



14th Meeting of the WENDWG

Report of the United States – Canada Hydrographic Commission (USCHC)

Agenda Items 05.1Ac

WENDWG 14, Norfolk, Virginia, USA, 20 - 22 February 2024



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PROGRESS ON S-100 IMPLEMENTATION AND COORDINATION (1)

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Organization

- Continuing to streamline chart portfolio and moving to new ENC gridded schema as a foundational move to prepare for S-100.
 - CA and US have chosen different grid implementations
 - Three standard usages will be implemented for all S-100 in CA
 - The status of the NOAA gridding can be found [here](#)
- [USCHC Transboundary Web App](#) has simplified coordination in the transboundary areas

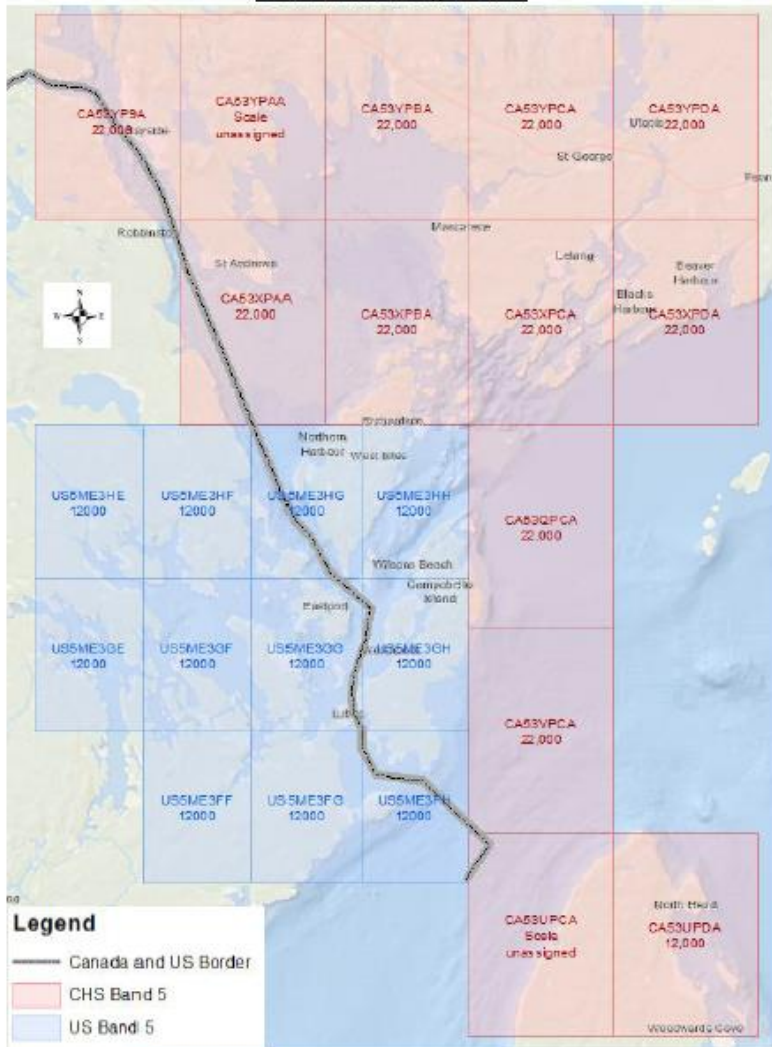


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TRANSBOUNDARY GRIDDING SOLUTIONS IN PORTS/HARBOURS AND TRANSIT SCALES - ATLANTIC CANADA EXAMPLE

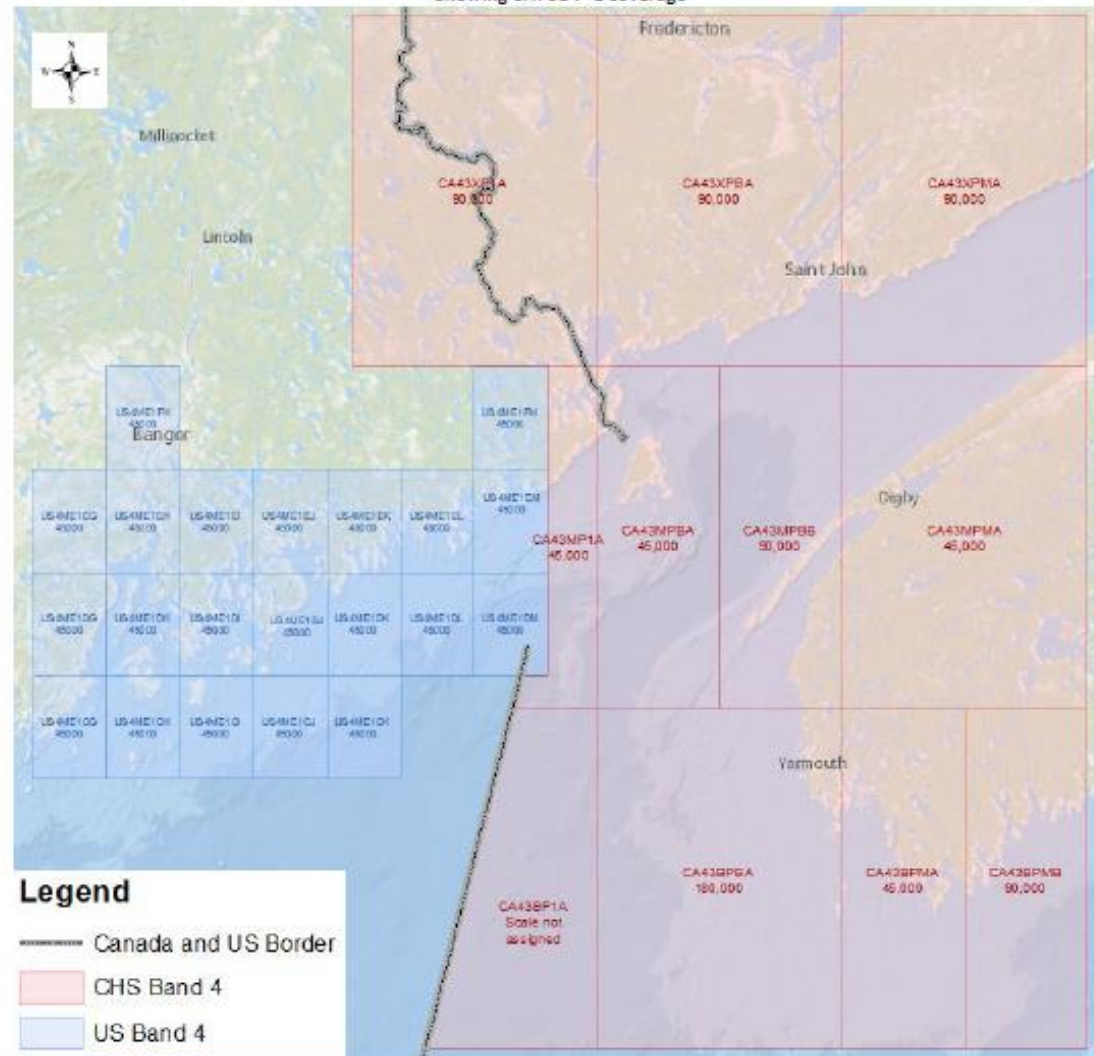
International Hydrographic Organization

USCHC Revised Usage: Band 5



USCHC Revised Usage: Band 4

Showing CATCOV=1 coverage



[USCHC Transboundary Web App](#)



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PROGRESS ON S-100 IMPLEMENTATION - USA

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Precision Marine Navigation
NOAA S-100 Product Coverages

- S-111 General Coverage
- No S-100 General Coverage
- S-102 Harbor Coverage
- No S-100 Harbor Coverage
- S-102 Navigational Approach Coverage
- S-111 Navigational Approach Coverage
- S-102 & S-111 Navigational Approach Coverage
- No S-100 Navigational Approach Coverage

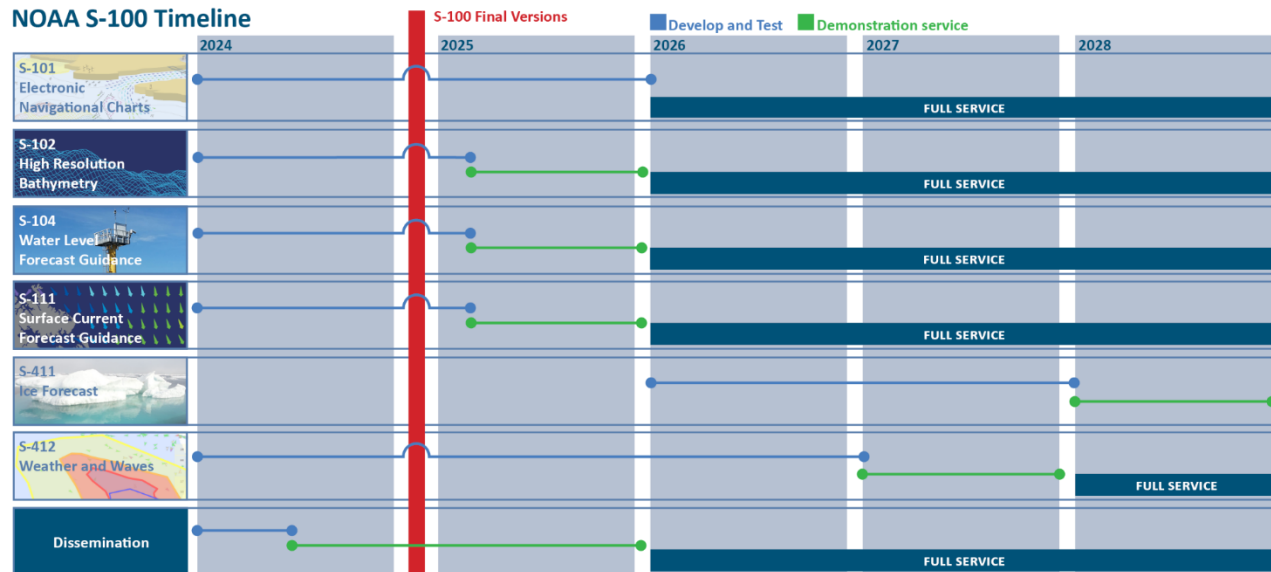
AVAILABLE S-102 DATA (4 M)

S-102 Version: Ed2.1.0
ENC Cellname: US5NY1BL
Region: approaches to new york
Horizontal Resolution: 4 m

Direct Download [S102US00_US5NY1BL.h5](#)
Access S-100 Exchange Catalogue [Discovery Metadata](#)

AVAILABLE S-102 DATA (16 M)

NOAA S-100 Timeline



AWS S3 Explorer

noaa-s102-pds / ed2.1.0 / national_bathymetric_source / approaches_to_new_york / dcf2 / tiles

Hide folders? Folder Bucket 89

Show 50 entries Search:

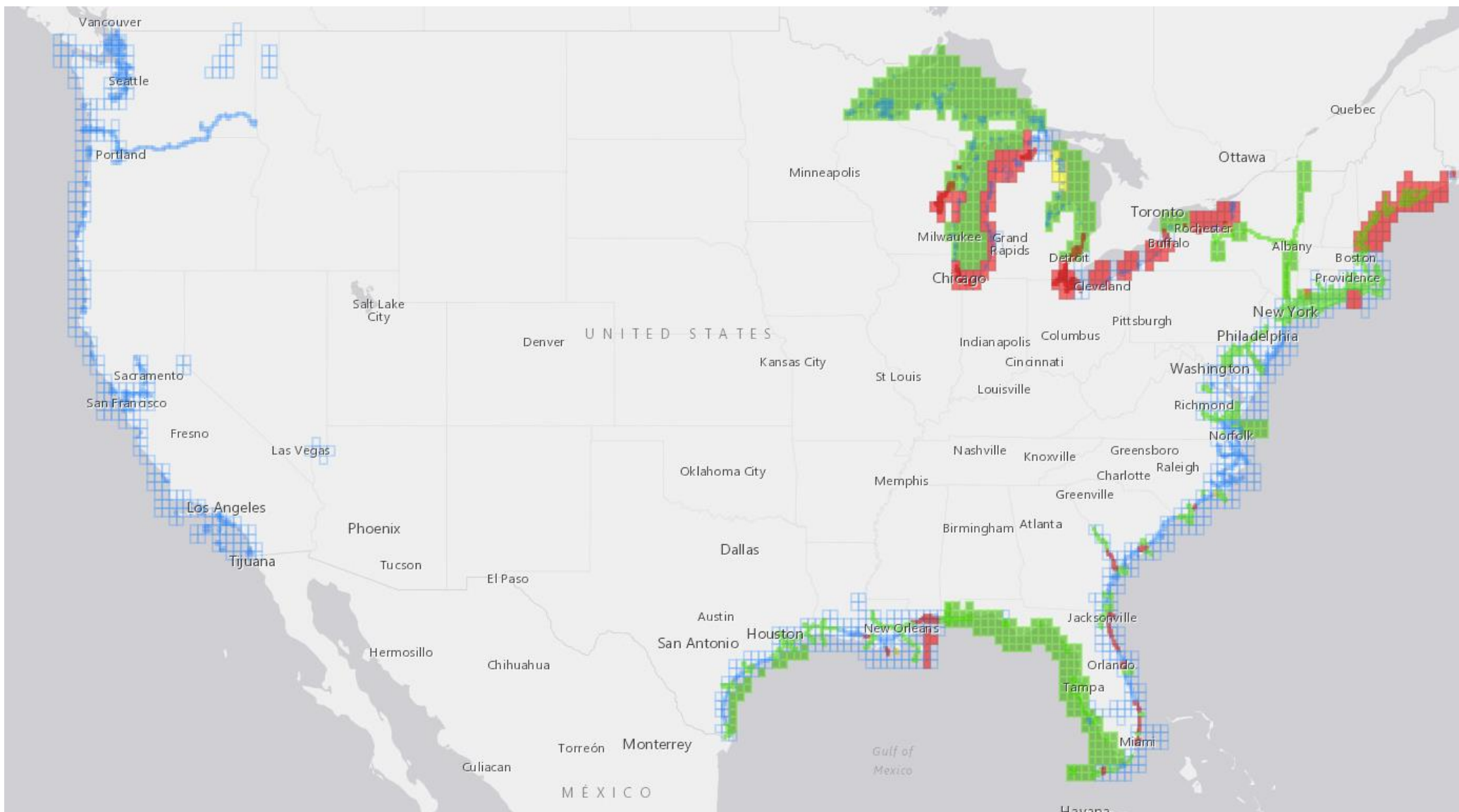
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102US00_US4NJ1FI.h5	a month ago	2023-12-06 13:16:06	10 MB
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102US00_US4NY1AV.h5	a month ago	2023-12-06 13:16:17	11 MB
102US00_US4NY1AW.h5	a month ago	2023-12-06 13:16:02	11 MB



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PROGRESS ENC ON MIGRATION TO GRID - USA

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- Completed
- Final Quality Check
- In Work
- Planned



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S100 – USA (S57-S101 EXAMPLE)

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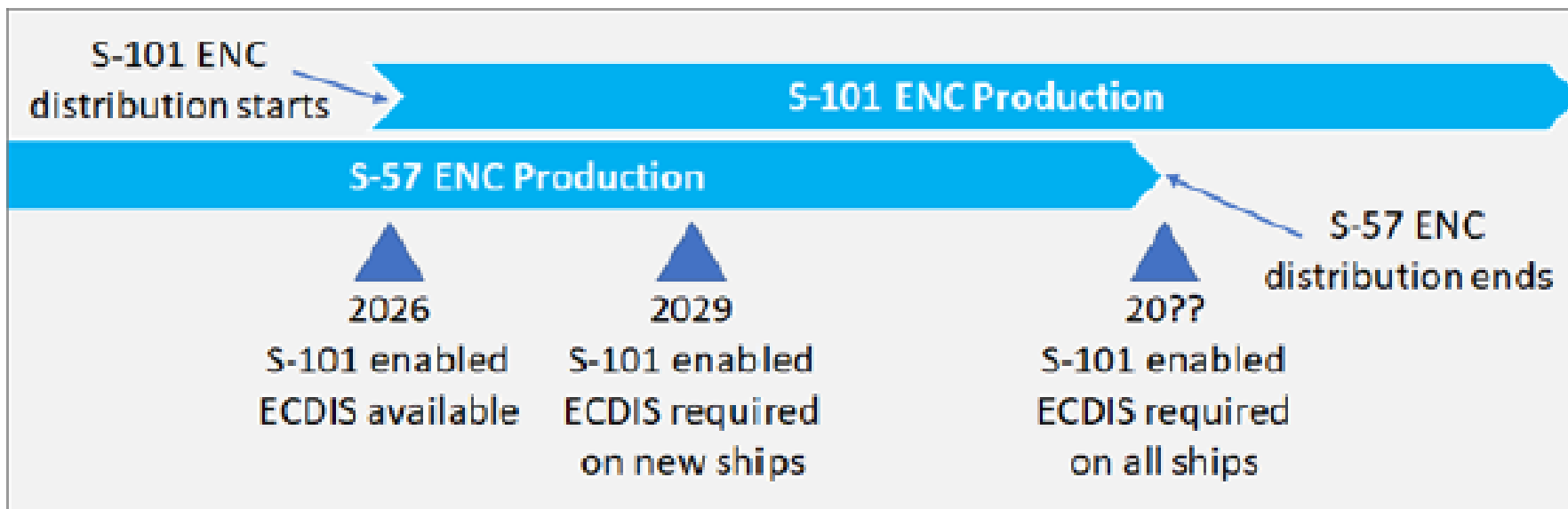


Figure 1. ECDIS functionality milestones for ships subject to IMO regulations, and timelines for the start of S-101 ENC distribution and end of S-57 ENC distribution.

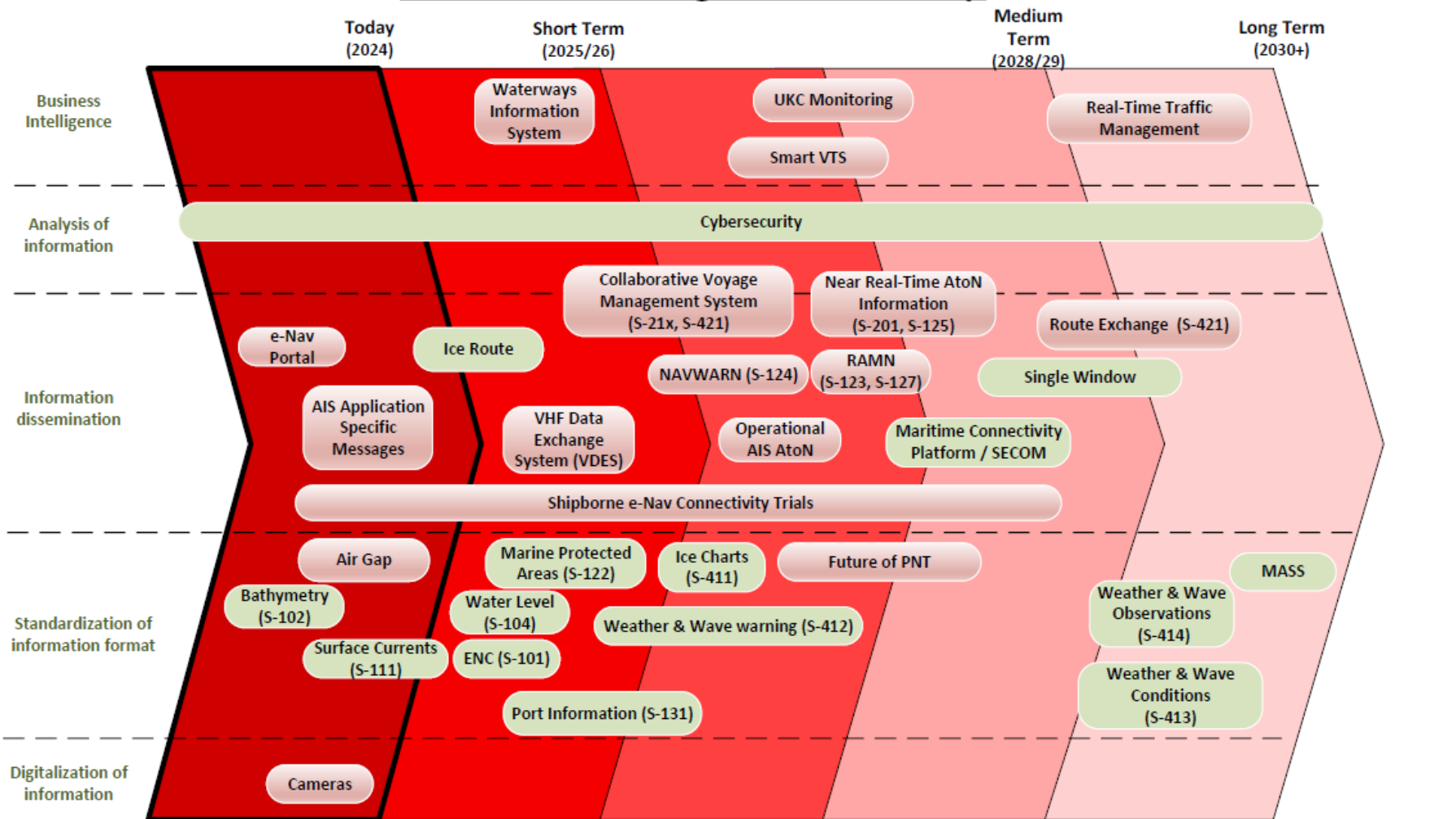
Please refer to NOAA's S-57 to S-101 ENC Production Transition Plan



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S-100 COORDINATION - CANADA

Canadian e-Navigation Roadmap



MASS – Maritime Autonomous Surface Ship
 UKC – Under Keel Clearance
 AIS – Automatic Identification System

VTS – Vessel Traffic Service
 NAVWARN – Navigational Warning
 VHF – Very High Frequency

RAMN – Radio Aids to Marine Navigation
 SECOM – Secure Communication

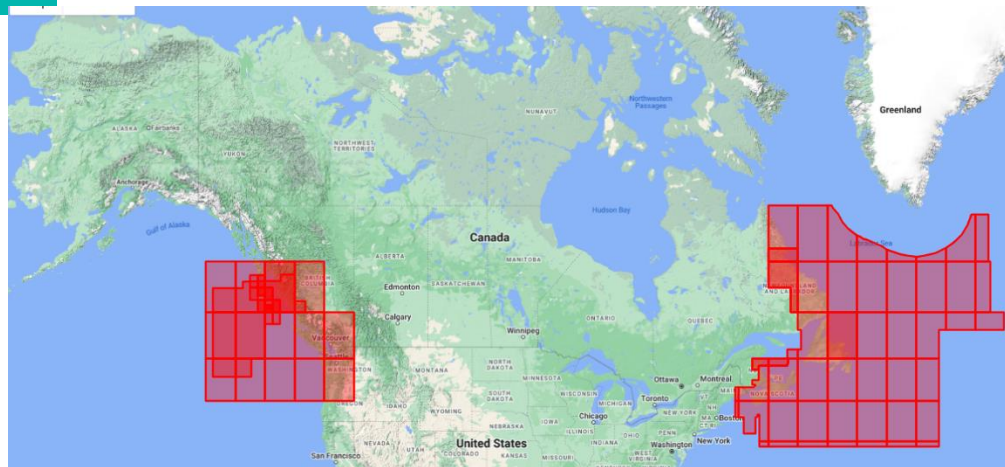
ENC – Electronic Navigational Chart
 PNT – Positioning, Navigation, and Timing



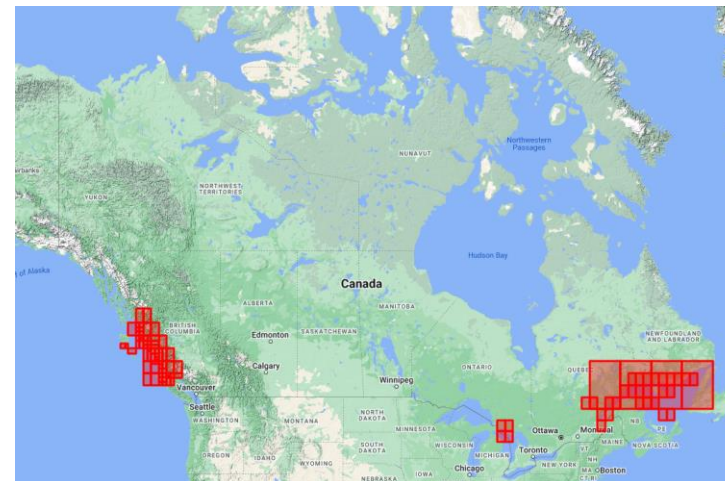
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PROGRESS ENC ON MIGRATION TO GRID - CANADA

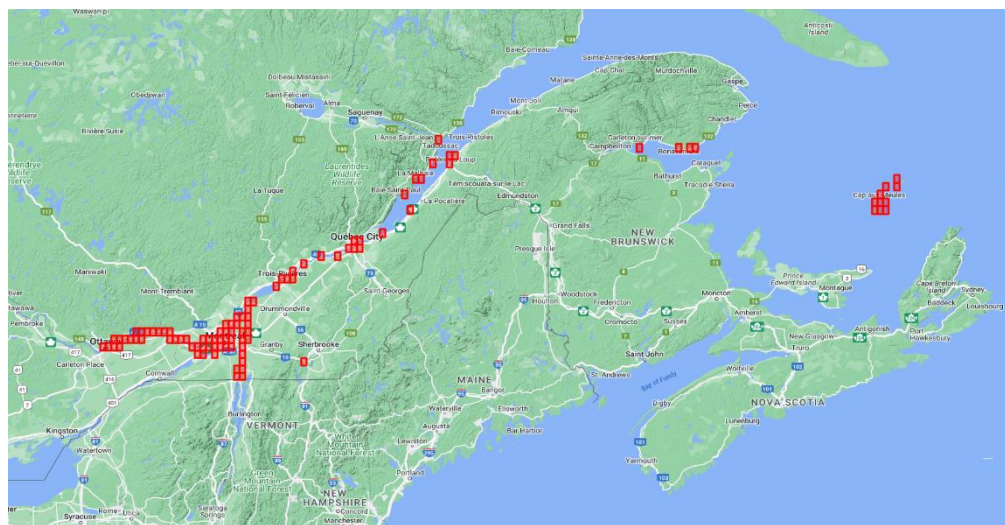
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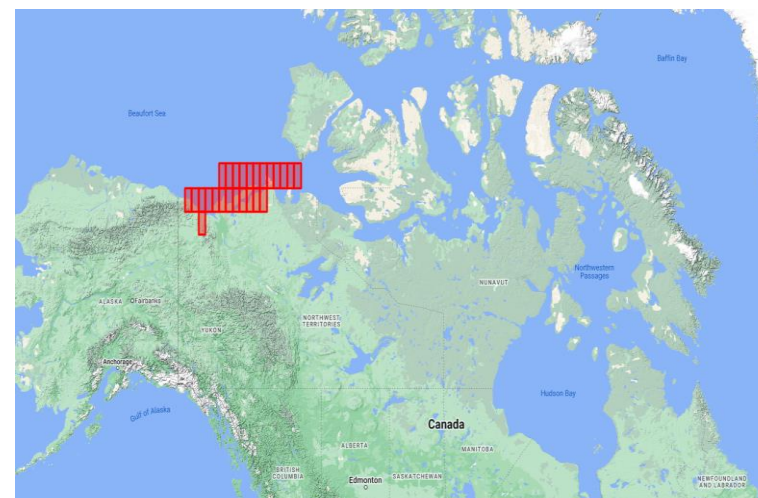
Overview Grids



Transit Grids - Southern



Port Grids – St Lawrence



Transit Grids - Arctic



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USCHC READINESS REPORT

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No.	Prod Spec	Priority	Year of putting in production	Need support Yes/NO
S-101	ENC	1 (outside SOLAS ECDIS, S-101 is not as important)	2025	Yes – will depend on vendor to transition into a dual fuel production system
S-102	Bathymetric Surface	2	Already in production	No
S-104	Water Level Information for Surface Navigation	3	2024	No
S-111	Surface Currents	4	Already in production	No
S-124	Navigational Warnings	5	2025	No
S-411	Ice Services Information	7	2026	Canada: Yes; USA: No
S-412	Marine Weather Warnings	6	2026 or later	Canada: Yes; USA: No
S-128	Catalogue	8	2025	Canada: Yes; USA: No



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PROGRESS ON S-100 IMPLEMENTATION AND COORDINATION

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- Individually, CA and US are in a good positions to provide the minimum S-100 Route Monitoring information in accordance with the IHO Roadmap and the IMO timelines.
 - CA, working closely with its production s/w provider, plans to migrate its database holdings from the S-57 data model to the S-100 model for S-101 native around 2025
 - Transitional begins 2025: .bsb files retired; S-101 generated direct from database
 - 2026 full portfolio of S-101 ENC; beginning of dual fuel period with S-57 auto-generated from S-101
 - US has produced its initial S-57 to S-101 transition plan (See Annex)
 - Initially will start with major ports
 - Accelerated our gridding effort to be complete by 2026
- Discussions have been held as to how S-100 implementation impacts traditional paper chart production.
- Both countries have operationalized ENC-direct-to-paper chart solutions and are ramping up
 - USCHC willing to share lessons-learned to other member states



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CHALLENGES (1)

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- A clear, synoptic regional (US-CA) vision of the S-xxx world is on the agenda of the next USCHC (May 2024):
 - Regionally, transboundary agreements that extend beyond ENCs (e.g. S-102, 104) will have to be finalized
 - S-111 may have a different solution
- The implementation of different grid solutions in the Member States has increased the level of effort.
- Gridding coordination already underway, but need to coordinate S-57, 101 and dual fuel
 - Issues of distribution have not been discussed in depth
 - CA and US operate under very different business models



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CHALLENGES (2)

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- For CA domestic coordination important, as well
 - Multiple producing departments
 - The design and implementation of a national S-128 catalogue (See Canada's paper)
 - Across the board training for S-xxx
- For US
 - For S-101 Transition will start with major ports
 - Under Dual Fuel there will be 14000+ ENCs to manage (including validation)
 - Leveraging our AWS dissemination for S-100 Products that are under NOAA's authority to produce
 - Coordinating with our interagency partners
 - National S-128 catalogue and digital signatures and encryption
 - Encryption happens via the RENC process



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CONCLUSIONS AND RECOMMENDATIONS

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- USCHC Member States (MS) are individually well positioned to deliver the route monitoring elements of the S-100 Roadmap.
- There is much work to be done and further coordination and collaboration will be required both internal to the MS and within the Commission itself to fulfill the promise of S-100.
- The interests and the perspectives of the clients must be considered.
- Coordinated national and regional communication plans are required.
- The implementation of S-128 may need special consideration by the WENDWG (Canada has submitted a paper)
- USCHC S-100 Transboundary framework
 - Willing to share our experiences with other Members States



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ACTIONS TO BE CONSIDERED BY THE WENDWG

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- WENDWG is invited to:
 - Note the USCHC Report

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