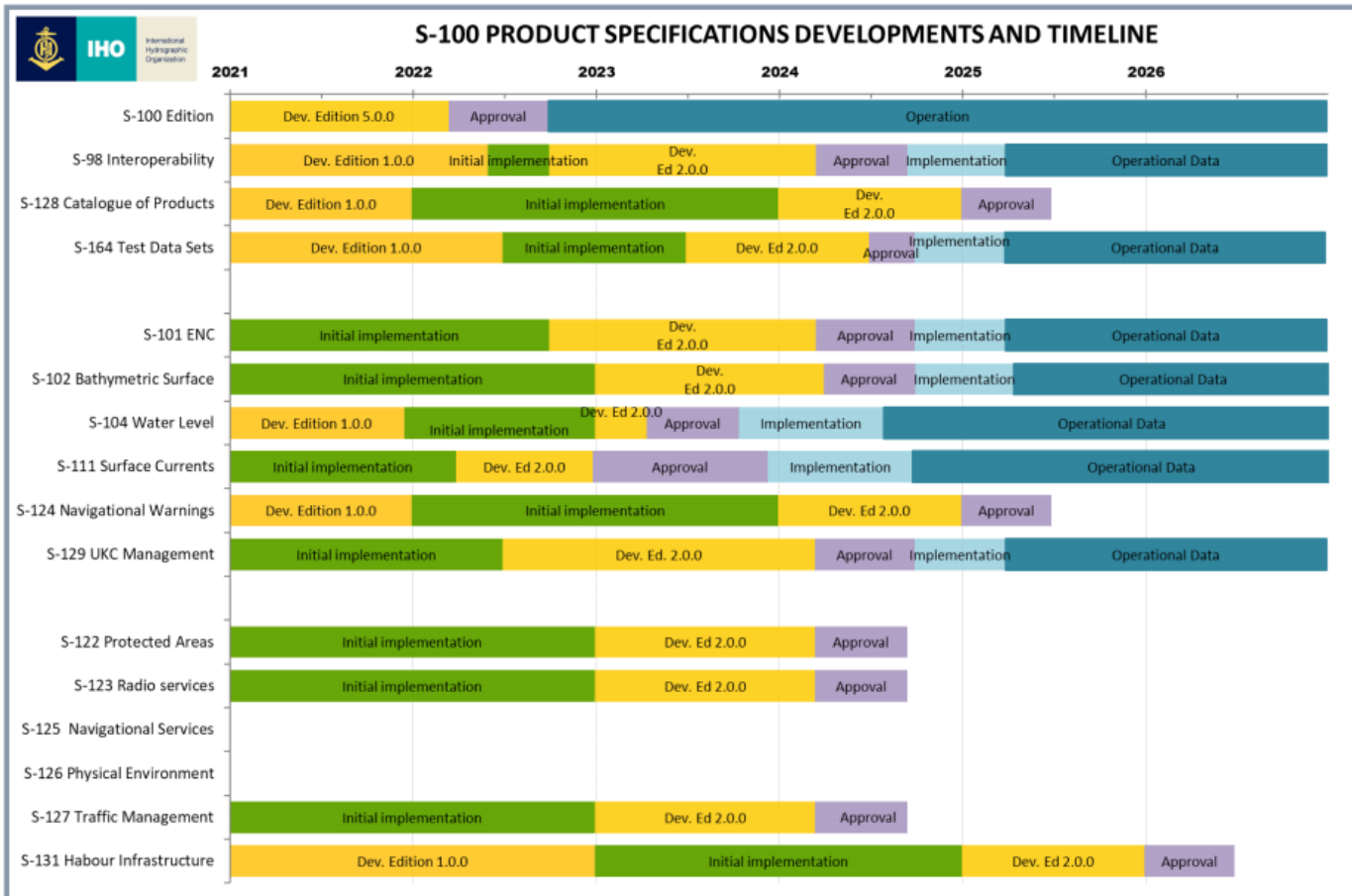




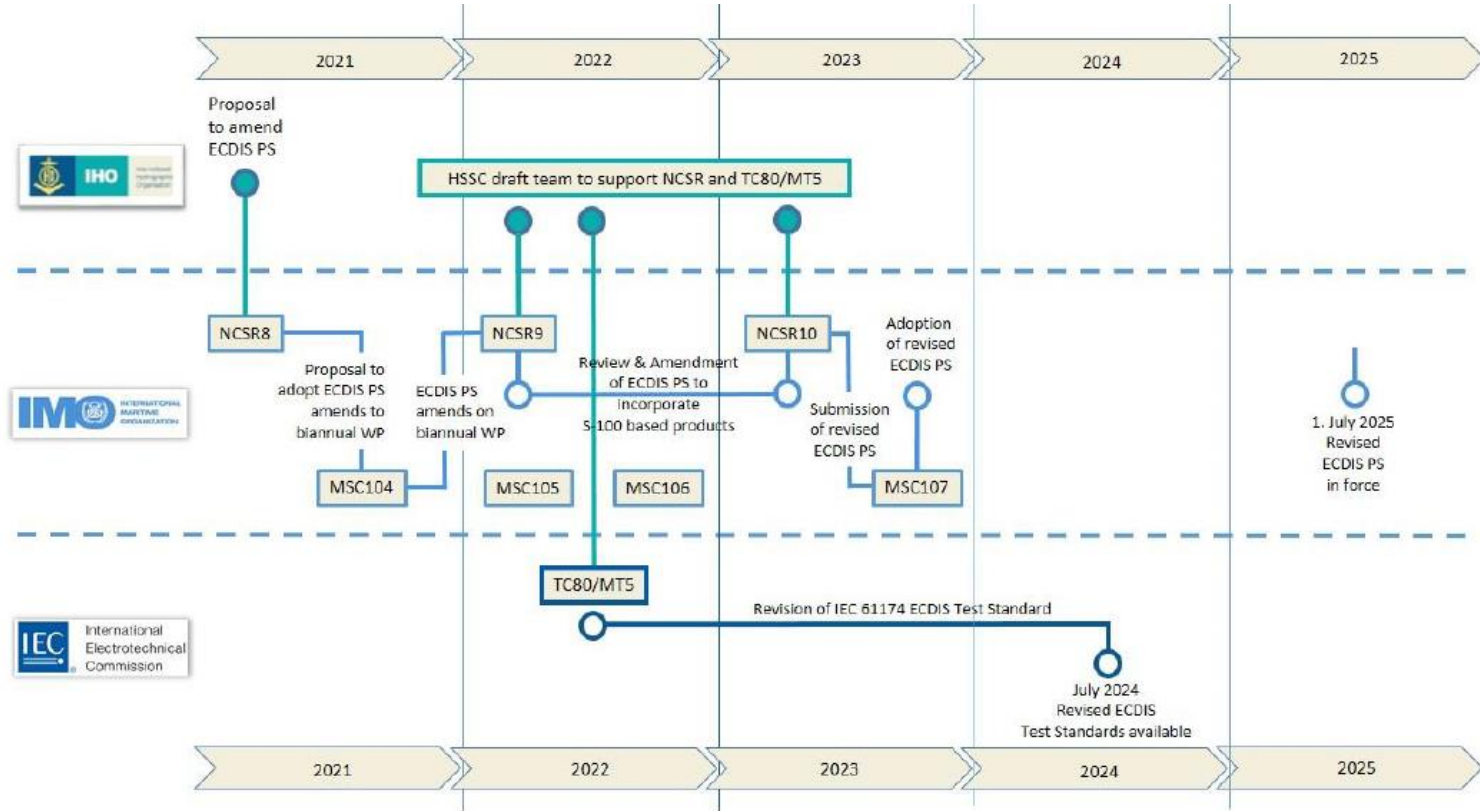
## GOC S-100 Data HUB

Louis Maltais (CHS) Antonella Ferro (CCG)  
April 2022



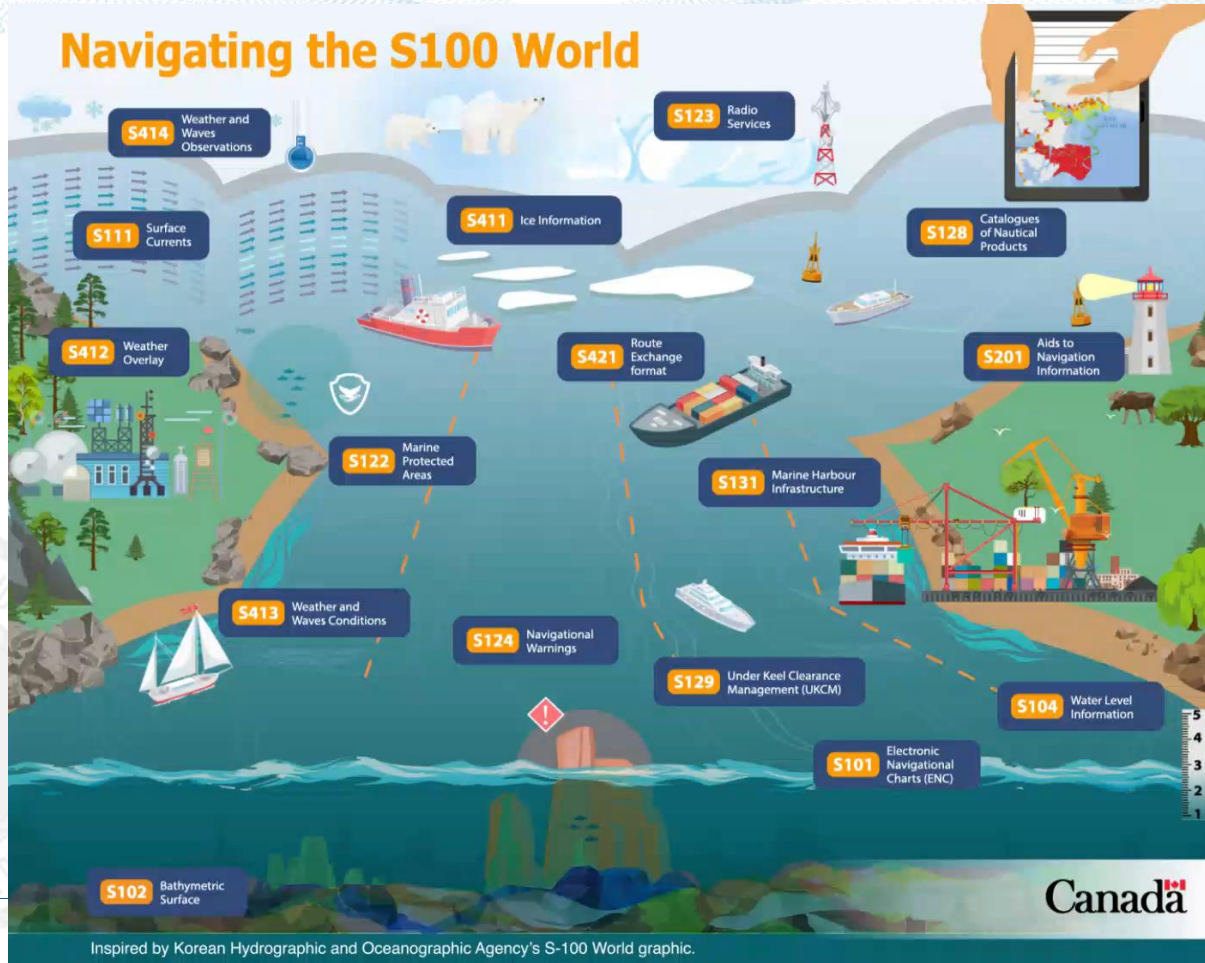


# IHO – IMO -The Road to ECDIS





# Navigating the S100 World



Inspired by Korean Hydrographic and Oceanographic Agency's S-100 World graphic.



# From human integration of data to machine integration of data

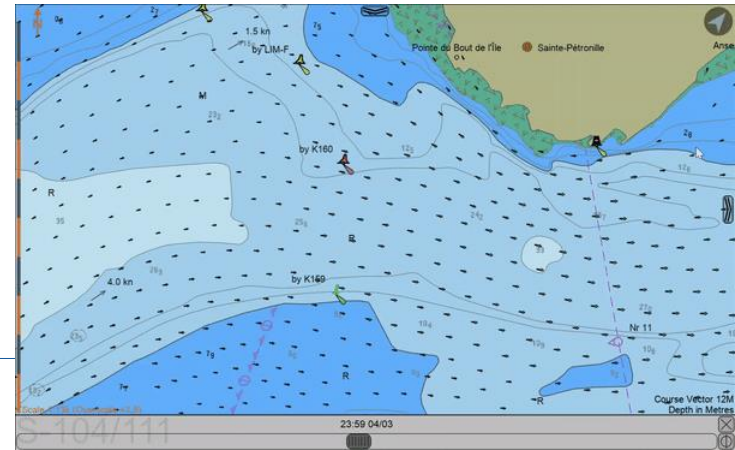
- Machine to Machine
- Standardized digital ecosystem (Real-time / Forecast)
- Maritime Autonomous Surface Ships (MASS)
  - Data needs
  - Role of Government





# Goal seamless S-100 data services

- S-128 Catalog
- Governance model
- Backend arrangements
- S-100 digital infrastructure backbone and operation
- Cybersecurity
- Industry / stakeholder / clients engagement



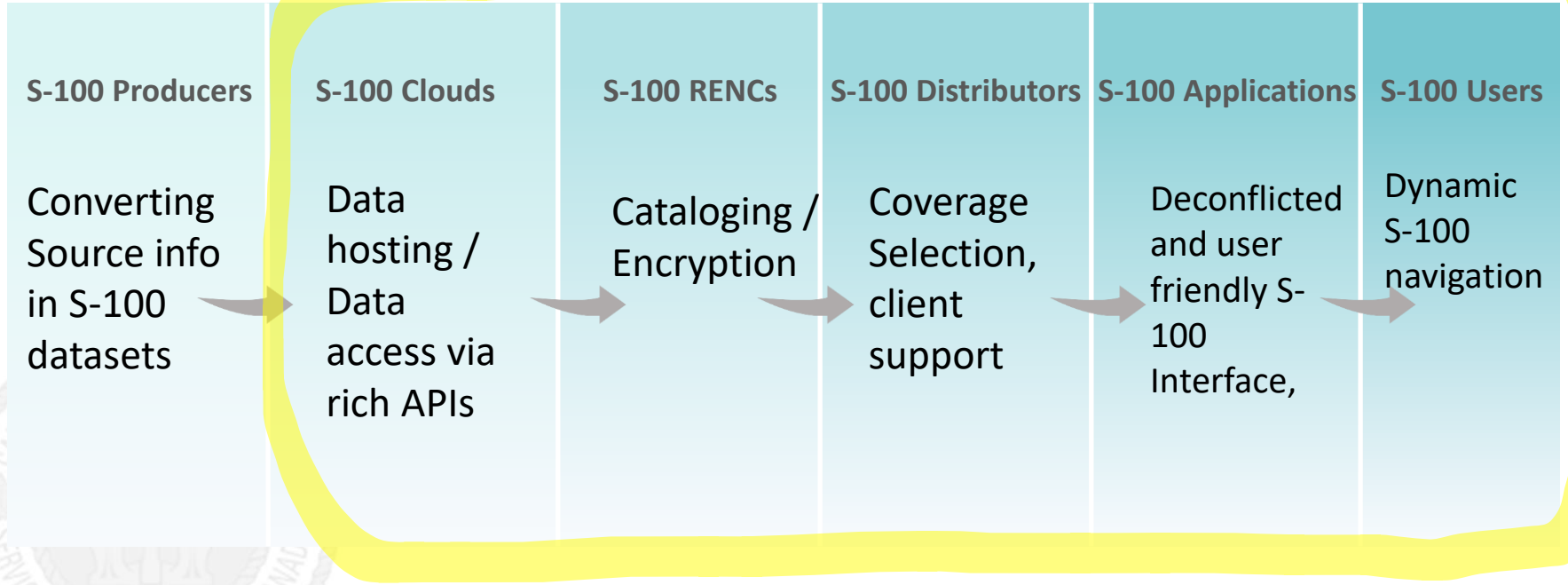
# Status as of today

- S-100 Committee
- Director level interdepartmental on Modernized marine Navigation

S-100 based product specification	Responsible department	Edition	Producer code	Production Capacity	Distribution Capacity	Free or Fee ?
S-101 Electronic Navigational Chart	CHS	2.0	CA00	no		Fee
S-102 High definition bathymetric chart	CHS	2.1	CA00	yes	yes	Fee
S-104 Tidal information	CHS	1.0	CA00	yes	yes	Fee
S-111 Surface Currents	CHS	1.0	CA00	yes	yes	Fee
S-121 Maritime Limits and Boundaries	CHS	1.0	CA00	yes		Free
S-122 Marine Protected Areas	? ECCC / DFO + ?	1.0.0				Free
S-123 Marine Radio Services	CCG	1.0.0	CA01	no	no	Free
S-124 Navigational Warnings	CCG	0.3	CA01	almost	Trial on CCG Furuno ECDIS (spec 1.0)	Free
S-125 Navigational Services	CCG	0.0	CA01	no	no	Free
S-126 Marine Physical Environment	CHS Sailing Directions	0.0	CA00			Free
S-127 Marine Traffic Management	TC - CCG - CHS	1.0.0		no	no	
S-128 Catalogues of Nautical Products	? multi-agency responsibility	0.5 ?	CA00			Free
S-129 Under Keel Clearance Management	CCG	1.0.0	CA01	no	no	Fee
S-131 Harbour Infrastructure	Harbours +CHS	0.0				Free
S-201 Aids to Navigation Information	CCG	1.0.0	CA01	no	no	Free
S-210 Inter VTS Exchange Format	CCG	0.0	CA01	no	no	Free
S-211 Port Call Message Format	CCG + ports?	1.1.0		no	no	
S-212 VTS Information Service	CCG	0.0.1	CA01	no	no	
S-240 DGNS Station Almanac	CCG - NRCAN	1.0.0		no	no	
S-411 Ice information	ECCC	1.1.0	CA02	TBD	TBD	
S-412 Weather and Wave Hazards	ECCC	0.1.0	CA02	TBD	TBD	
S-413 Weather and Waves Conditions	ECCC	0.1.0	CA02	TBD	TBD	
S-414 Weather and Waves Observations	ECCC	0.1.0	CA02	TBD	TBD	
S-421 Route Exchange format	CCG	1.0	CA01	no	no	

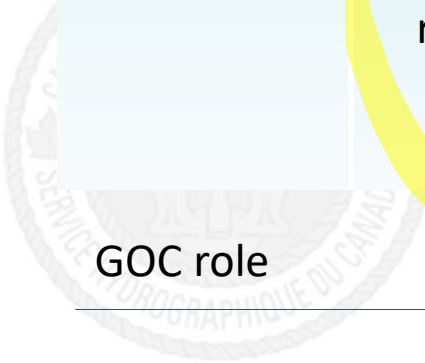


# S-100 Service – Full Value Chain



GOC role

Industry role ,AWS dependency...





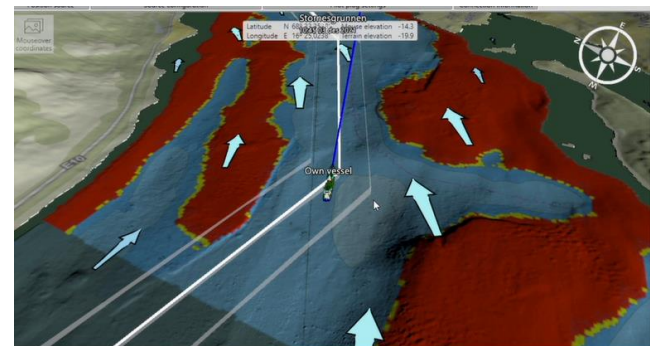


# Work ahead / missing pieces

- Free vs Fee
- Dedicated teams devoted to Catalog Management (S-128)
- Cost of operation for the full distribution chain(Who pays what)
- Level of service / Business Continuity plan / (24/7)
- White paper on Maritime Services Vision ...
  - Great tool to ensure alignment of departments
  - Technical, regulatory, governance, business, policy.

# Question to board / Discussion

- Endorse GOC S-100 seamless approach
- Make sense from your Organization perspective
- White Paper on Maritime Services Vision



Driver is the IMO SOLAS E-NAV but potential data enabler of ...

- Federal Geospatial Platform (<https://open.canada.ca/en/open-maps>)
- E-nav portal (<https://e-navigation.canada.ca/index-en>)
- Canadian Integrated Ocean Observing System (<https://www.cioos.ca/>)
- Marine Spatial Planning
- Digital Twin