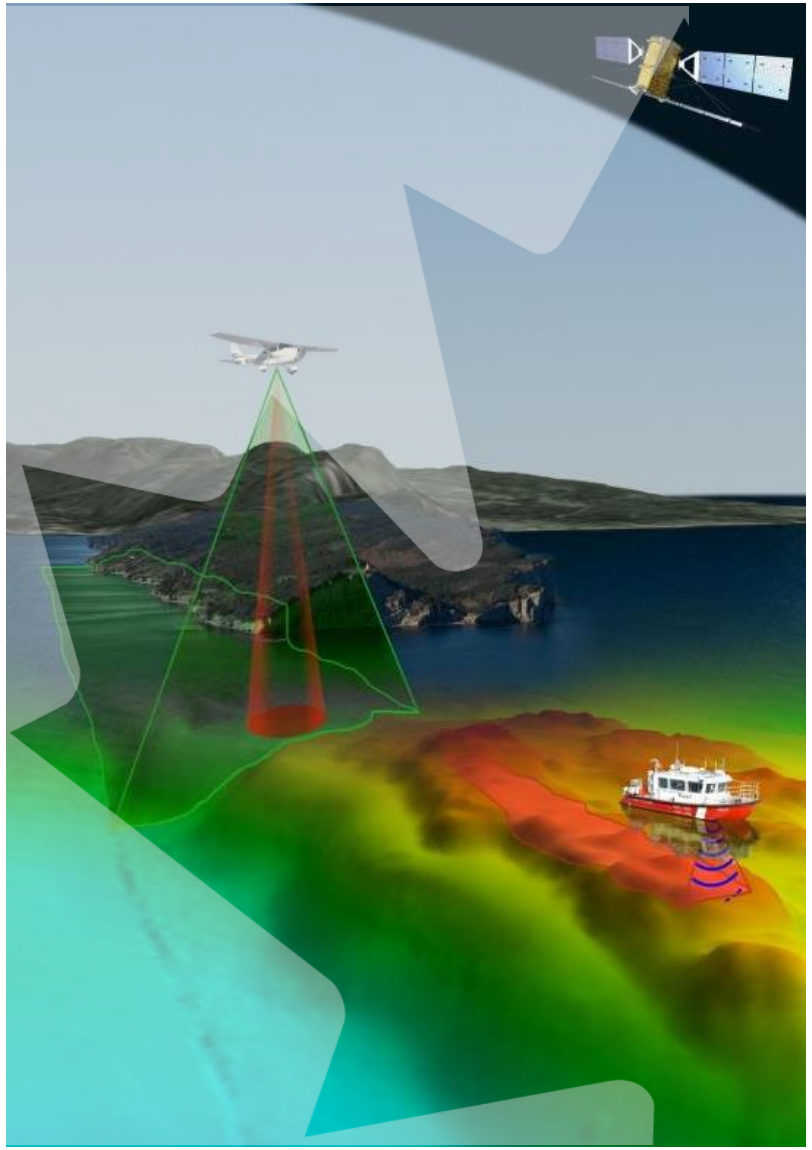
GODAE OceanView Symposium 2019 - OceanPredict '19

Operational Oceanography at the Canadian Hydrographic Service



Geneviève Béchard
Director General
Hydrographer General of Canada
Canadian Hydrographic Service
Fisheries and Oceans Canada

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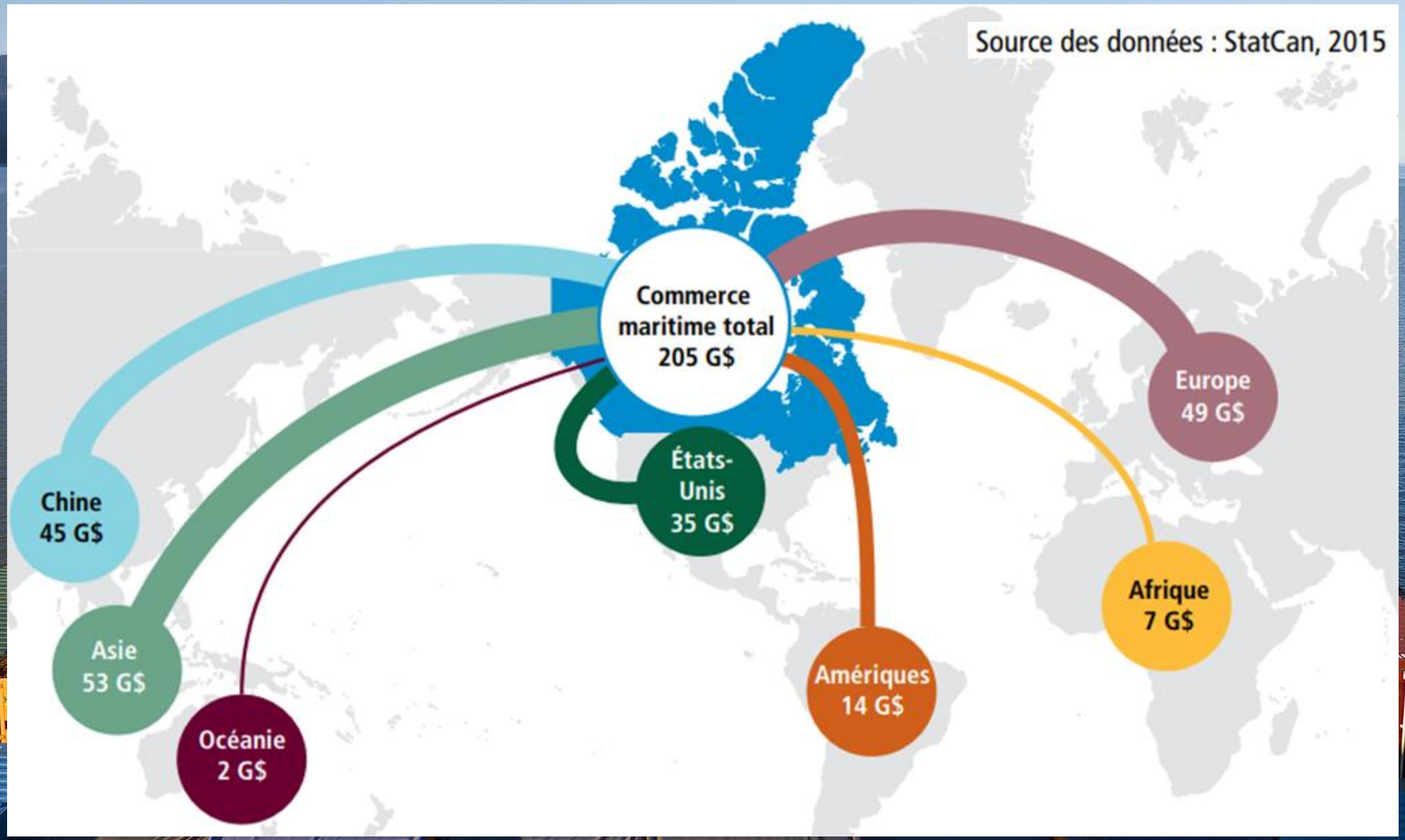
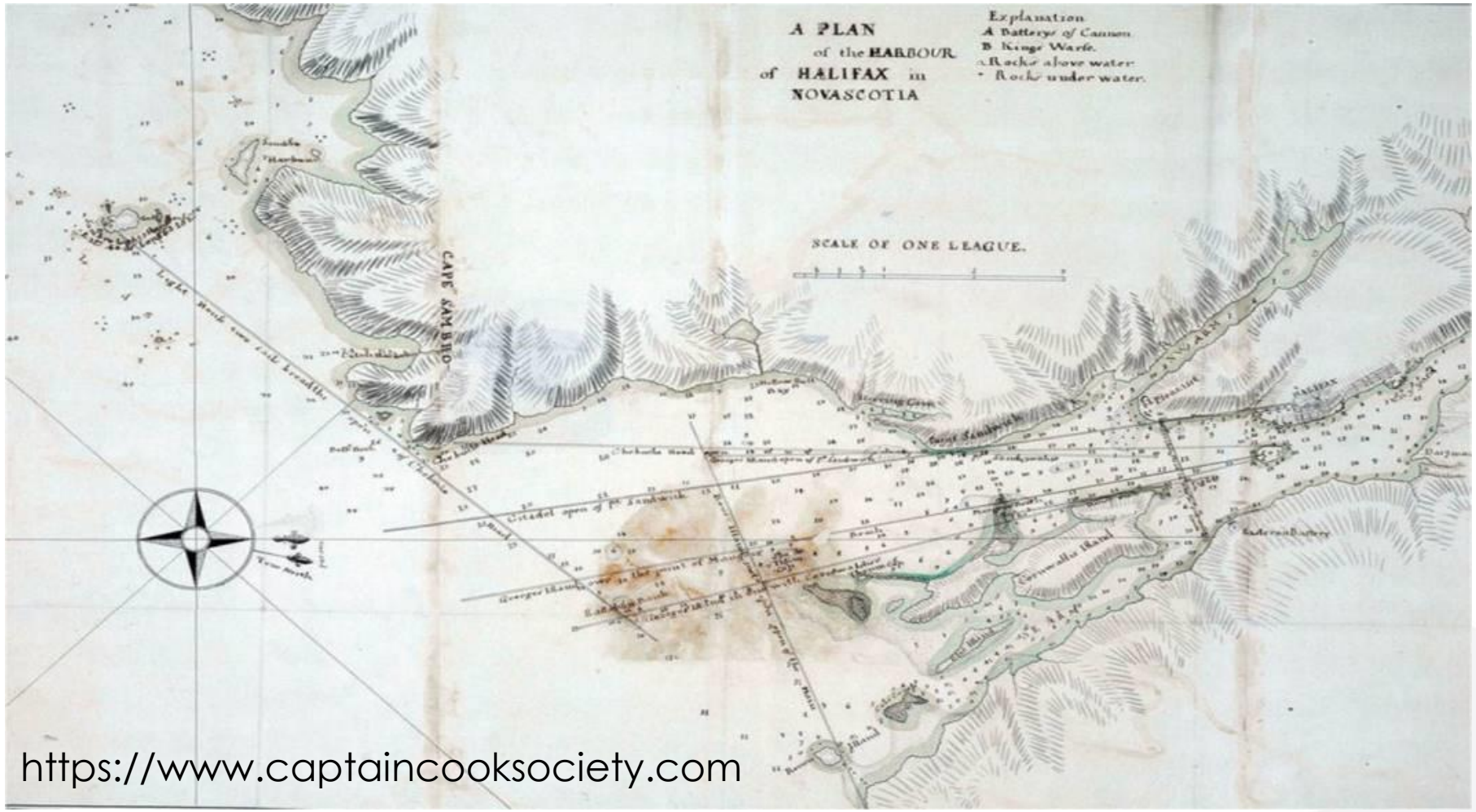
Canada is a Maritime Nation



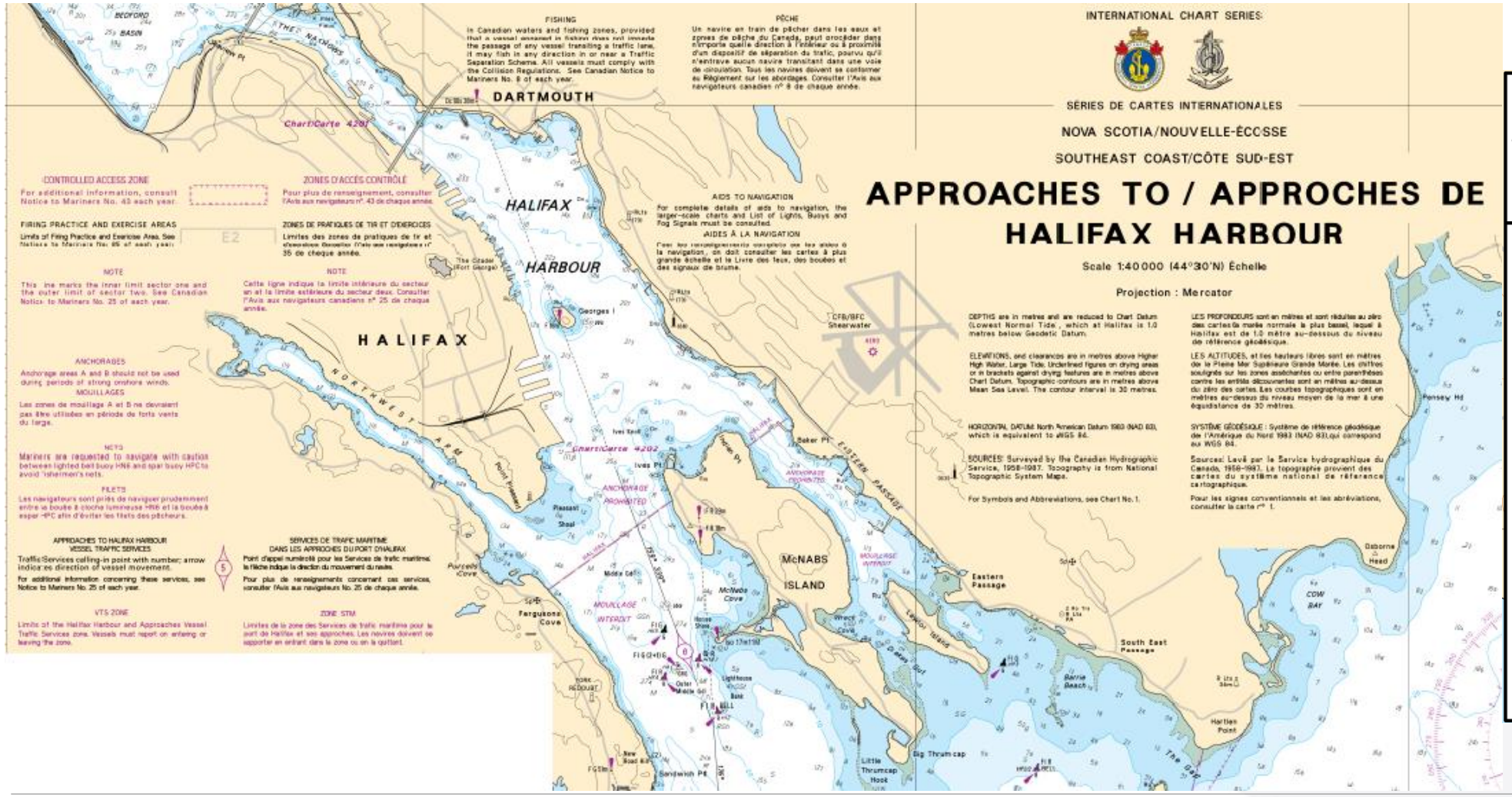
Hydrography is the Foundation of Safe Navigation on Waterways



https://www.captaincooksociety.com

A Plan of the Harbour of Halifax in Nova Scotia c. 1762 (detail) Sambro Outer Island to Halifax townsite

Modern Hydrographic Survey of Halifax



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Vision for the Future

https://www.smartcitiesworld.net/

Change Required to Meet Current and Future Needs

MSC Cruises unveils Bellissima, its new flagship

Smart vessel for mineral ore mining

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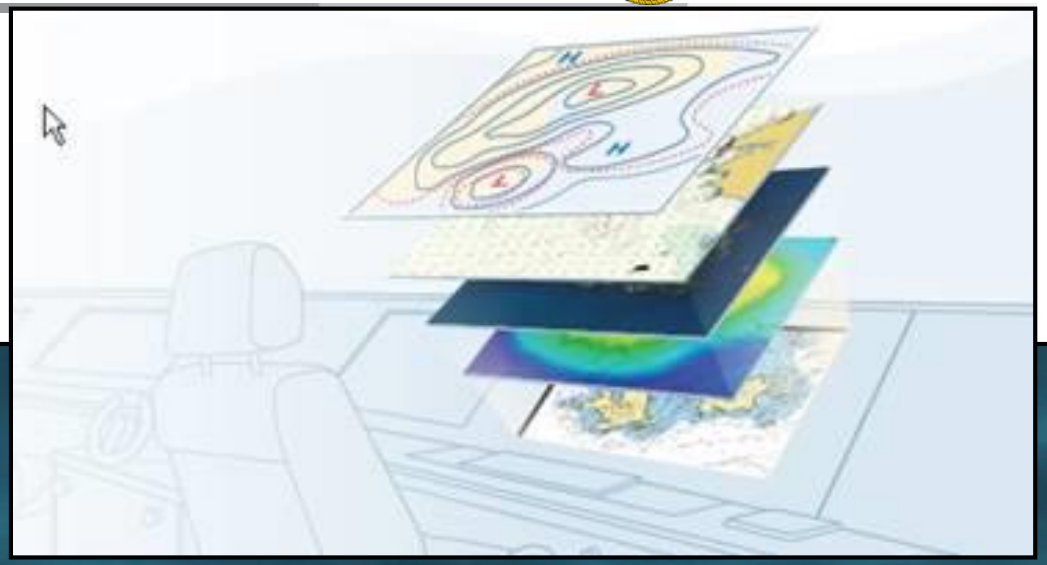
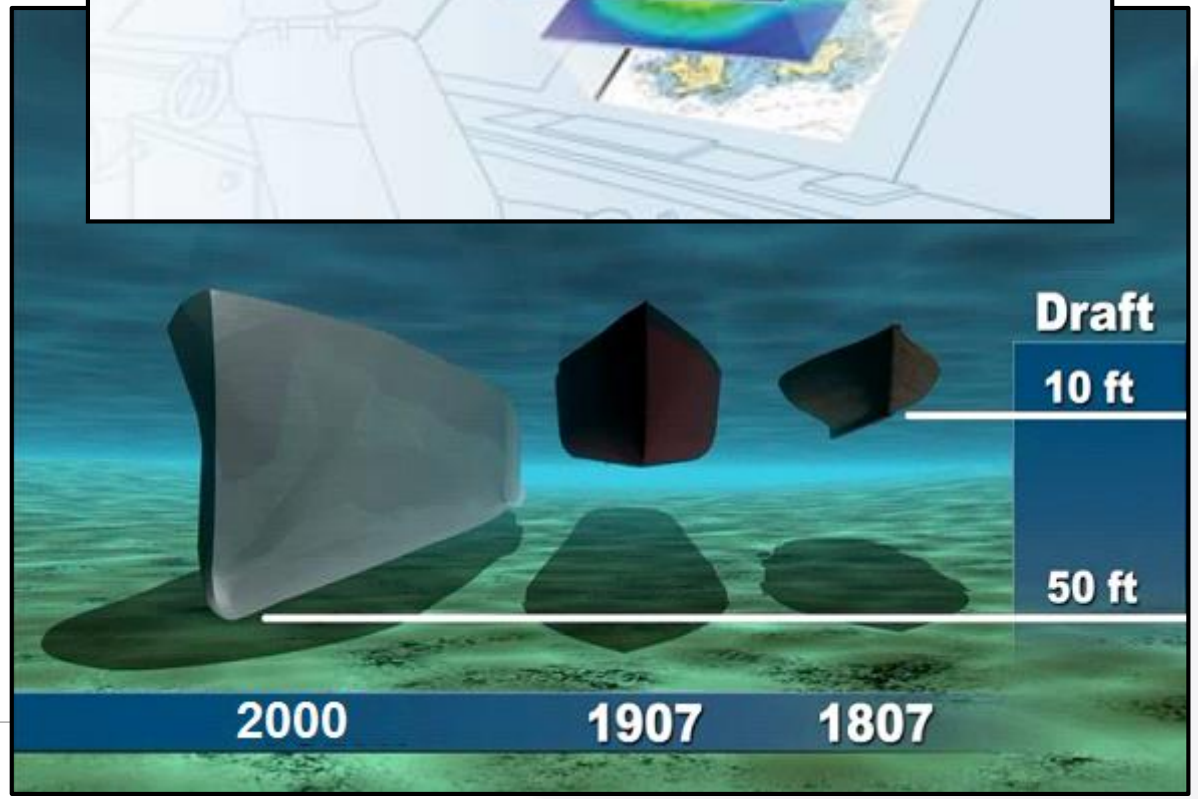
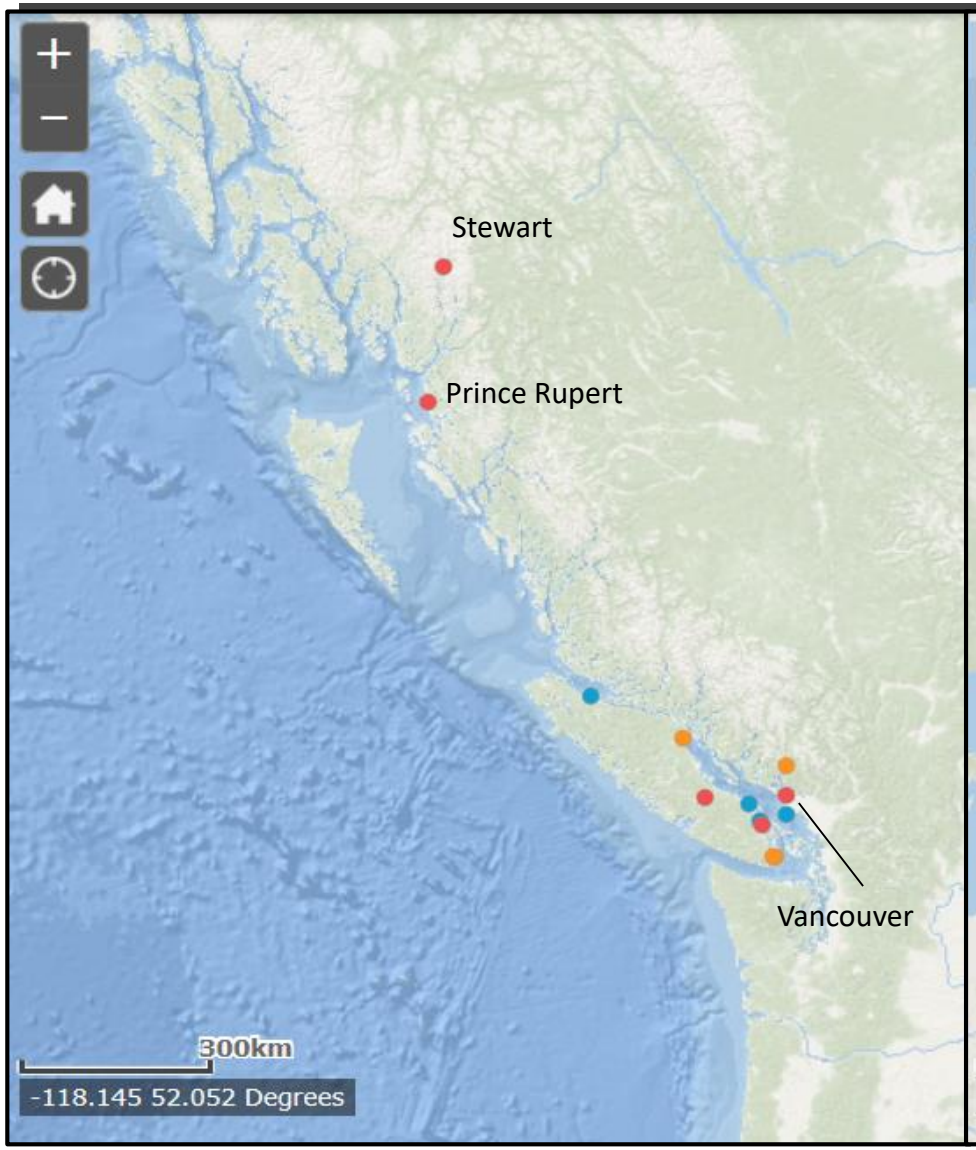
Current Need with Increased Demand for Real-time Data

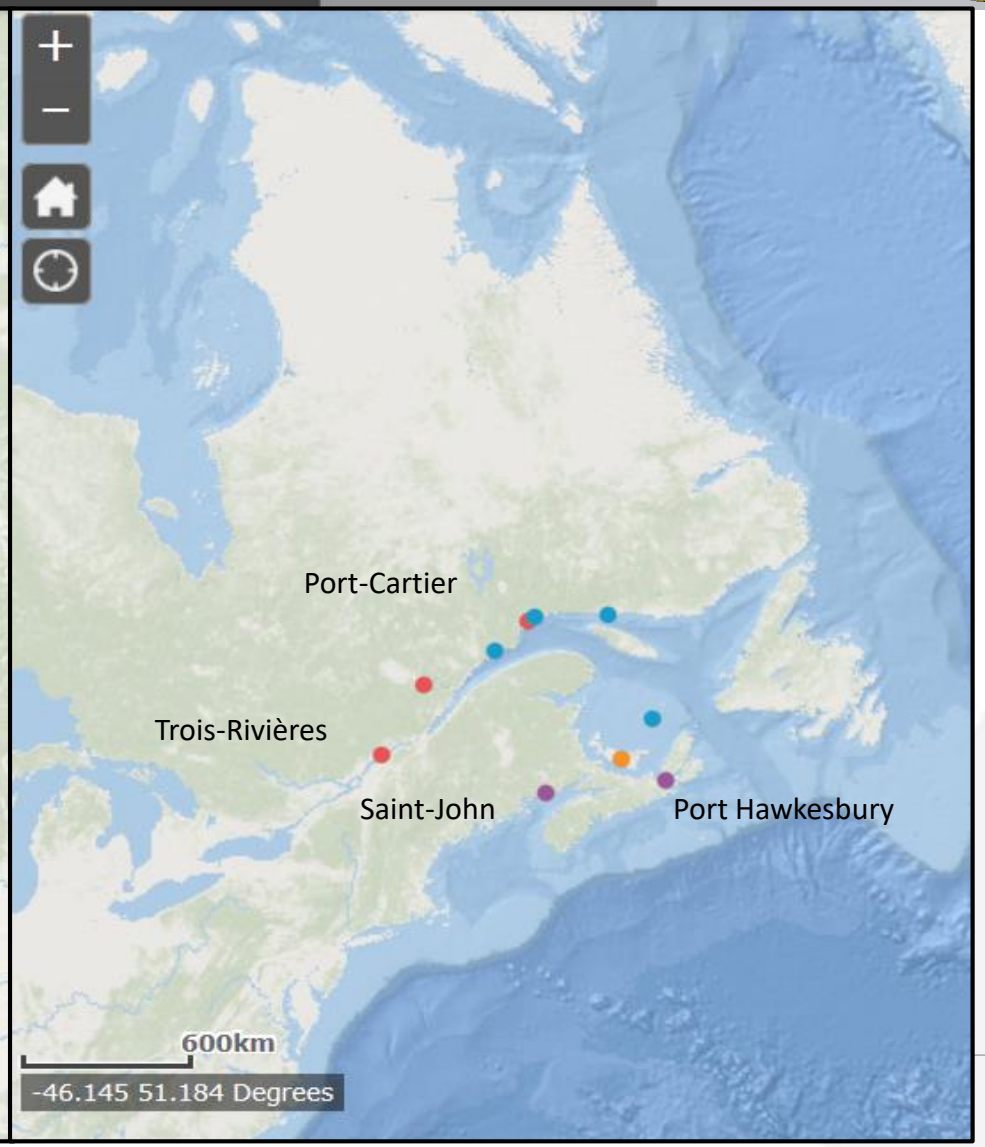
- Demand to access high resolution bathymetry
- Demand for real-time water levels at stations and modeled water levels in between stations
- Demand for near real-time modeled surface current information
- Demand for accurate under keel clearance information to maximise shipments
- Demand for water level forecasts





Oceans Protection Plan Ports





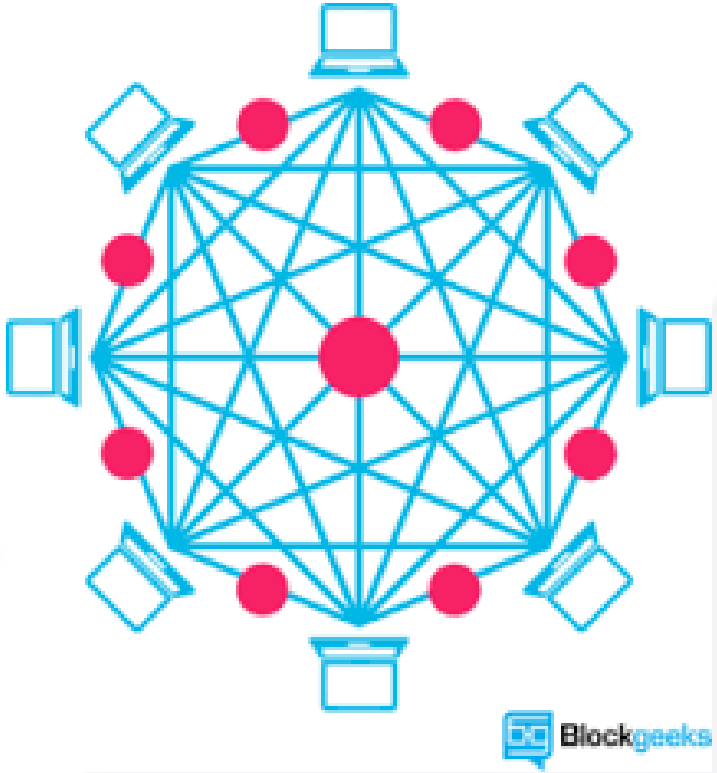
Legend

23 OPP Ports

- 2017-18
- 2018-19
- 2019-20
- 2020-21

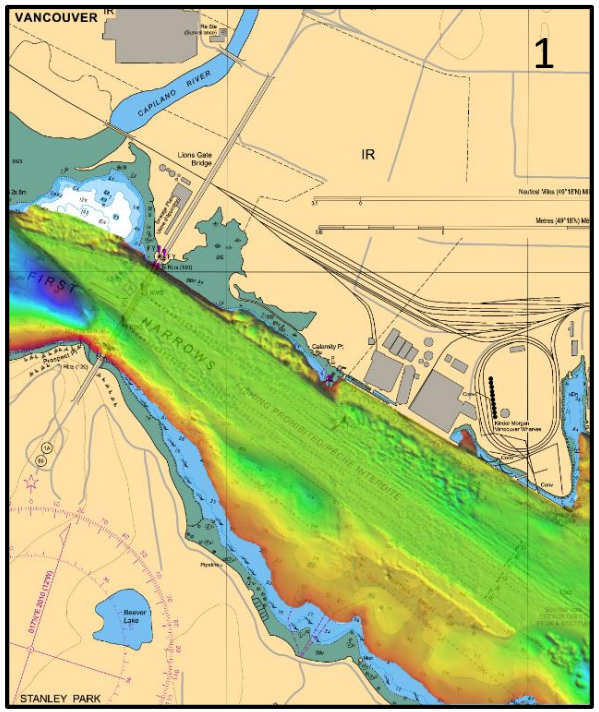
Transformation throughout the Hydrography Chain

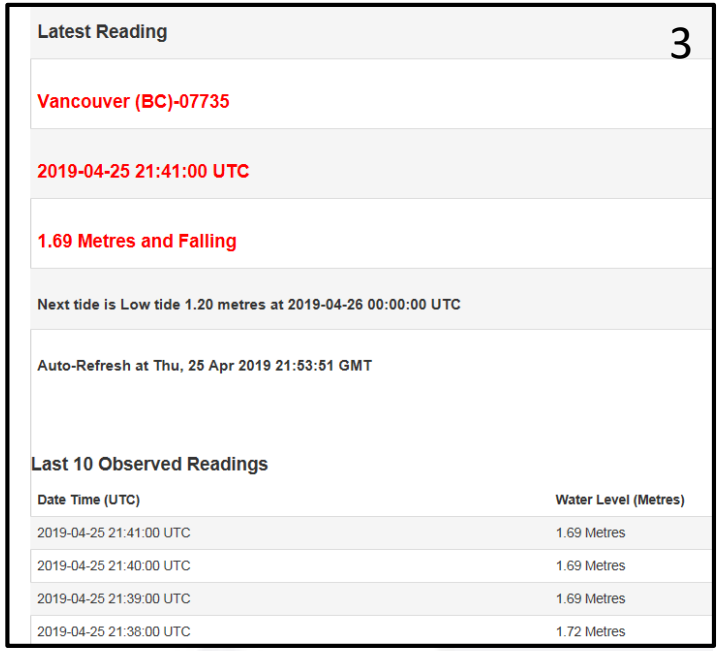
Data Acquisition → Data Integration → Data Dissemination

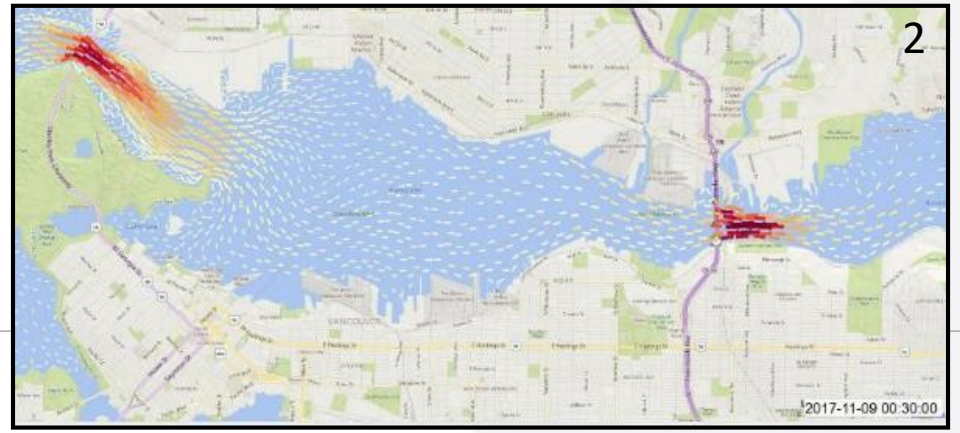


Inputs to E-Navigation

1. High resolution bathymetry data
2. Modeled surface currents
3. Real time water levels, predictions and forecasts at Tide stations
4. Modeled prediction and forecasts between stations (In development)







Access Latest Bathymetry Through the Cloud

CHS Bathymetry in CARIS Bathy DataBASE

TELEDYNE CARIS

PRIMAR

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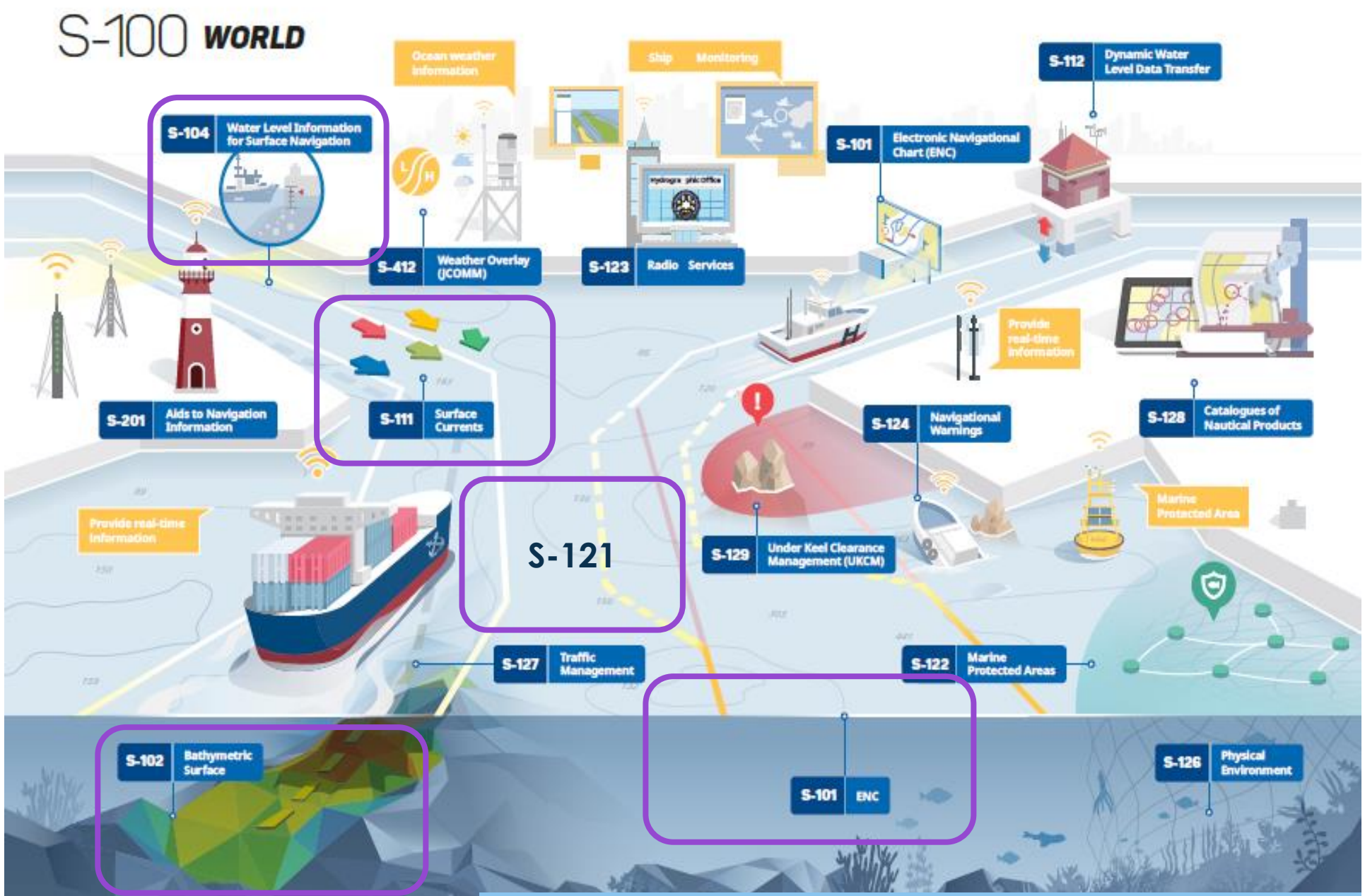
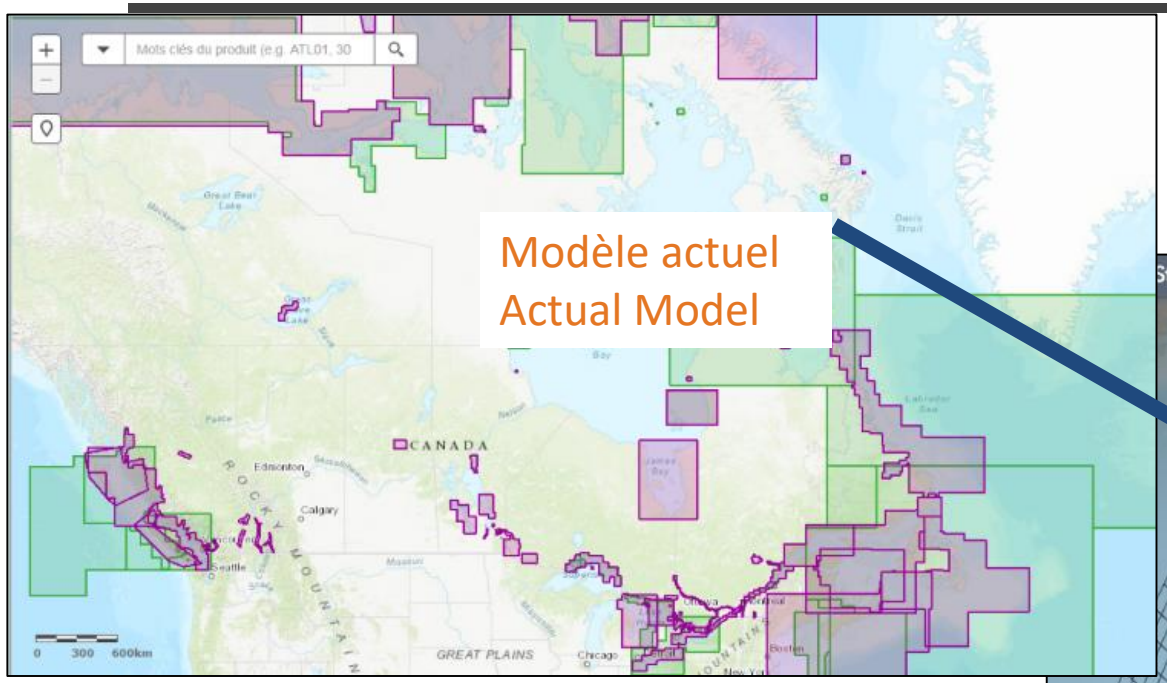
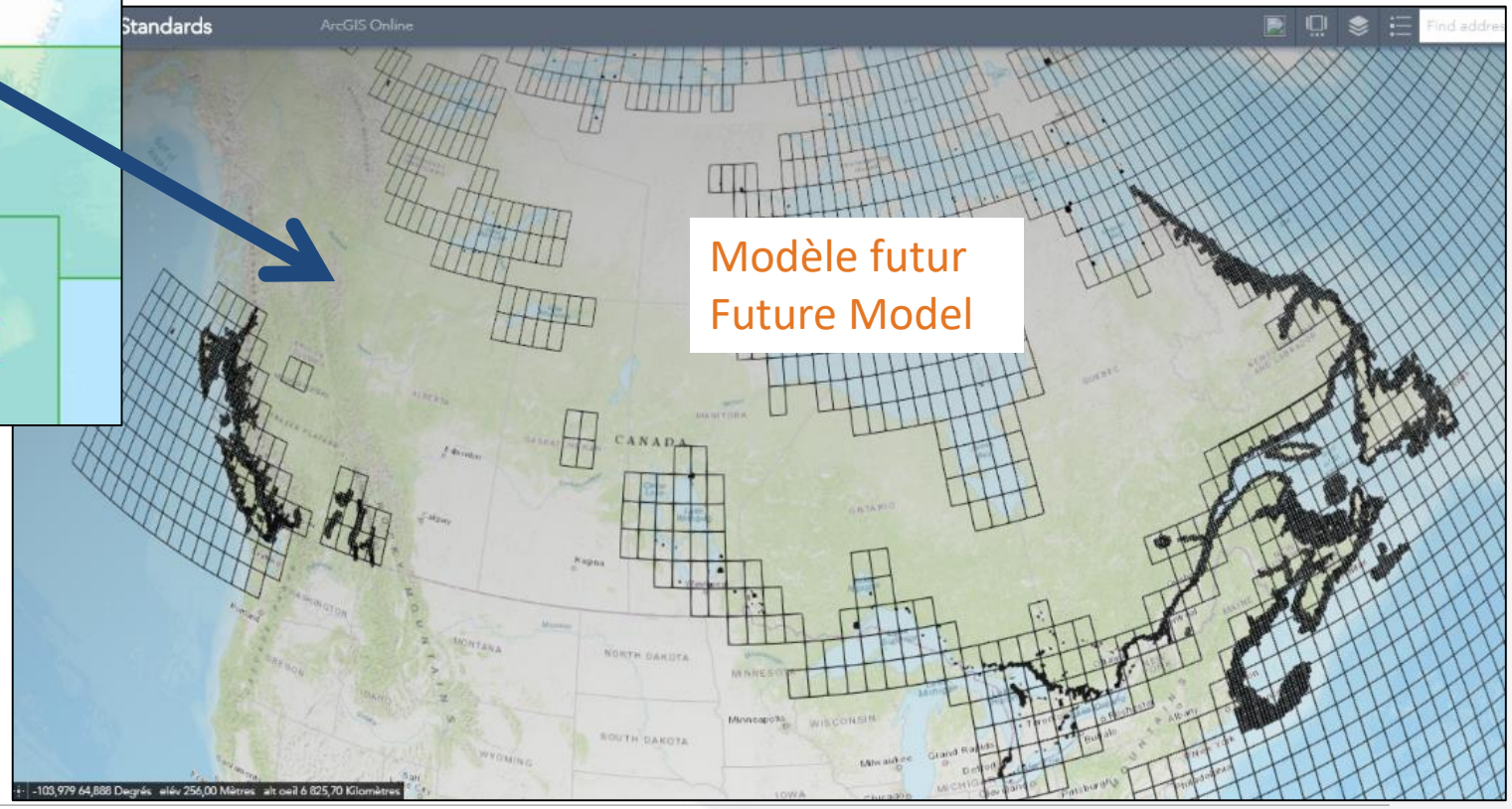


Image credit: Korea Hydrographic and Oceanographic Agency

Infrastructure of Gridded Cell Scheme Enables e-Navigation



Modèle actuel
Actual Model

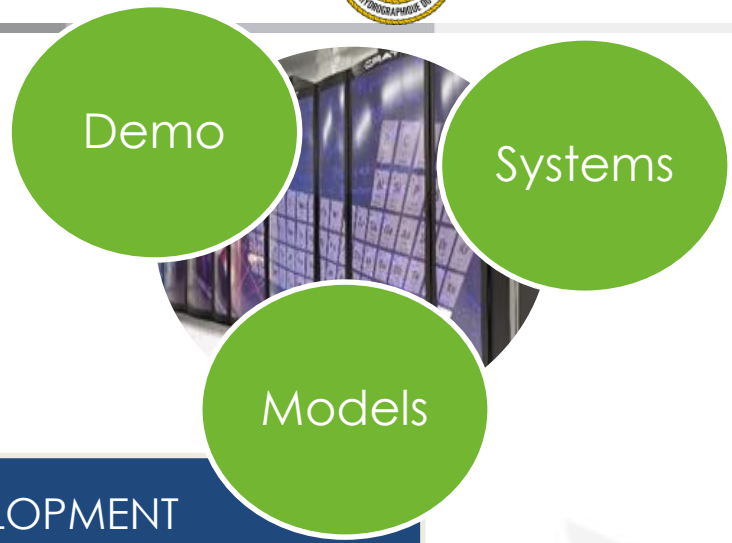


Modèle futur
Future Model

Multidisciplinary Approach to Operational Oceanography

Feedback from mariners

RESEARCH
(Department of Fisheries and Oceans)



SERVICE DELIVERY
(Canadian Hydrographic Service)

DEVELOPMENT
(Department of Fisheries and Oceans with Environment and Climate Change Canada)

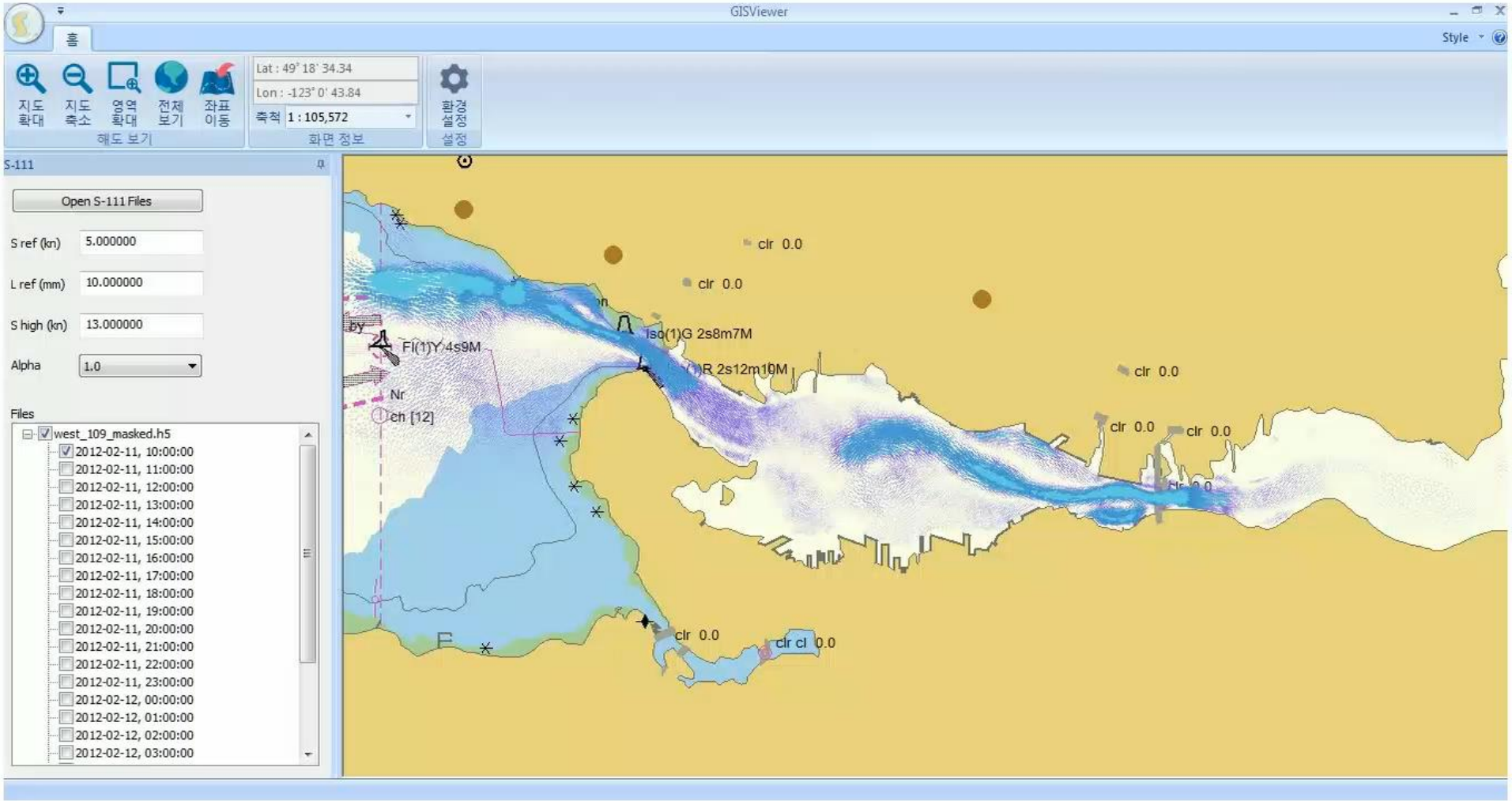
Shared Services Canada Services partagés Canada

Disseminates products

Canadian Meteorological Centre Operations Implementation Group

OPERATIONALIZATION
(Environment and Climate Change Canada)

Key Messages



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Looking to the Future

CHS Bathymetry in CARIS Cloud

in Kongsberg S-102 Demonstrator

TELEDYNE CARIS

PRIMAR

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Merci!

Thank you!

Pour plus d'information, contactez nous au:
shcinfo@dfo-mpo.gc.ca

For more information, please contact:
chsinfo@dfo-mpo.gc.ca