S-100 Next generation of Dynamic Geospatial Navigation Services : The Full Value Chain

CHS / Teledyne Caris / PRIMAR / OneOcean / SEAiq / St-Lawrence River Pilots

NOAA Precision Marine Navigation Industry Stakeholder Meeting

2020-09-30

S-100 Service – Full Value Chain

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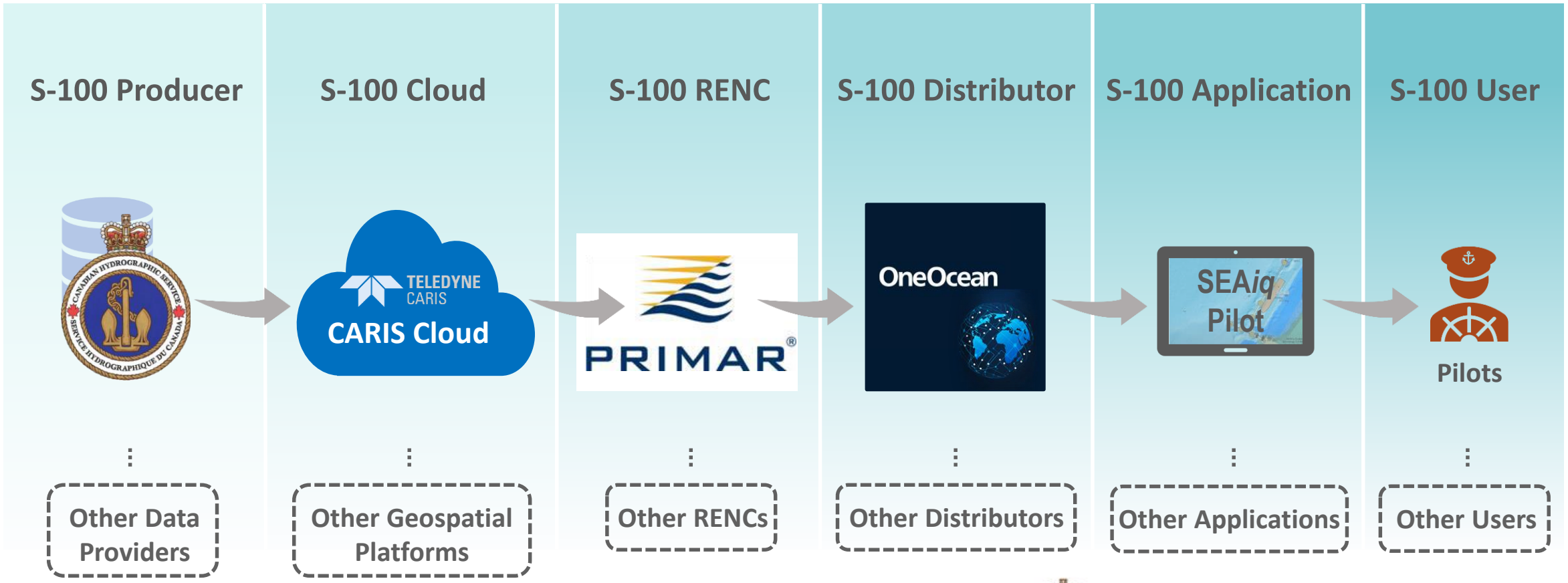

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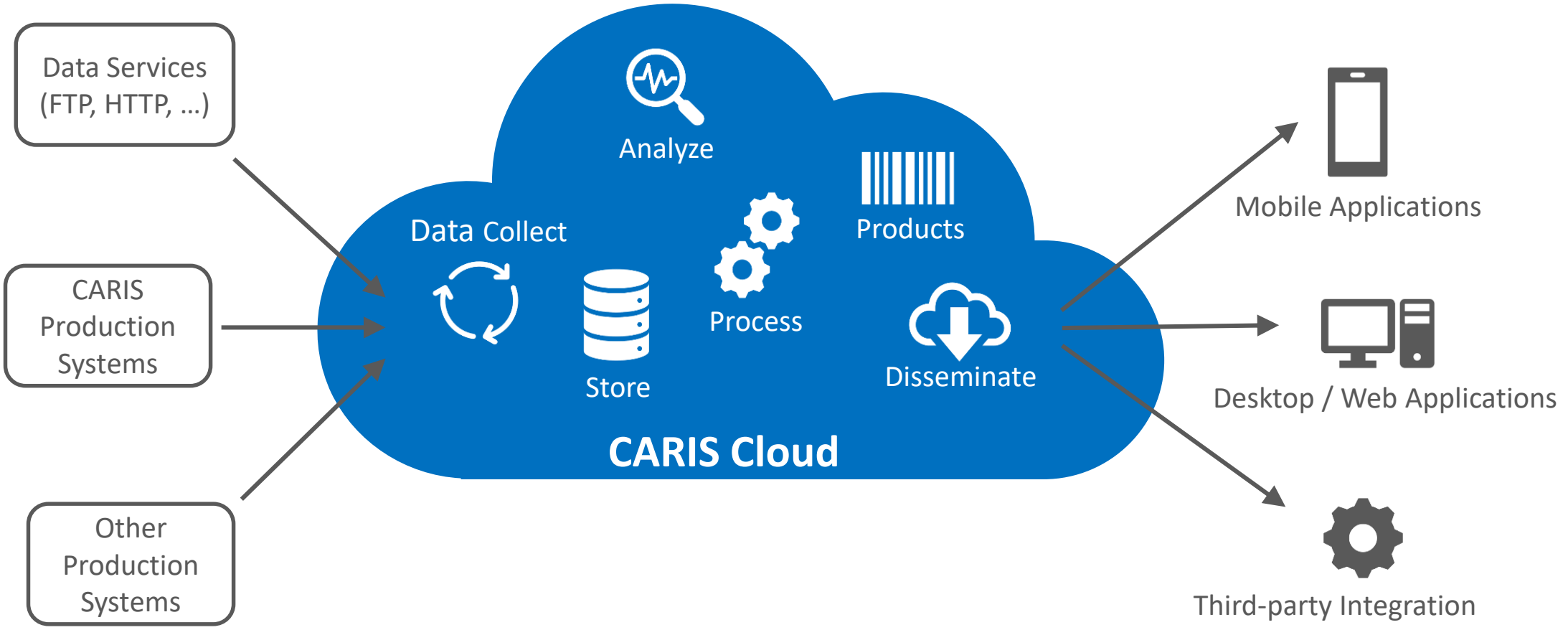
S-100 Producer – Canadian Hydrographic Service

- From Static Product to Dynamic Subscription Service
- Challenging data management (numerous sources to one deconflicted service)
- Authority within the country (CHS = S-101 / S-102 / S-111 / S-104)
- Automated and timely updates
- Writing the book has we go.
- Backend big data analytics has potential

S-100 Cloud – Teledyne Caris

- Trusted technology partner for hydrographic survey, data management and chart production at hydrographic organizations around the world
- Now moving into this new era of products and services providing cloud services and infrastructure to CHS for the S-100 Service
- CARIS Cloud technology and highly automated workflows streamline the survey-to-bridge pipeline and prepare HOs for e-Navigation and the future of autonomous shipping

S-100 Cloud – Teledyne Caris



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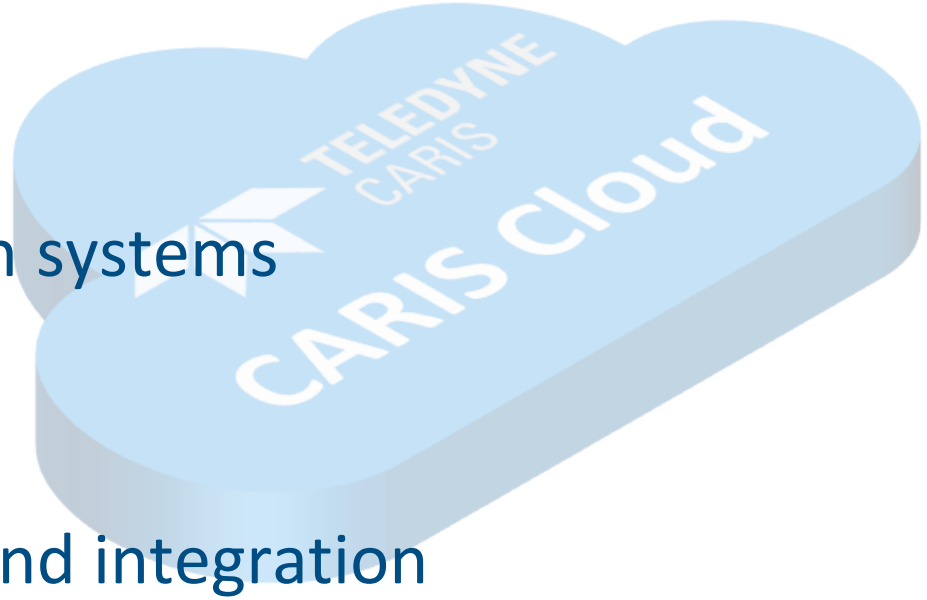
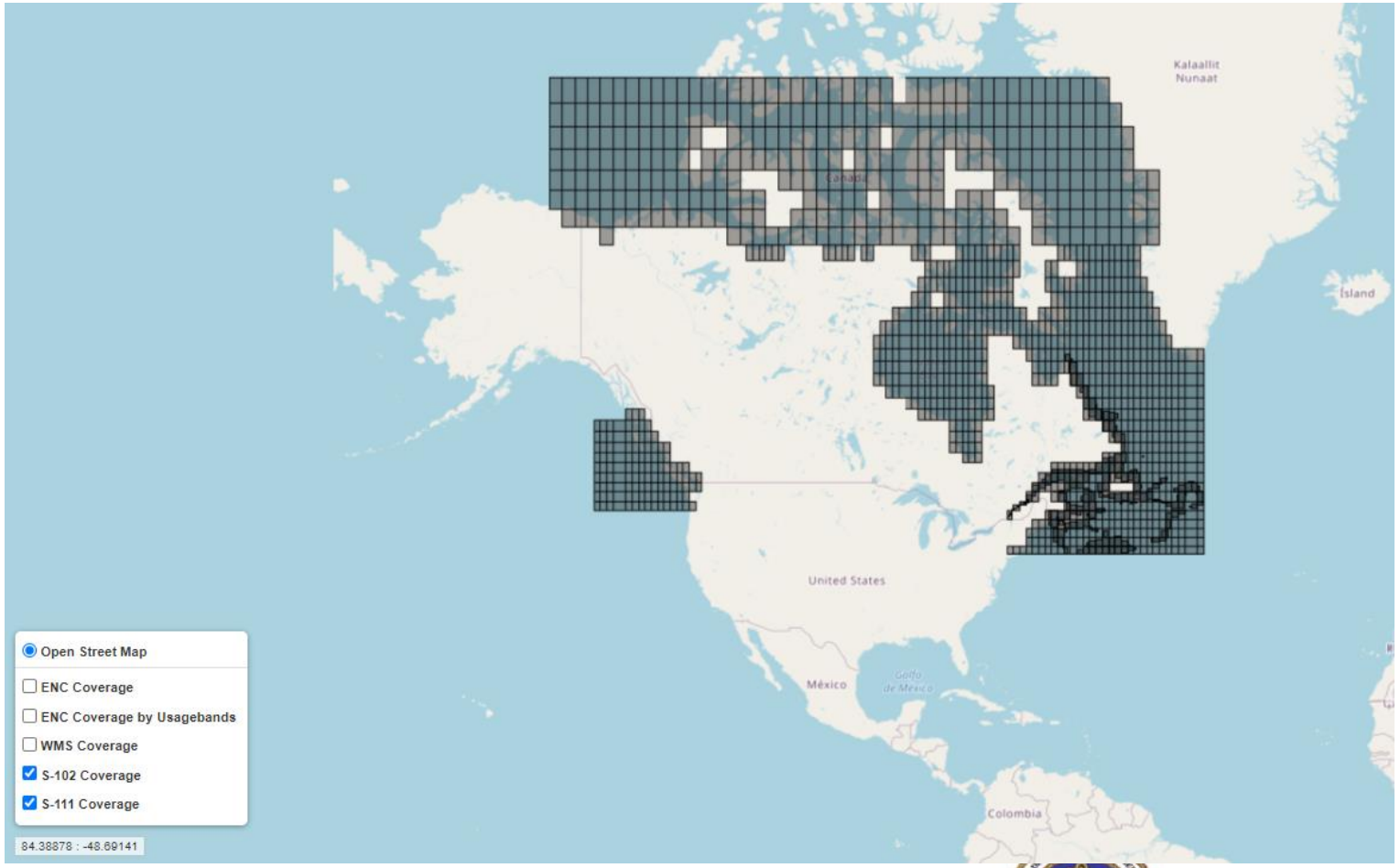
S-100 Cloud – Teledyne Caris

- Scalable cloud platform for geospatial data
- Data processing and product creation in the cloud
  - Push data from production systems to the cloud
  - Pull data from existing data services into cloud
- Streamlined connection to CARIS production systems
- Teledyne CARIS maintains cloud services
  - Cloud infrastructure; software updates
- OGC services and REST API for data access and integration with third-party systems



S-100 RENC – PRIMAR

S-100 Service Coverage

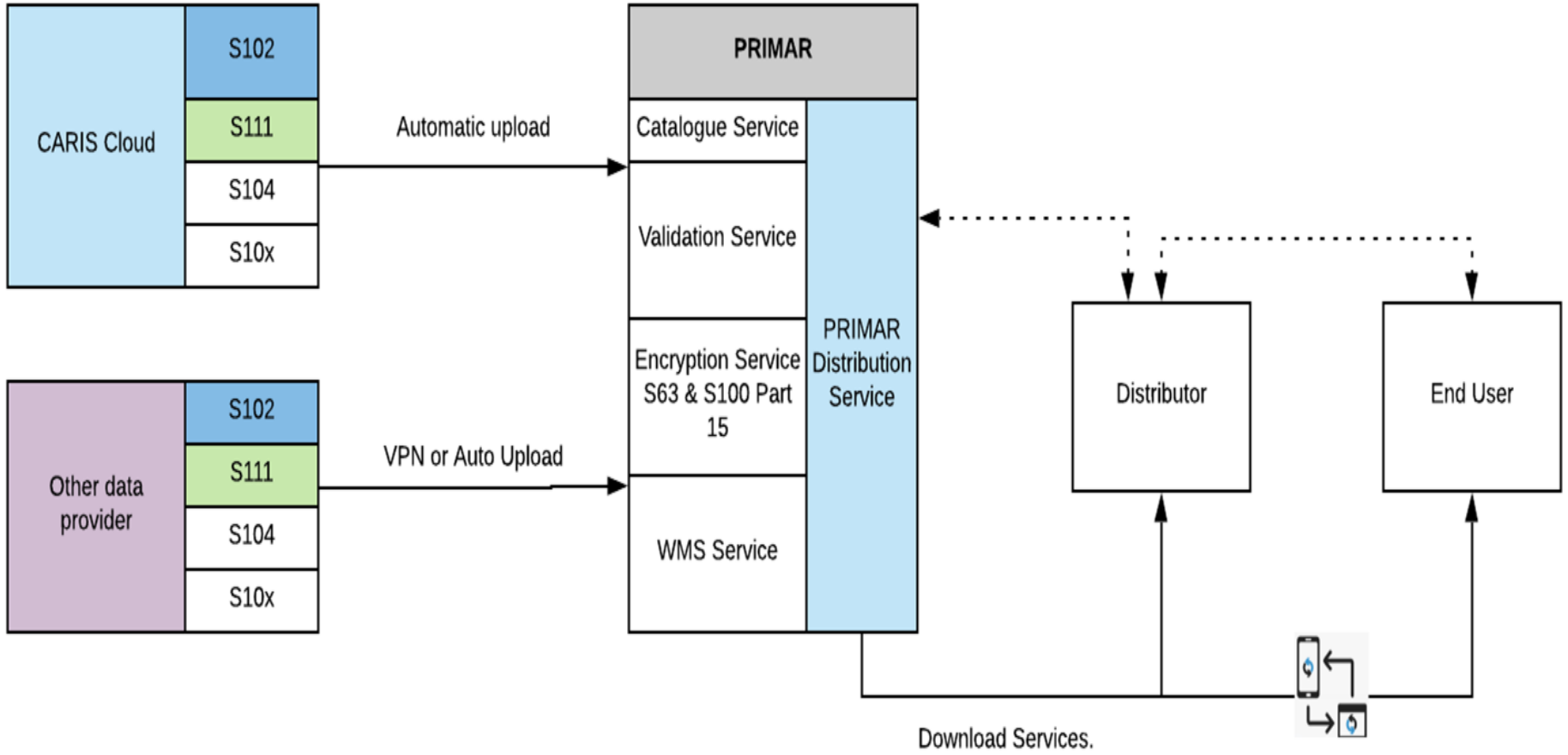


S-100 RENC – PRIMAR

- Automatic upload from Caris Cloud Service inclusive support for Virtual PRIMAR Network (VPN) upload.
- S-100 Part 15 encryption
- 12 month, 1 month demo and R&D subscriptions
- Available via PRIMAR Online services (API)
- S-104 data expected in the Service before end of 2020.

S-100 RENC – PRIMAR

PRIMAR S-100 Service



S-100 Distributor – OneOcean

OneOcean is the largest global supplier of navigational solutions for the maritime industry.

15,000
software users

Our reach extends to
100
countries

300
experts in our business supporting customers everyday

Over
25
years of experience in the Canadian / North American market

We serve over
2,600 companies
worldwide

Nearly
20,000
vessels rely on us and our global network of partners and agents

As a trusted innovator with extensive experience in the Canadian market, OneOcean is well positioned to create awareness and promote CHS' s-100 data

S-100 Distributor – OneOcean

- PRIMAR subscription setup and assistance with coverage selection
- Order processing via PRIMAR portal
- PRIMAR subscription management and renewal
- 24/7 support with strong knowledge of SEAiq software

OneOcean fully supports the end user to ensure a seamless experience

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S-100 Application – SEAiq Pilot

- Adopted by over 1/3 marine pilots world-wide
  - St Lawrence Seaway, Atlantic Pilotage Authority
  - London, Hamburg, Miami, Los Angeles, Singapore…
- S-100 series products developed in cooperation with CHS and CPBSL pilots
- S-102 supported since early 2020
  - Vector and Raster presentation
  - Ability to set contours and intervals to any depth
  - Allows overlay of ENC features (ATON, etc)
- S-111 and S-104 planned for 2021
- Automatic download and update from PRIMAR

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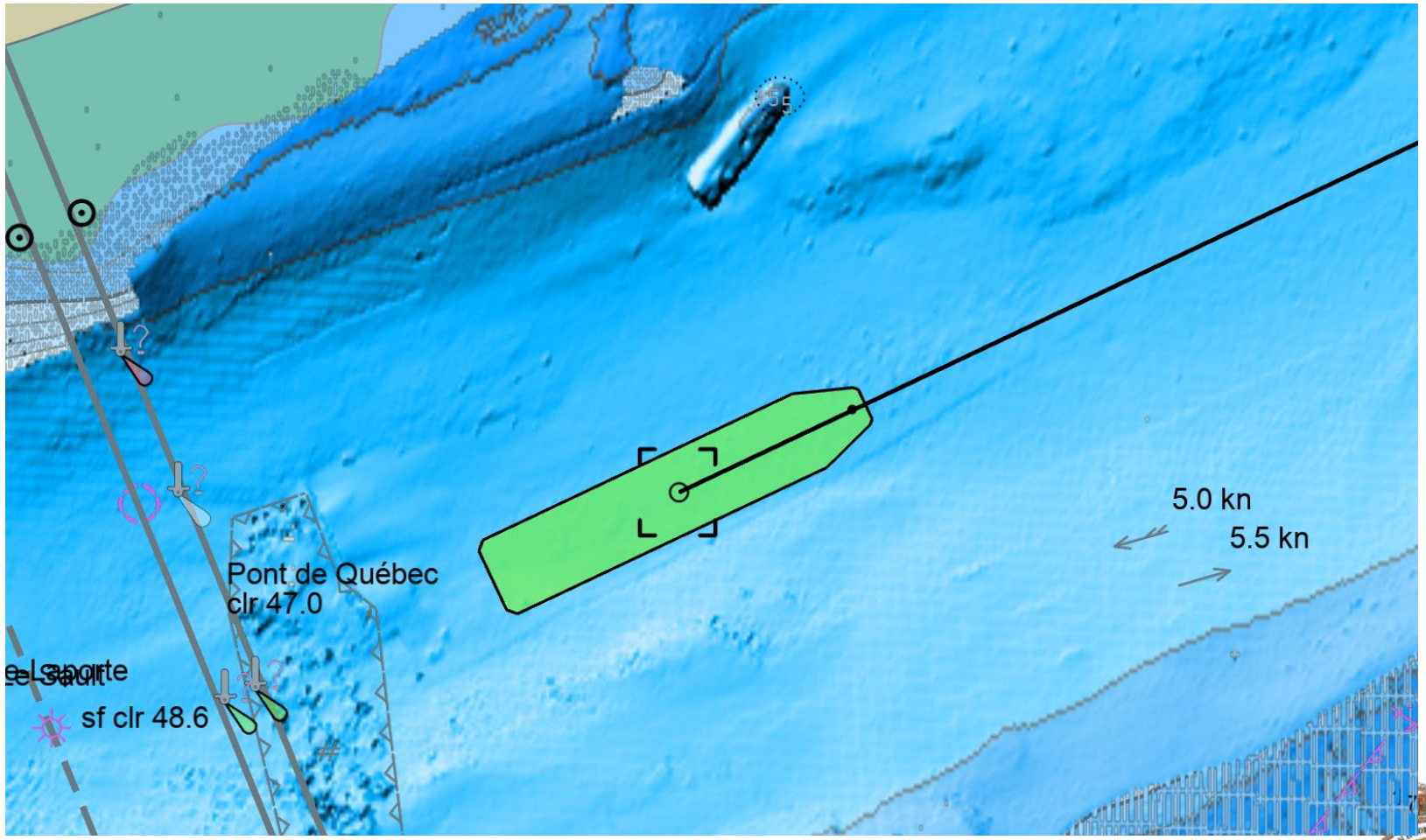
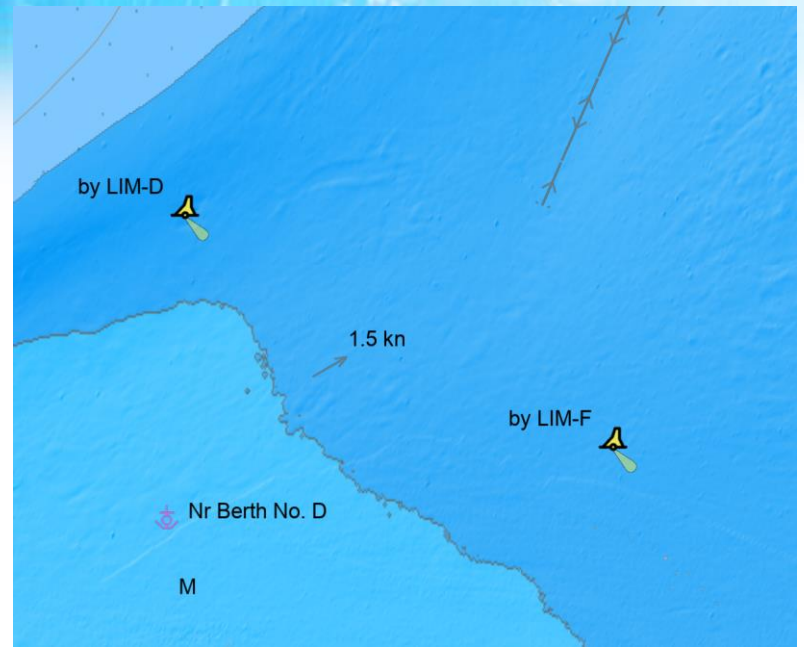
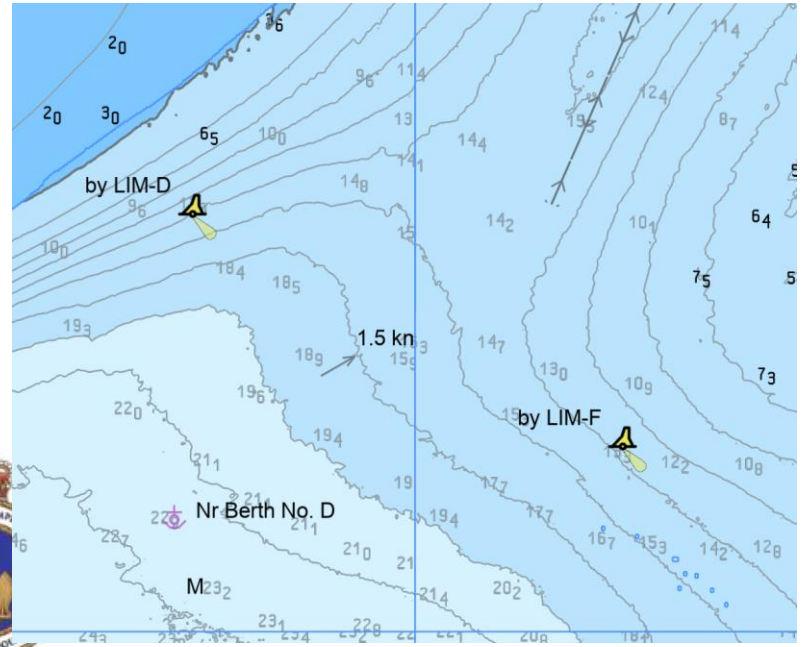
S-100 Application – SEAiq Pilot

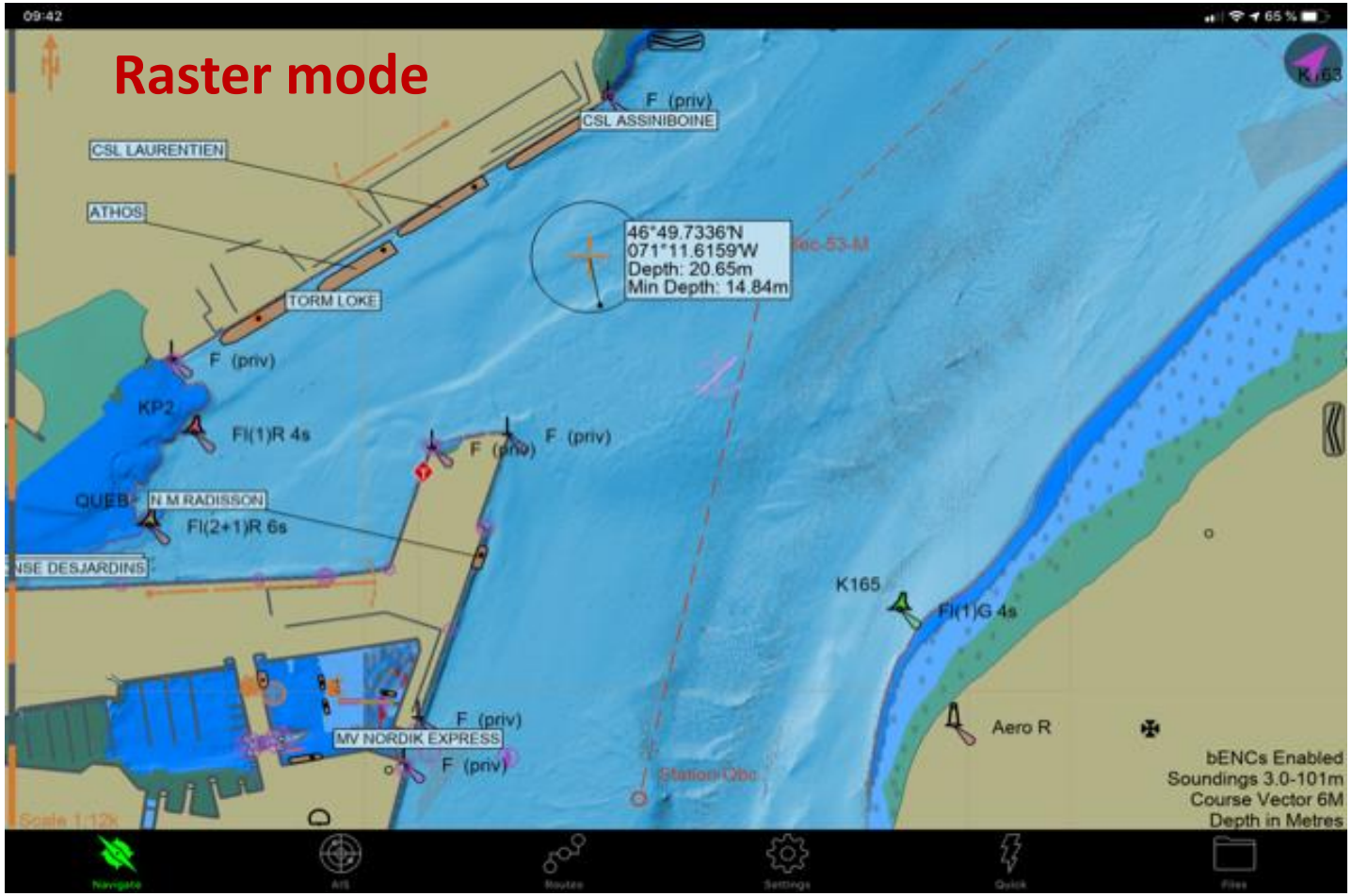






S-100 User – St-Lawrence River Pilots

Piloting with S-102



The Project

- Sea trials: approximately 700 hours, still ongoing
- Various ships, sizes, drafts, weather & equipment
- Making a navigator-friendly product

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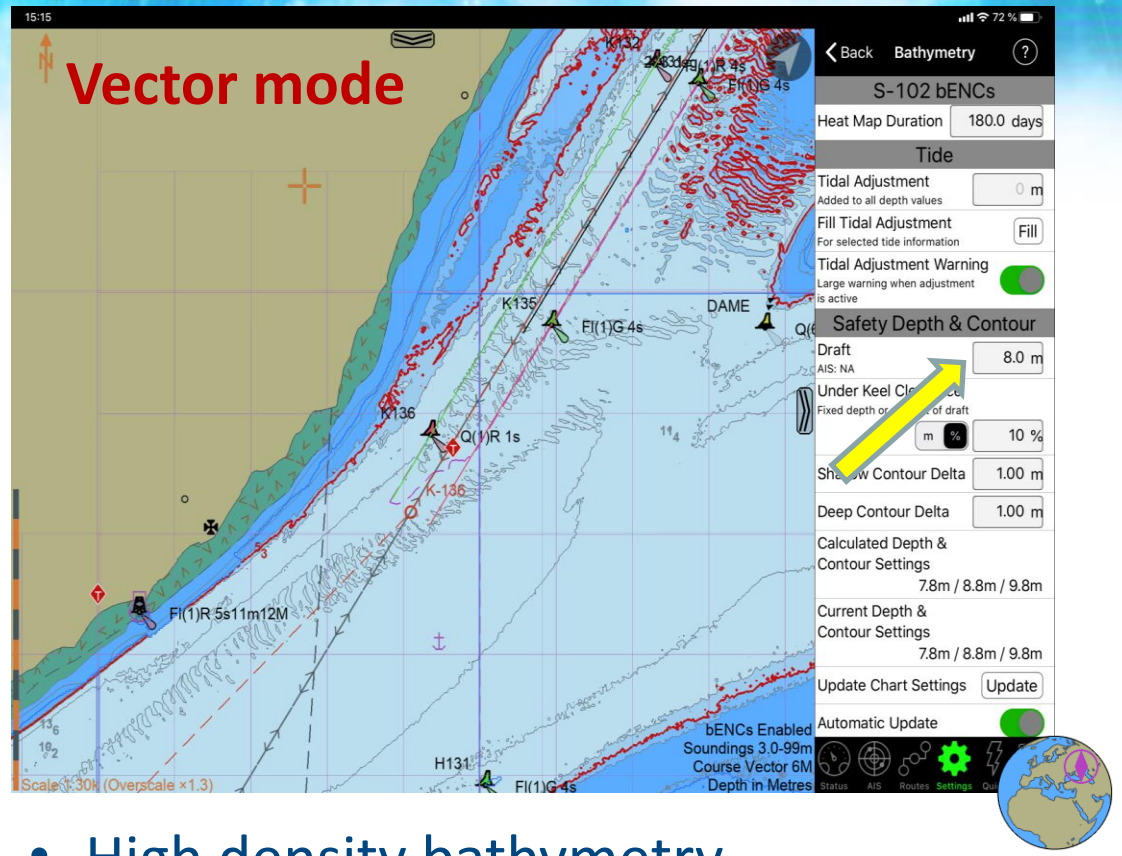
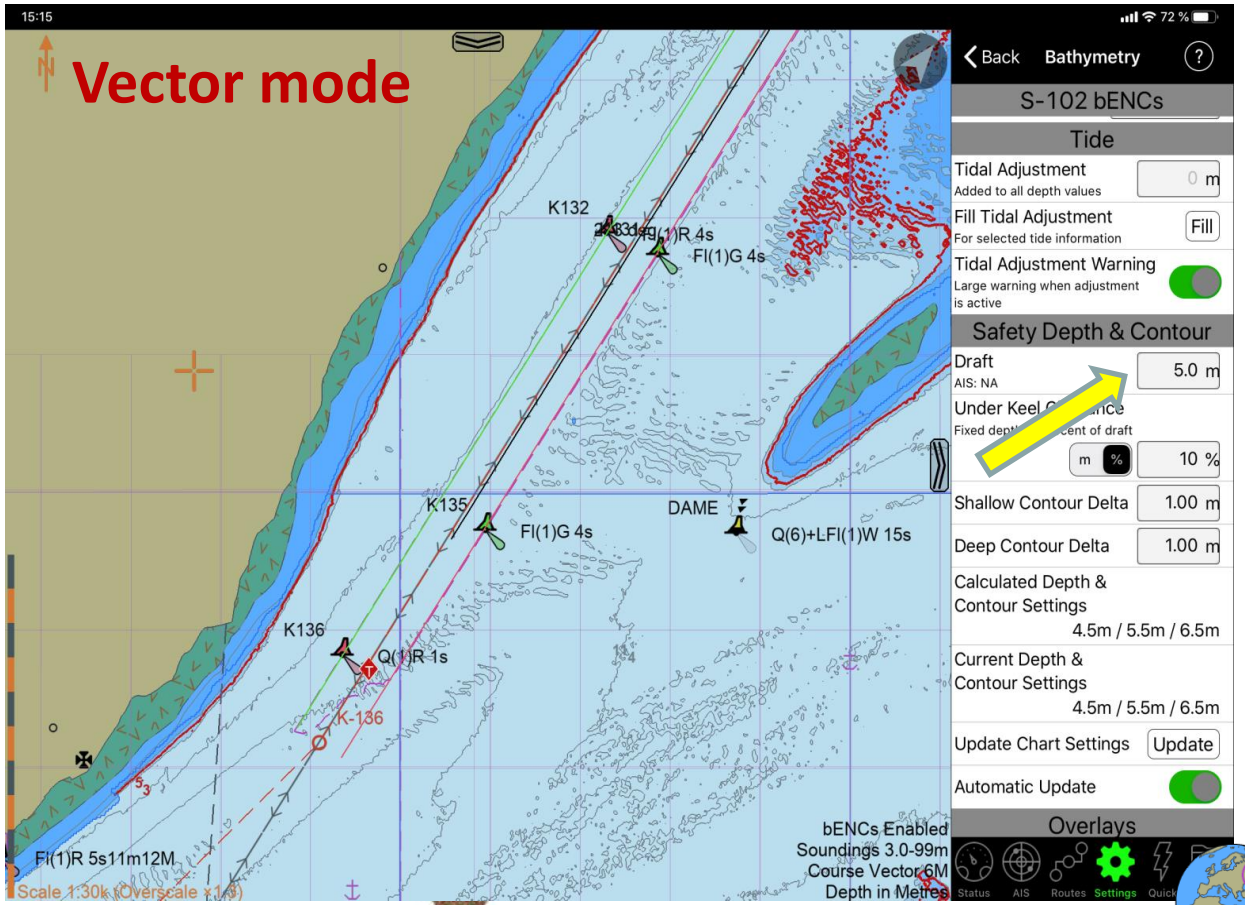
St-Lawrence River Pilots

Piloting with S-102



- High density bathymetry
- Safety contour adapting to ship draft
- Dynamic tidal adjustments
- Depth query cursor
- Heat map (update tracking)



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Looking Forward

- National - International Community engagement
- Full 4 Dimension Service
- Number of potential Geospatial Apps are endless
- Hydrography has a huge role to play to create a dynamic digital twin of oceans
- 2 way communication, floating assets to feed observation back to forecasting system (Real-time data assimilation)
- S-100 services will enable E-nav, autonomous technologies and dynamic digital twin…

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