




# The IHO-Singapore Innovation and Technology Lab

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## Objectives of the IHO-Singapore Lab

### 01 | Facilitate


The conduct of innovative or investigative projects proposed by IHO Member States(s), IHO organs, or other stakeholders. (including test bedding)

### 02 | Enable

Knowledge creation and foster collaboration to evaluate specifications of global standard setting within the scope of IHO standardization activities

### 03 | Foster

A multidisciplinary and collaborative environment for technical experts to interact learn and promote new solutions and technologies, including collaboration and cooperation with **other international organizations** research and development bodies active in the maritime domain under the guidance of a Governing Board



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## Establishment of the IHO – Singapore Innovation and Technology Laboratory

- Decision at 2nd IHO Assembly, 2020
- Formation of the Governing Board, May 2021
- Launch the IHO-Singapore Lab, Aug 2021
- Developed Webpage for Lab, Sep 2021
- Approved 2 Project and Kick off Meeting of 1<sup>st</sup> Project in Mar 2022
- 2 new projects in-principle approval, Sep 2022



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## IHO – Singapore Lab's Governing Board

- Composition of the Governing Board
- Held 4 Governing Board Meetings



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## Composition of the Governing Board



Abri Kampfer  
Chair  
(Director, IHO)



Thomas Dehling  
Member  
(Chair, IRCC)



Magnus Wallhagen  
Member  
(Chair, HSSC)



Thomas Ting  
Member  
(Host Country Rep)



Yong Baek  
Secretariat  
(IHO)



Parry Oei  
General Manager  
(IHO Lab)



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## Approved Project - Development of S-57 to S-101 Conversion Guidance Document

### Goals of the Project:

- Thoroughly **test and propose refinements** to the "S-57 to S-101 Conversion Guidance" document, produced by the IHO ENC Working Group (ENCWG)
- Use existing conversion tools to **test the Conversion Guidance document** and produce outputs conformant to its contents

Headed by:  
Thomas Mellor, (UKHO)  
Chair ENCWG



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## Approved Project - S-131 Marine Harbour Infrastructure Database

### Goals of the Project:

- Create a **database and interface** that will **improve the information exchange** between harbours and hydrographic offices by acting as a **neutral repository of harbour information**

Headed by:  
Sarah Rahr, Canadian  
Hydrographic Service



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## Creation and test-bedding of ECDIS capable of displaying S-102 Bathymetric Surface (Phase 1) and S-104 Water Level products (Phase 2) on S-101 ENCs

- Interfacing S-102 with S-57/S-101 to explore display options to best match user needs & requirements without cluttering of information, including in conformance with S-98
- Provision of Test-bed infrastructure or Testbed ECDIS which allows display of S-102 onto S-101/S-57 ENCs
- Provision of hardware for Testbed ECDIS



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## Proof of Concept – 1<sup>st</sup> IHO & IALA collaboration to Demonstrate Interoperability of S-101 and S-125 at Sea Using Wireless Updating via 4G/5G Telecommunications Links

The Key Objectives are to :

Support navigational safety – supplementing S-101 ENC's using varying sizes of S-125 dataset, including overlays.

Service S-125 datasets via 4/5-G telecommunications means.

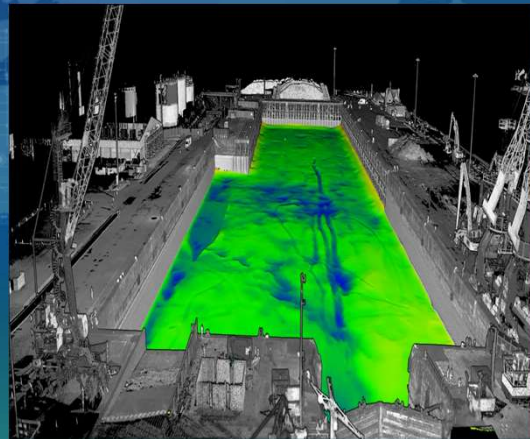
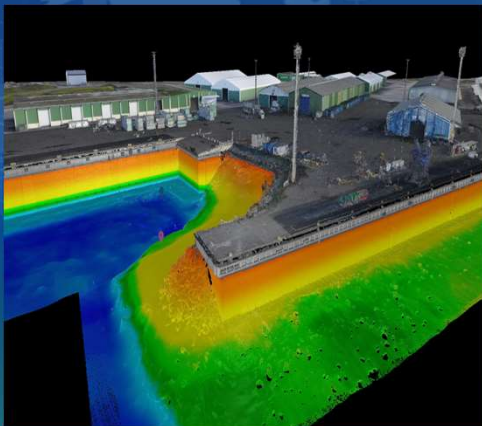
Testing interoperability between S-125 and S-101 as interleaving and overlaying – agreed at joint IHO/IALA workshop.

Sea Trial using 4/5G for updating at Singapore Maritime Week in Apr 2023 – **Joint Collaboration between KRISO (ROK) and Singapore HO.**



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## Exploring New Project : Next Generation of Electronic Navigational Chart Integrated with e-Radar for positioning using Conspicuous Landmarks



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## Conclusion

To date Governing Board held 4 Meetings to:

- Established procedures for submission of project proposals
- Agreed that the 2 pilot projects would be useful to test and make improvements, where appropriate
- In-principle : New Project on ECDIS displaying S-102 and S-104 pending Part 2 approval
- In-principle : Proof of Concept Project between IHO and IALA – S-124 & S-125
- Exploring Next Generation Electronic Navigational Chart
- Encouraged the involvement of industry stakeholders

Governing Board looks forward to evaluating more collaborative projects.



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For Information

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