IHO Innovation and Technology Lab

(Revision after 3rd Session of the IHO Council)

UN-GGIM Second Expert Meeting of the Working Group on Marine Geospatial Information

28 Feb 2020

IHO Innovation and Technology Lab - Proposal

A collective IHO approach towards:

1. **Keeping pace and remain relevant** with the rapid evolving technologies that will impact on the hydrographic community;
2. **Identifying products and services** that will be developed and how can we provide support for development;
3. **Contributing to other global initiatives related to seas and oceans**, such as the United Nations Sustainable Development Goal 14: “Conserve and sustainably use the oceans and sea and marine resources for sustainable development”

IHO Innovation and Technology Lab - Objectives

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

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

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.

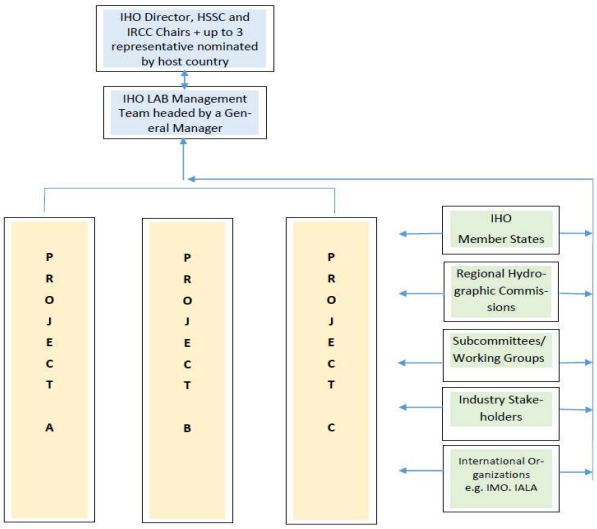
IHO Innovation and Technology Lab – Progress

- Singapore presented at 3rd Session of the IHO Council in Oct 2019
- Volunteer drafters: Canada, Denmark, France, Italy, Netherlands, Norway, Portugal, South Africa and USA.
- The 2 major points in the amended Proposal*:
  1. Clearer objectives; and
  2. Details of the IHO Lab structure.

  The IHO Secretary General has proposed:
  - The Chair for the Governing Board to be rotated biennially between the IHO Director and nominee from the Host Country (i.e. Singapore).
  - A General Manager to head the Management Team and report to the Governing Board.
- IHO Member States that have indicated support for Singapore's IHO Lab initiative are: Brazil, Canada, China, Denmark, France, Indonesia, Italy, Malaysia, Netherlands, Norway, Portugal, South Africa, Spain, United Kingdom, United States and Uruguay.

*2nd Session IHO Assembly Doc. 2.4

IHO Innovation and Technology Lab – Governance Structure*



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IHO Lab Management Team: Propose Terms of Reference

IHO Director, Chairs of HSSC and IRCC:

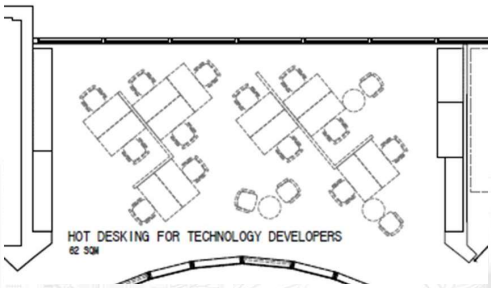
a. Setting **strategic directions** of the IHO Lab;
b. Endorsing **IHO Lab annual work plans, budgets, projects** and initiatives;
c. Overseeing IHO Lab's innovation and technology project(s) milestones, **progress and outcomes**; and
d. Submitting **Annual Report and Recommendations** to the IHO Council.

General Manager, IHO Lab:

a. Reviewing the proposed work plans
b. Monitoring IHO Lab's project activities, progress and outputs
c. Managing the technical reviews of IHO Lab's projects and new proposals
d. Proposing and executing **IHO Lab's work plans**;
e. Managing **IHO Lab's operations and project activities**;
f. Driving IHO Lab's to **deliver outcomes**;
g. Attending **HSSC and IRCC meetings** to update on the IHO Lab's project activities, progress and outputs; and
h. Where appropriate, to attend **RHC meetings** to share activities and knowledge with IHO Member States.

Singapore in-kind contributions:

- Work Space + Manpower Costs
- Total estimated costs to be borne by Singapore US$163,000 annually



IHO Innovation and Technology Lab: Potential Projects

- S-100
  - Test bedding in the Singapore and Malacca Straits the following S-100 products: S-104 – Water Level Information for Surface Navigation
- MSDI
  - Explore the use of artificial intelligence (AI) to assist in ensuring and improving processing of hydrographic data (e.g. survey quality and intervals between the conduct of hydrographic surveys).
  - Monitor and support UN SDG 14
- Smart ENCs
  - Development of next generation of “Smart ENCs”, we could explore how machine-readable data could be used in promoting E-Navigation and testing of autonomous shipping in a high vessel density traffic area.
- Autonomous Shipping
  - Autonomous Shipping Readiness - with a potential project on testing and refining hydrographic services to support IMO Maritime Autonomous Surface Ships (MASS) implementation.

For your consideration and support, please.