and resilient digital trust frameworks. • Cyber-resilience in IP-based distribution and S-100 security schemes. • VDES and MCP as enablers of redundant and fail-over maritime connectivity. • Maintaining continuity of navigation in contested, congested or disrupted digital environments. • Training, capacity-building and human-centred approaches to strengthen resilience on the bridge and in VTS. • Governance and harmonised maintenance cycles that ensure long-term stability of S-100 standards. • The use of IA and the connected cyber risks
OUTCOMES	<ul style="list-style-type: none"> • A consolidated set of recommendations on strengthening resilient navigation capabilities across all digital maritime services. • Proposed amendments to relevant IALA and IHO guidelines, recommendations, and training materials. • A harmonised view of S-100/S-200 validation and implementation steps that ensure service continuity. • Identification of gaps requiring further technical development or inter-organizational cooperation. • A resilience-focused implementation pathway for Member States preparing operational rollouts.

GOALS	<ul style="list-style-type: none"> • Embed resilience as a core principle of digital maritime services. • Support global alignment between IHO and IALA in maintaining robust S-100/S-200 product specifications. • Strengthen the reliability of data distribution, connectivity, and navigation services. • Build Member States' capacity to implement resilient digital navigation infrastructures. • Promote international cooperation to ensure that mariners can navigate safely—even when systems degrade.
WHO	<p>The seminar will invite:</p> <ul style="list-style-type: none"> • IHO and IALA Member States, Industrial/Associate Members • Experts from S-100WG, NIPWG, S-125 TG and other IHO groups • Maritime administrations and hydrographic offices • VTS authorities and port service providers • IEC, CIRM, RTCM, IMO observers • Technology providers, solution developers and research institutions • Cyber-security and resilient-navigation specialists • Stakeholders identified by the Steering Committee
SIZE OF GROUP	It is expected that the Seminar will attract a group of up to 80 persons
WHERE	IALA HQ
DURATION	3 days
WHEN	A three-day event to be held between 16–20 March 2026 at IALA HQ (subject to Council approval)
COST TO PARTICIPANTS	TBD — to be confirmed following venue finalisation and logistical assessment.
PROCESS	Conference type seminar
STEERING COMMITTEE	<ul style="list-style-type: none"> • IALA Committee Representatives: One each from ARM, ENG, VTS, DTEC • IALA Secretariat