



Canadian Port Ocean Prediction Systems (POPS) to Dynamic Hydrographic Products

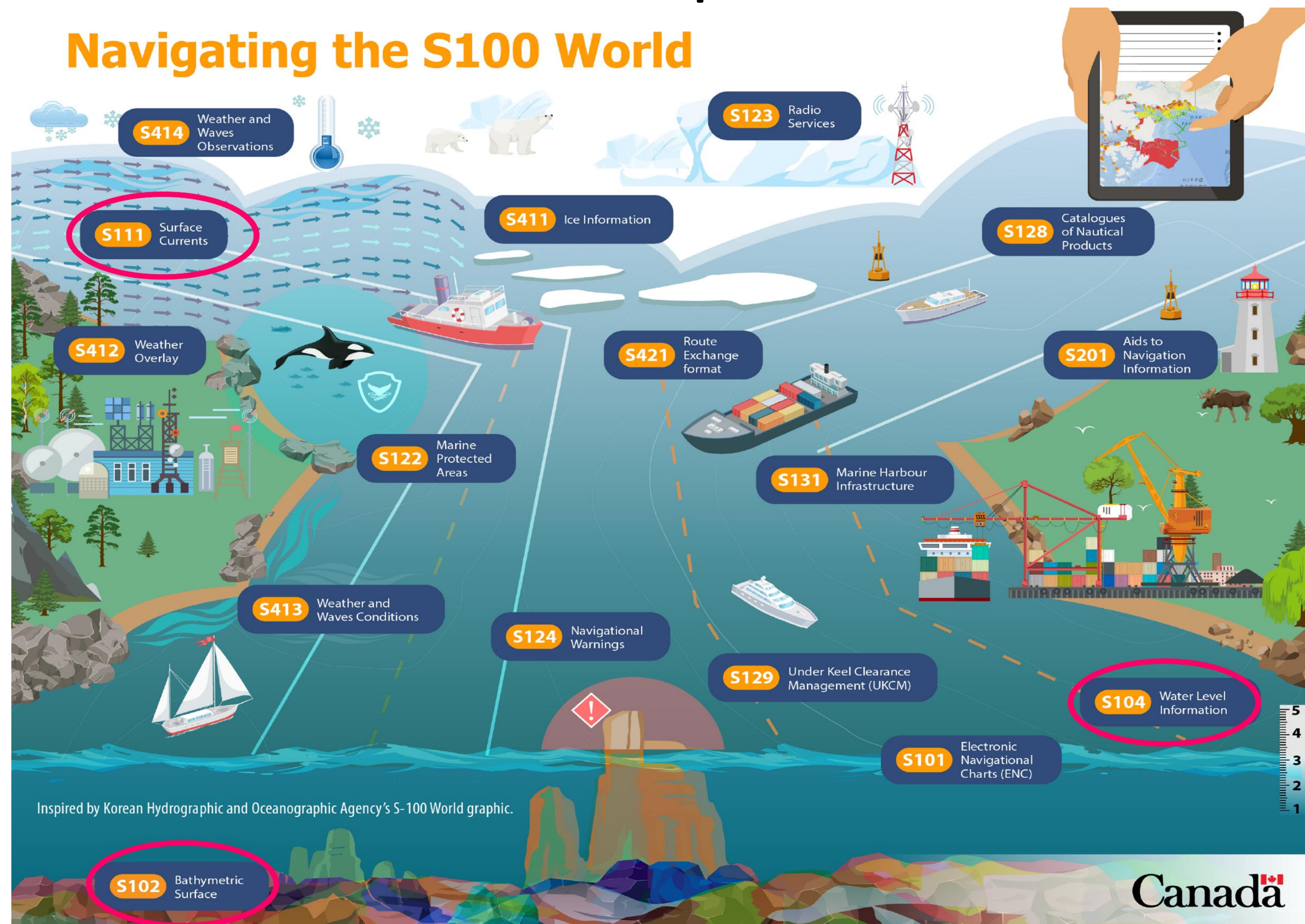


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S-100 Product Specifications

Navigating the S100 World

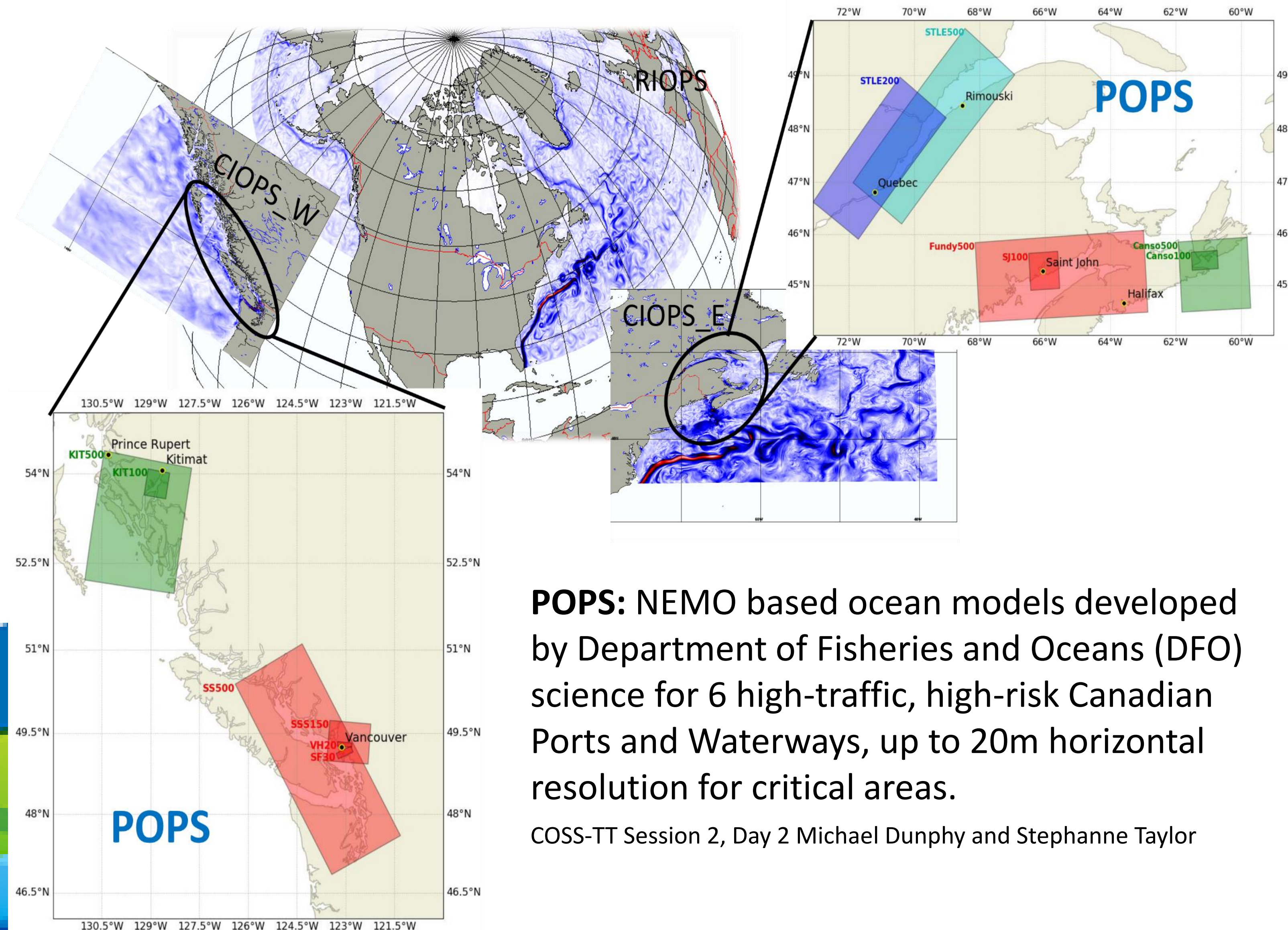


International Hydrographic Organization (IHO) S-100 Products:

"An S-100 based Product Specification defines a data product, and usually includes additional resources such as a machine readable Feature Catalogue and Portrayal Catalogue, a data Encoding Guide and at least one data encoding format."

--<https://iho.int/en/s-100-based-product-specifications>

POPS Forced by GIOPS-RIOPS-CIOPS



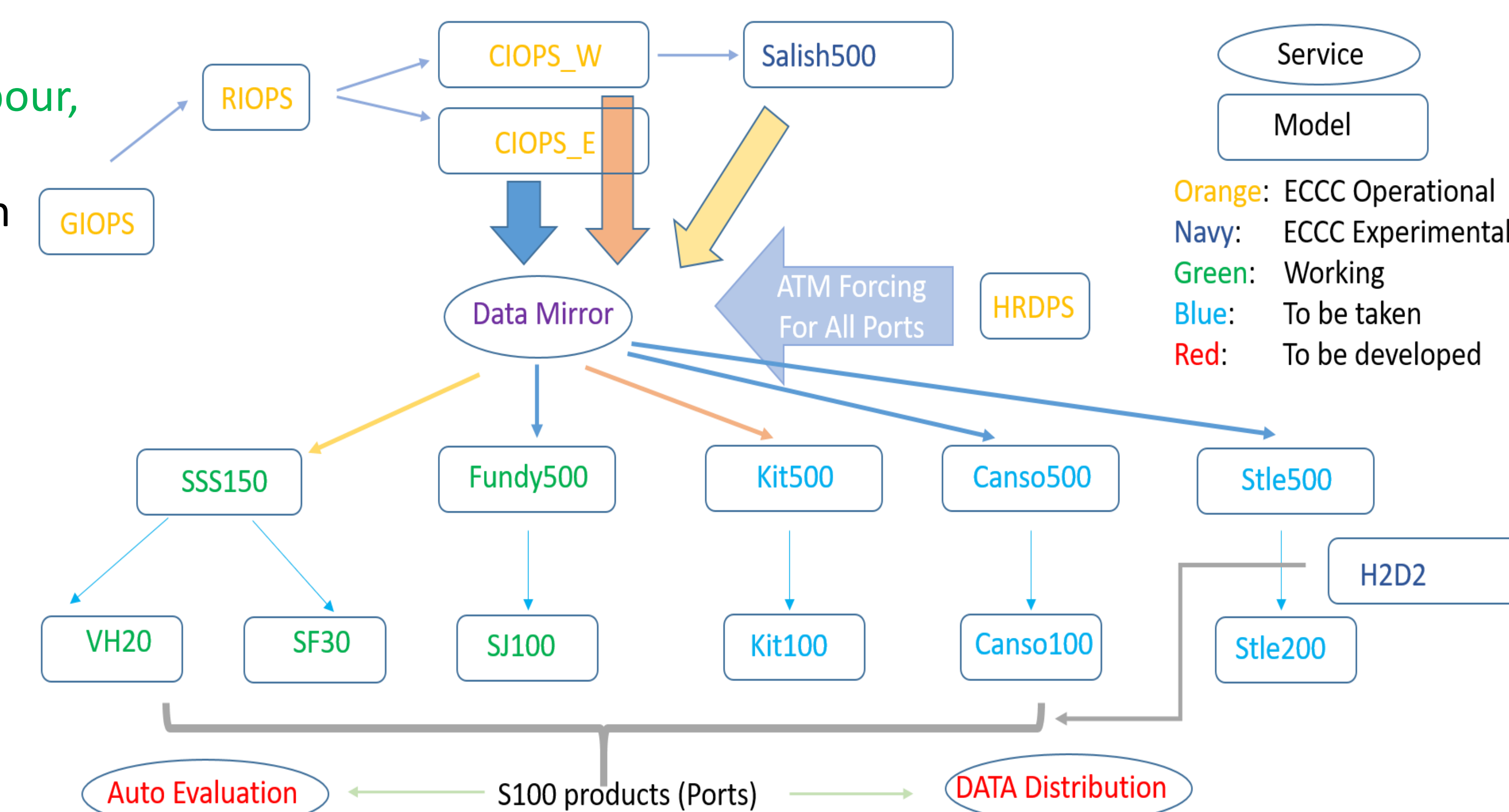
POPS: NEMO based ocean models developed by Department of Fisheries and Oceans (DFO) science for 6 high-traffic, high-risk Canadian Ports and Waterways, up to 20m horizontal resolution for critical areas.

COSS-TT Session 2, Day 2 Michael Dunphy and Stephanie Taylor

"Best effort" CHS POPS Production

- DEMO DFO POPS versions running for 3 Ports and approaches (Saint John Harbour, Vancouver Harbour, South Fraser River)
- Supported in cooperation with Environment and Climate Change Canada (ECCC) and other groups within DFO
- Pseudo Analysis (PA) + 4 times/day Forecasts
- Platform: Canadian Government's General Purpose Science Cluster (GPSC)

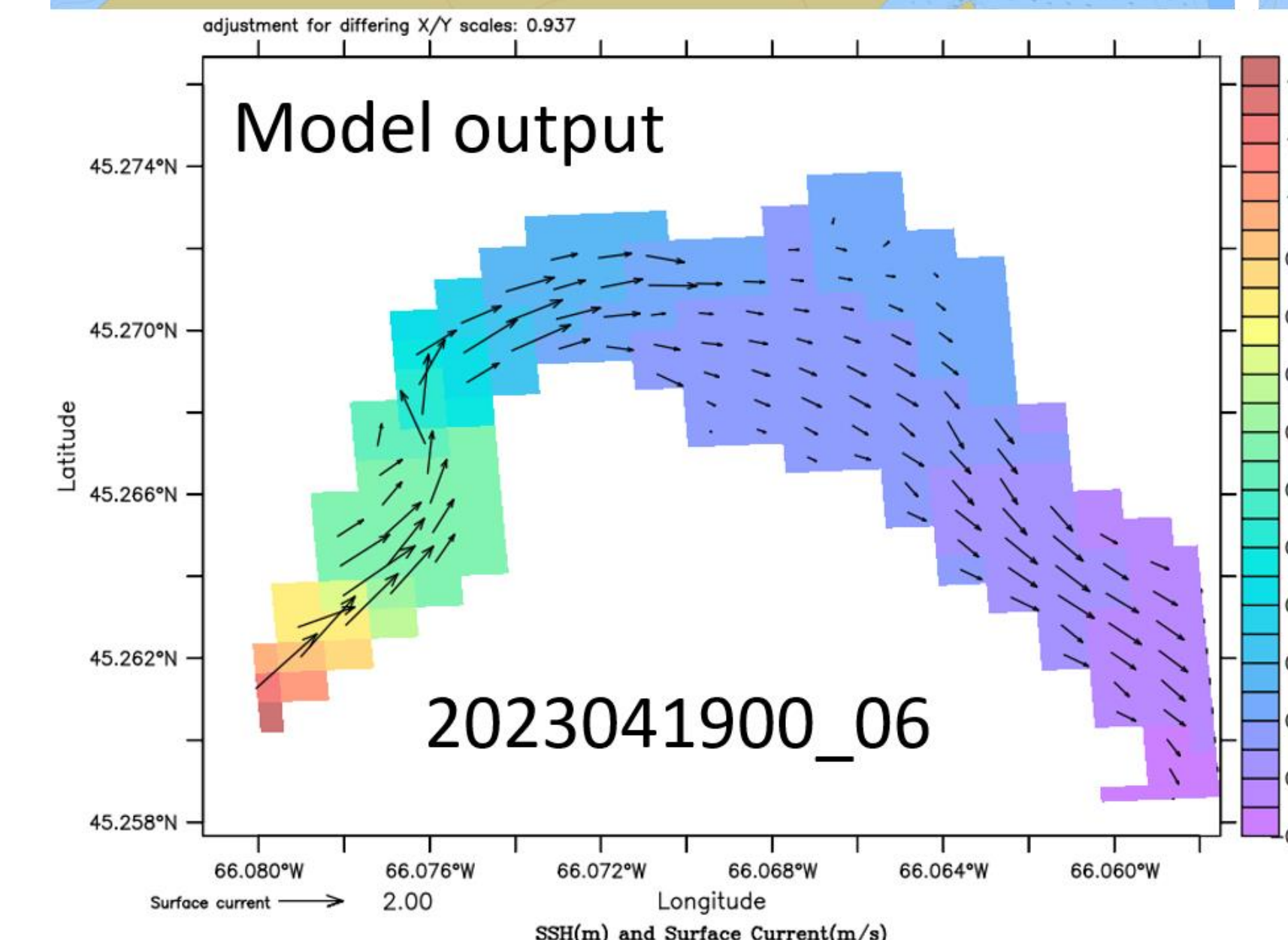
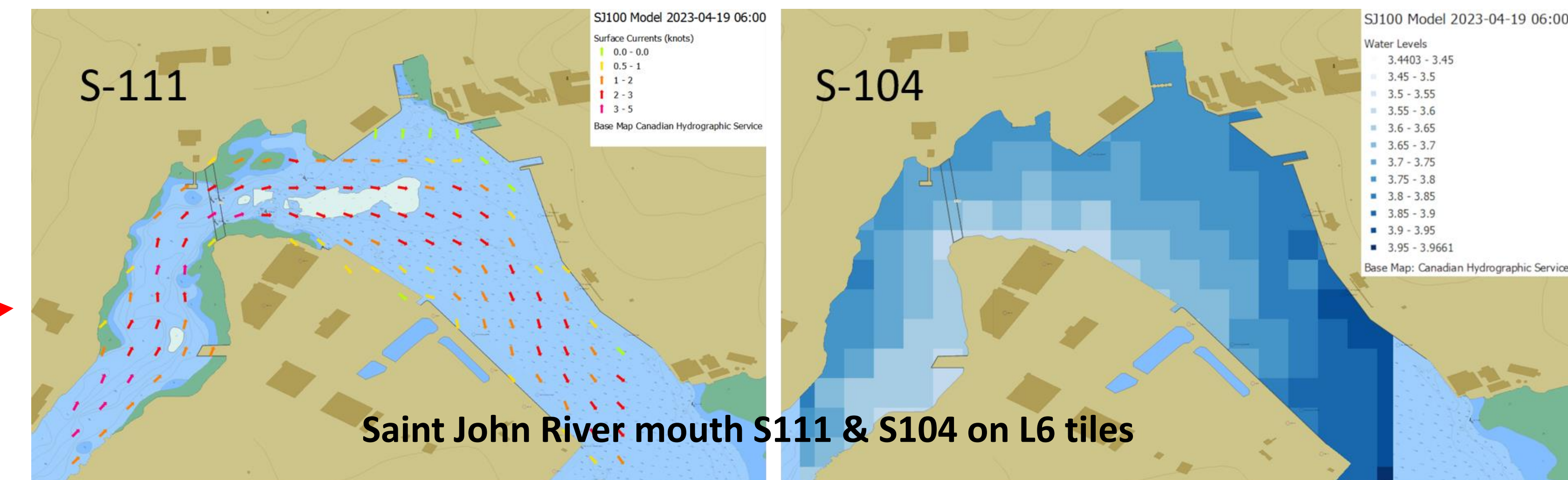
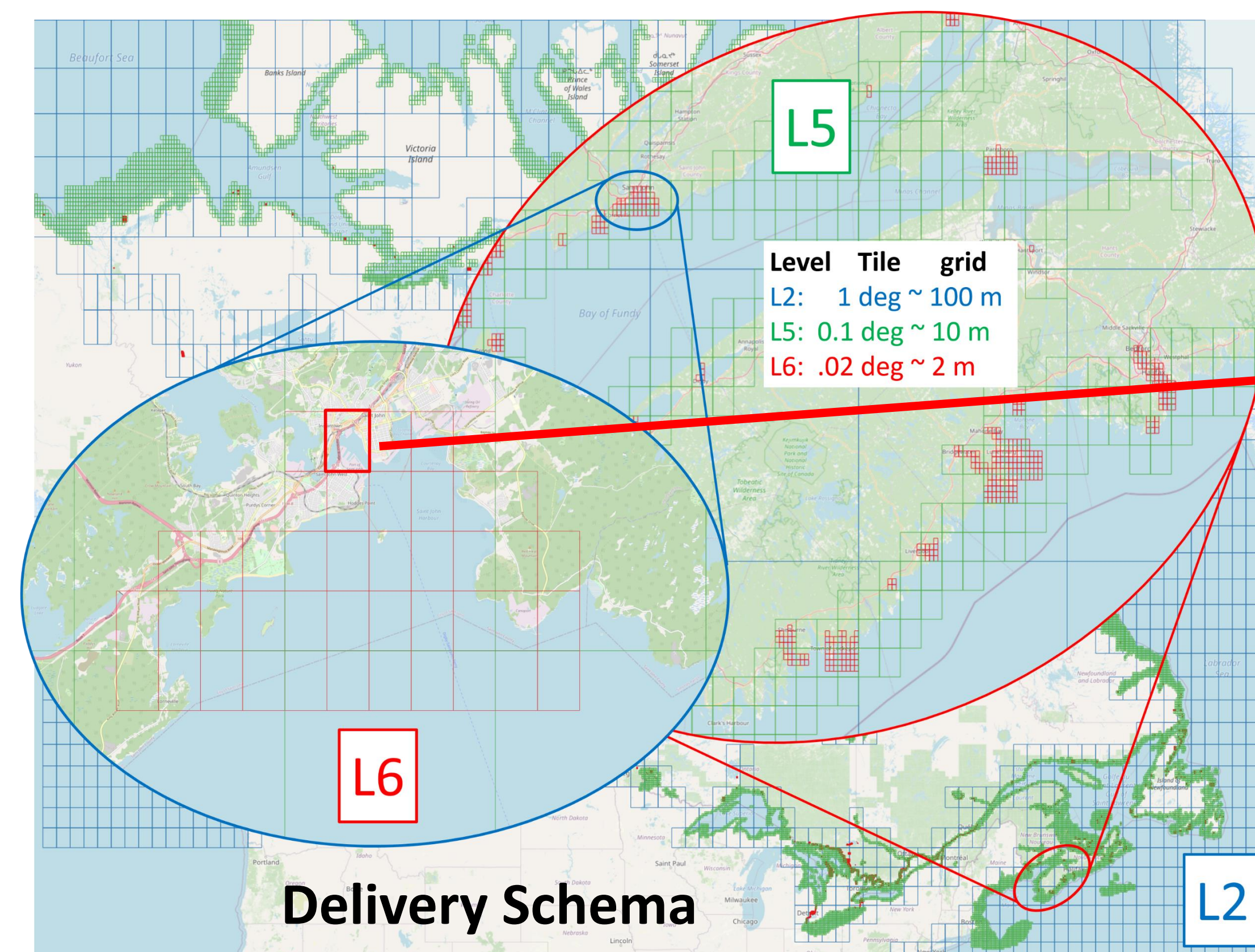
Illustration of DHP best effort production of POPS



Production Objectives:

- Migrate POPS production to CSAS/ACOM approved vers 1.0
- Expand to Include all available POPS (stage 1 Canso, Kitimat, stage 2 St. Lawrence)
- Optimize scheduled production for all POPS to achieve, 48 hr forecast outputs, 4X/day, including timely failure recovery
- Provide accessible POPS S-100 and Science outputs distribution (E.g. GPSCC)
- Work with partners to move POPS towards robust operational status

Model Based S-100 Production by CHS



An example of S-100 products based on CHS POPS demo output. Sample file used here is from Saint John Harbour 100m (SJ100) 0Z forecast on 20230419, valid hour 06Z.

Bottom: Model output raw SSH and U/V
Up left: S111 products on GIS view
Up right: S104 products on GIS view

Note: the hydrographic reference for water levels and S104 products is Chart Datum (CD). CD's water level target in Canadian tidal waters is Lower Low Water Large Tide (LLWLT).

Delivery Plan

- S-111: RIOPS, H2D2 (for St. Lawrence River), POPS, WCPS
 - S-104: CIOPS, POPS, H2D2, WCPS
 - On demand model and observational products through PYGEOAPI
- Green: on Primar; Blue: running but not yet on Primar; Purple: In development

