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Data Harmonisation in Maritime

# Introduction

This paper proposes that IALA actively contribute to shaping a Global Data Harmonisation Strategy, in line with the harmonisation efforts currently being advanced in the domains of maritime safety and maritime logistics. Harmonised maritime data underpins safety, interoperability, and sustainability, ensuring that all stakeholders benefit from consistent and efficient information exchange.

# benefits of global data harmonisation

The benefits of global harmonisation are evident:

* Safety and efficiency: Consistent data enables safer navigation, enhanced situational awareness, and more efficient planning.
* Environmental objectives: Optimised port calls and harmonised AtoN and VTS data reduce waiting times, fuel consumption, and emissions.
* Catalyst for digital transformation: Harmonisation is not only supportive but also a key driver of digital transition, enabling a future-proof maritime digital infrastructure including the Maritime Single Window and electronic certification.
* Strategic influence: It strengthens IALA’s role by ensuring that its expertise is reflected in international regulatory and technical frameworks.

# international developments

Several international organisations are pursuing initiatives directly relevant to maritime data harmonisation:

* IMO FAL 49 launched a roadmap for a Global Maritime Digitalization Strategy, to be adopted by the IMO Assembly in 2027. A Correspondence Group has been tasked with defining scope, technologies, standards, and stakeholder alignment.
* IHMA is developing a Port Call Data Guideline defining minimum core data elements (e.g., terminal identification, pilot boarding and departure times). These are based on IMO/IHO standards and GLN identifiers, with the aim of improving efficiency, safety, emissions reduction, crew rest planning, and supply chain resilience.
* ISO Technical Committee 8 (Ships and Marine Technology) is progressing work through subcommittees on intermodal communication (SC11), GHG reduction and bunkering (SC25), smart and autonomous shipping (SC26), and ports and terminals (SC27). ISO highlights the need for internationally recognised, committee-based standards to avoid fragmented approaches.
* IALA, in cooperation with IHO, is developing the S-200 series Product Specifications, relevant tools, and training programmes. Building on this, IALA can reinforce its bridging role between navigation, port, and traffic management data.

# ongoing and necessaray works

## Internal work

IALA should ensure that its committees operate in a coherent and coordinated manner:

* ARM: Lead the development of the harmonisation strategy.
* DTEC: Support on digital platforms and trust infrastructure.
* VTS: Address traffic management data elements.
* ENG: Contribute on engineering and PNT issues.

In parallel, IALA should prepare guidance documents, demonstrate harmonised S-200 applications through pilot projects, and continue supporting Member States with training and capacity-building.

## IHMA (ITPCO/PCO)

IALA should also strengthen its cooperation with the International Harbour Masters’ Association (IHMA), in particular with regard to the ongoing work on Port Call Optimisation (PCO).

A first step would be for IALA to review the draft PCO Guide in detail and provide structured technical feedback. This process will allow IALA to identify overlaps between IHMA’s proposed minimum data elements for port calls and IALA’s existing data models, such as S-201 and S-212, ensuring that navigational, port and traffic management data are able to interoperate seamlessly.

In doing so, IALA can promote the alignment of IHMA’s port call initiatives with the broader S-100 framework, thereby contributing to a consistent global standard that benefits both ports and vessels. Importantly, the outcomes of the VTS Committee’s review should be consolidated and, once endorsed by Council, communicated back to IHMA to ensure constructive and practical feedback.

The draft PCO guide has been attached here.



## IMO FAL and EGDH

At the international level, IALA should continue to play an active role in the IMO Correspondence Group on the Global Maritime Digitalization Strategy. This engagement provides an opportunity to contribute IALA’s expertise on aids to navigation, VTS, and maritime communication systems to the wider digitalisation agenda. In parallel, IALA should support the work of the Expert Group on Data Harmonisation (EGDH), ensuring that its own data models are closely aligned with the evolving IMO Compendium, the development of the Maritime Single Window, and emerging electronic certification frameworks.

By pursuing interoperability between IALA’s S-200 product specifications and the standards developed under IMO, IHO and ISO, IALA can ensure consistency across domains and help to avoid fragmentation.

At the same time, it is essential that IALA advocates for the importance of navigation safety and operational efficiency within these discussions, so that the needs of navigation services are not overshadowed by trade- and logistics-driven considerations.

# roles and responsibilities

The PAP Committee should provide overall oversight, ensuring cross-committee coordination and endorsing the harmonisation strategy. ARM should lead the development of the strategy, while DTEC, VTS and ENG provide domain expertise. Externally, close cooperation with IMO, IHMA and ISO will be essential to ensure alignment and avoid duplication.

# proposal and roadmap

It is proposed that IALA formally establish a Global Data Harmonisation Strategy. This strategy should set out a clear vision and objectives aligned with IMO, IHMA and ISO priorities, identify priority data domains such as AtoN and VTS, and provide a framework for alignment across international organisations. Engagement of stakeholders should be achieved through inter-committee working groups, pilot studies and consultation with industry.

The work would be organised in four phases.

In the first phase, ARM would convene an inter-committee working group to draft the strategy and roadmap, engaging with the IMO Correspondence Group and incorporating IHMA and ISO initiatives.

The second phase would define the priority domains and convene joint workshops with IMO, IHMA, ISO, IHO and Member States, leading to publication of a unified IALA guidance document.

In the third phase, IALA would align its S-200 deliverables with international standards and implement pilot projects in areas such as port call, AtoN and VTS systems, with harmonised standards such as MRN, S-201 and S-212 being rolled out.

Finally, in the fourth phase, progress would be reviewed and refined, with ongoing engagement in international initiatives to keep IALA’s work current.

# Action requested

PAP is invited to:

* **Request** the VTS Committee to review the draft PCO Guide as a matter of priority, agree on outcomes, and forward recommendations to Council at its December 2025 session for approval, so that feedback can be provided to IHMA.
* **Endorse** the development of a Global Data Harmonisation Strategy, led by ARM with support from VTS, DTEC, and ENG.
* **Review** the draft Strategy at PAP with a view to refinement and adoption.