

Enhanced Maritime Situational Awareness (EMSA)

Nunavik Marine Planning Forum
February 2026

Gabriel Partington – Transport Canada



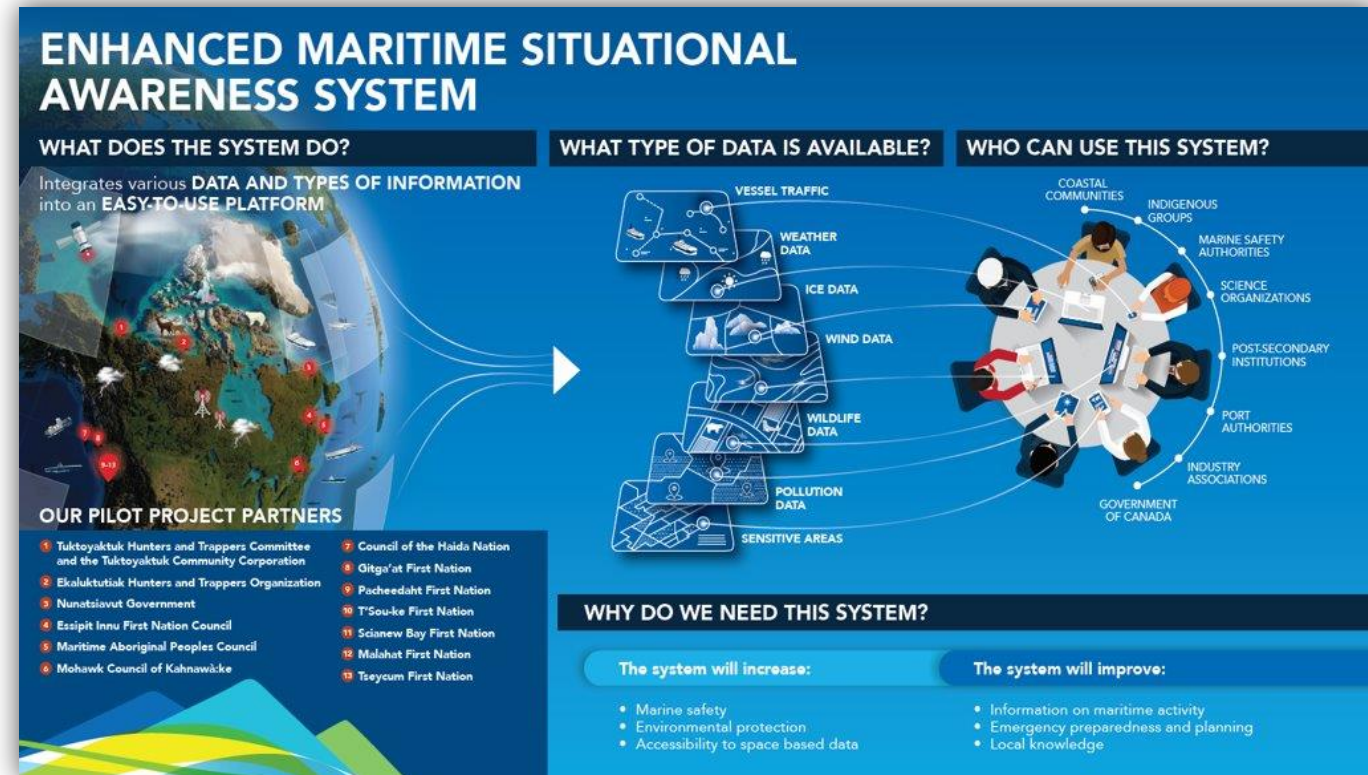
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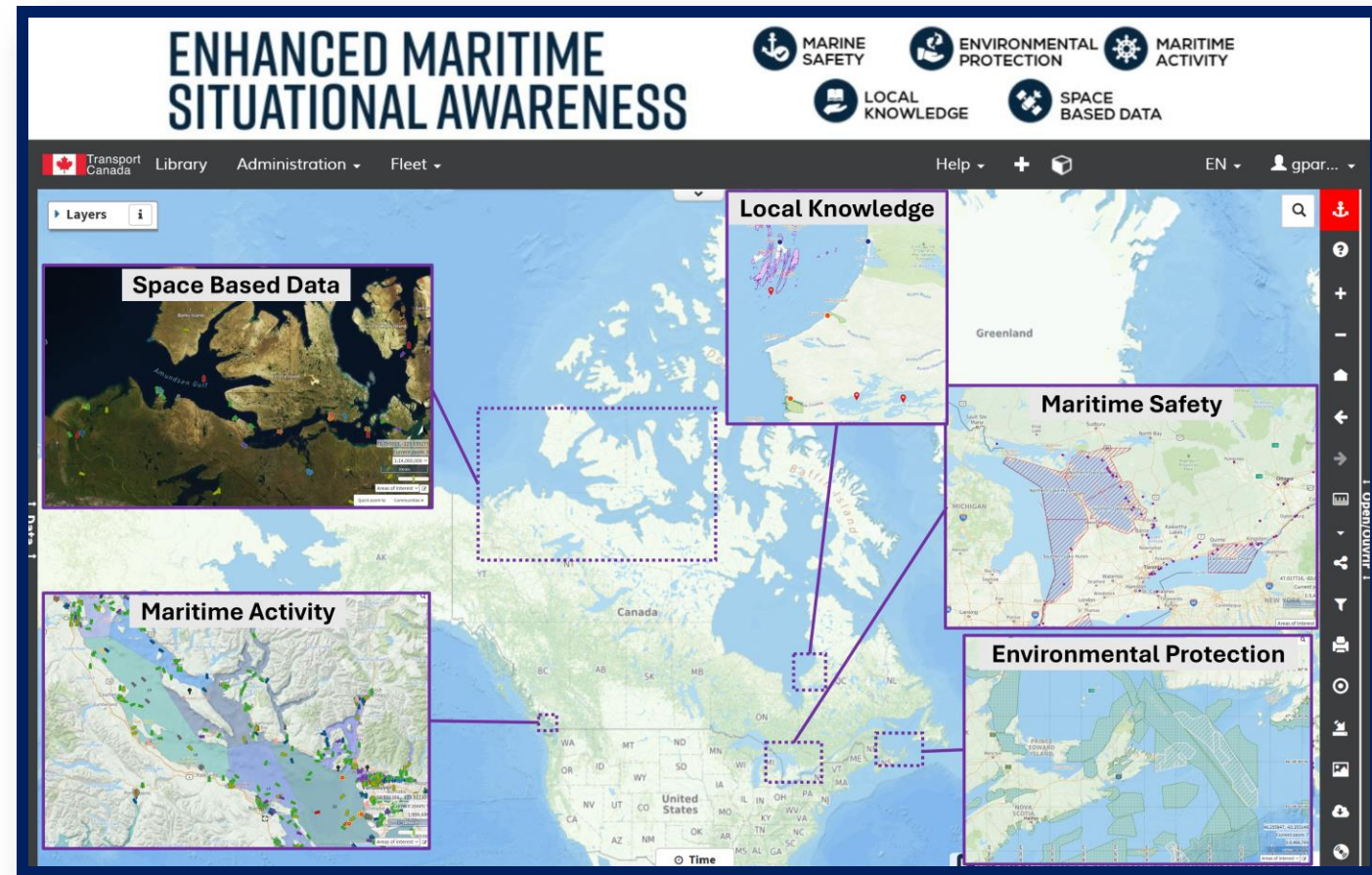
What is the EMSA system?

- **A mapping tool** co-developed and co-managed with 13 Indigenous partners across Canada, including First Nations and Inuit communities.
- **Supports respectful collaboration** in planning and decision-making for marine and coastal areas.
- **Adapts to community needs**, evolving based on feedback from Indigenous users and partners.
- **Helps protect waters and lands** by improving maritime awareness, safety, and environmental monitoring.
- **Accessible at no cost**, with user-friendly features designed to support Indigenous priorities and knowledge systems.

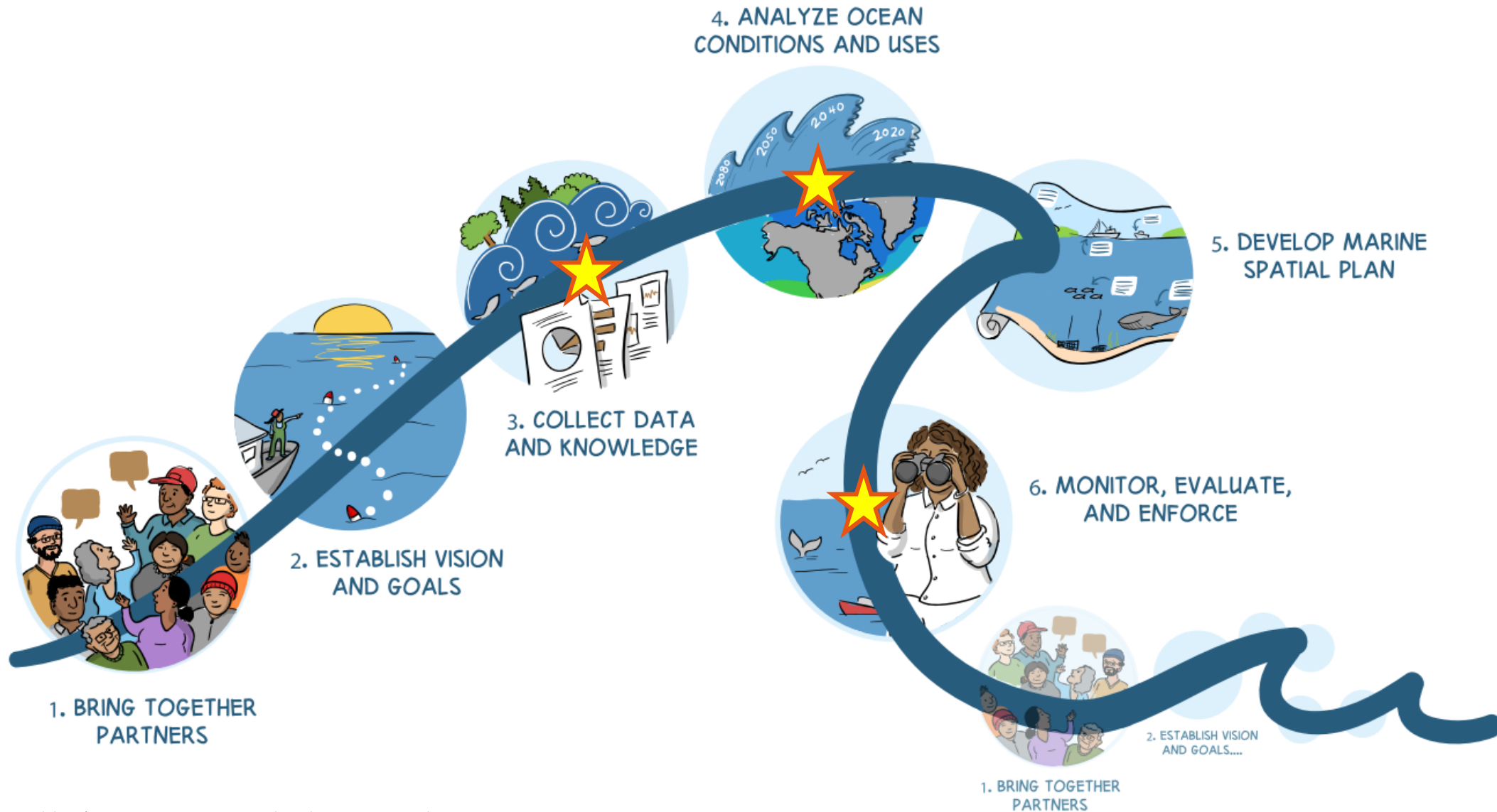


What is the EMSA system?

- A mobile app designed to **support offline work in remote and coastal areas**
- **Import and connect your own data** to reflect local knowledge and priorities
- **Create custom maps and web applications** tailored to your community's needs
- **Explore historical and predictive data** to support planning and stewardship
- And much more, EMSA grows with your input!



EMSA and the Marine Planning Process



What Data Can EMSA Show?

1. Indigenous & Local Knowledge

- Community-identified use areas (harvesting, routes)
- Culturally important places and features

2. Human Use and Activity Data

- Near real-time/ Historical vessel traffic (AIS)
- Shipping Routes & Traffic density

3. Environmental and Ocean Conditions

- Weather and oceanographic data (winds, currents)
- Ice and seasonal conditions (where available)

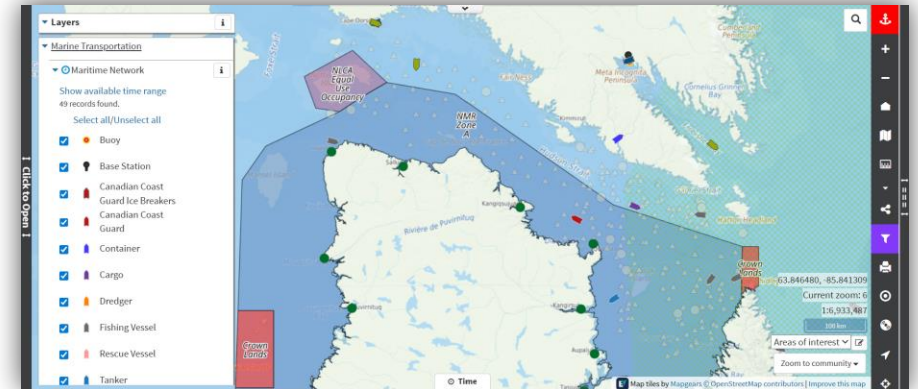
4. Ecological and Conservation Information

- Protected and conserved areas
- Species distributions and observations

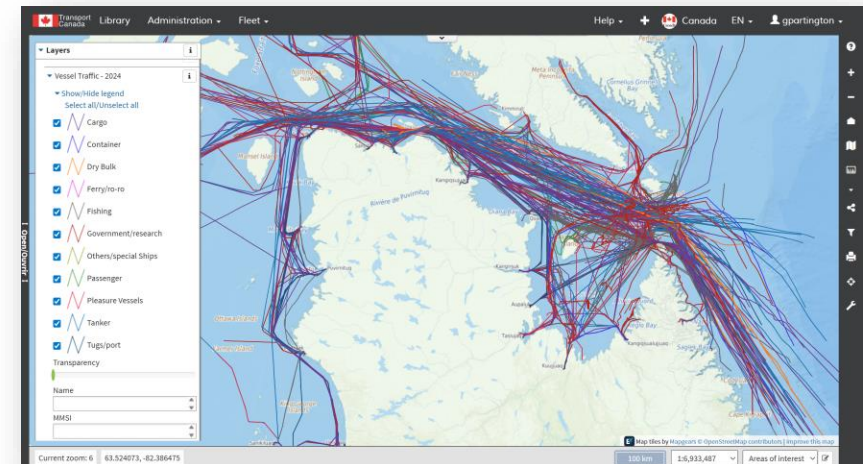
5. Planning and Management Boundaries

- Geofences and sub-fleet monitoring
- Closure zones and regulatory areas

Near real-time vessel traffic from AIS feed



Maritime Traffic Density in 2023



+ Import your own datasets!

Data Sharing Guided by OCAP® Principles

EMSA adheres to principles of data sovereignty as outlined in the FNIGC's **First Nations Principles of Ownership, Control, Access and Possession (OCAP®)**



- ✓ OCAP® establishes First Nations control over data collection, protection, use, and sharing
- ✓ The Government of Canada has no ownership of or access to users' data in EMSA
- ✓ **Spaces** on EMSA are managed through permissions
- ✓ EMSA's third-party hosting and firewalls minimize OCAP® risks

AIS Data: Real-Time Vessel Tracking

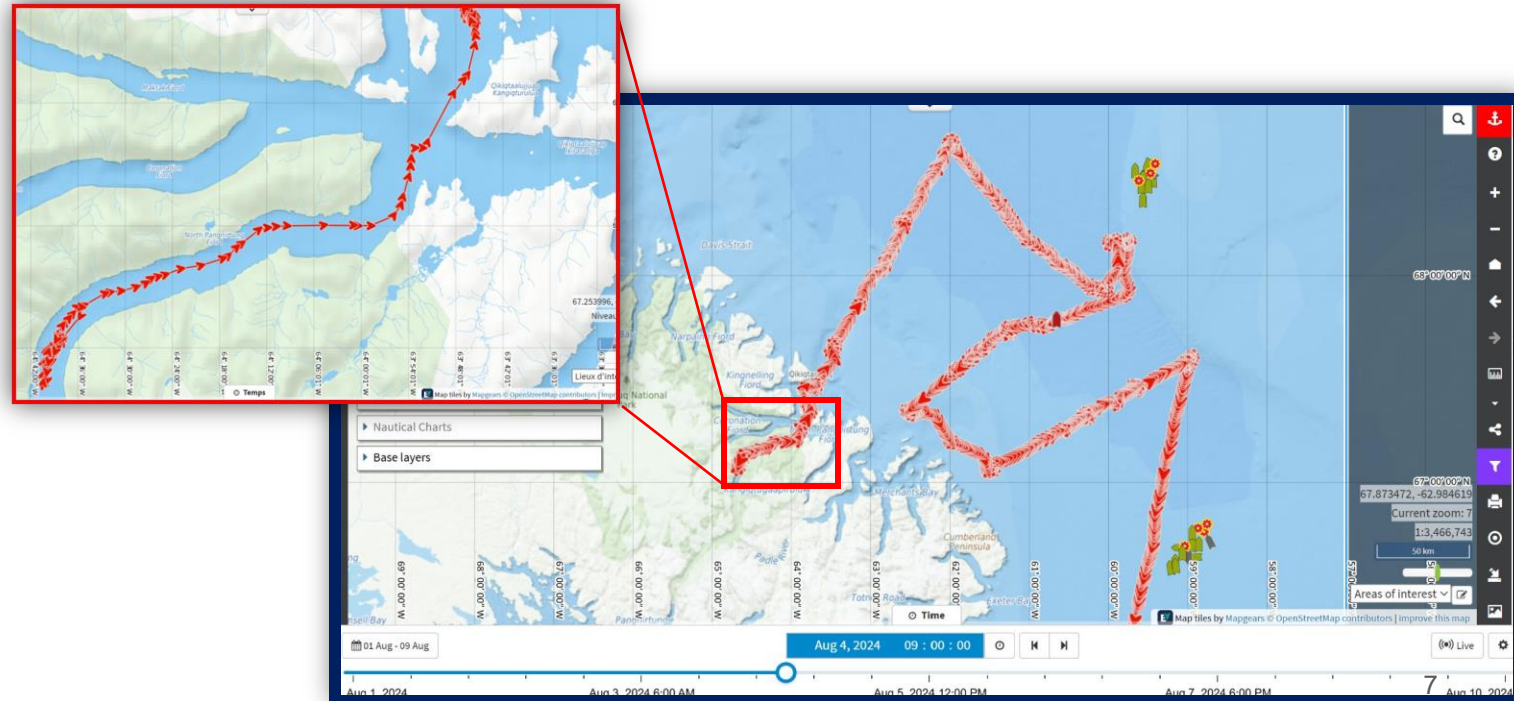
Real time

- Merged terrestrial, satellite and dynamic AIS feeds
- 2-10 minutes delay



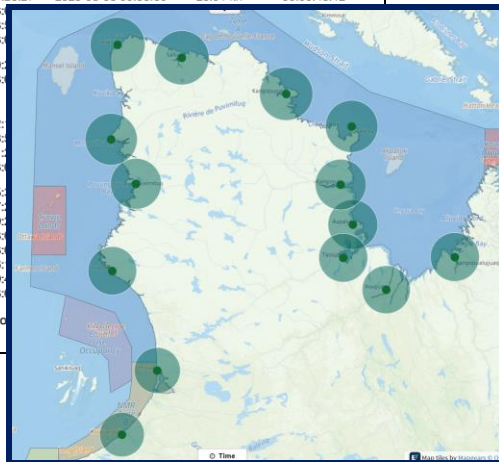
Historical tracks

- Visualization of past ship movements (*breadcrumbs*)
- Historical tracks up to April 2019



Geofence Reports: Monitoring What Matters

Visited Geofences Nunavik Communities Geofence				
Selected Period: 2025-07-31 23:00 to 2025-09-30 22:59 Time zone: UTC-05:00				
Geofence Name Vessel Name	From (Y-M-D H:M:S)	To (Y-M-D H:M:S)	Max Speed (kn)	Duration (D:H:M:S)
Geofence: Akulivik				
AMMAYA (316055843)	2025-08-05 14:55:37	2025-08-19 13:19:40	11.66 kn	13:22:24:03
AMMAYA (316055843)	2025-08-24 00:16:35	2025-08-28 14:58:00	10.69 kn	04:14:41:25
AMMAYA (316055843)	2025-09-03 18:14:20	2025-09-24 13:54:56	11.47 kn	20:19:40:36
AMMAYA (316055843)	2025-09-27 20:16:34	2025-09-30 22:59:00	9.91 kn	03:02:42:26
CRT EXPRESS (316040782)	2025-08-06 04:18:04	2025-08-11 19:32:20	9.52 kn	05:15:14:16
CRT EXPRESS (316040782)	2025-08-20 03:42:17	2025-09-09 16:46:18	10.30 kn	20:13:04:01
CRT EXPRESS (316040782)	2025-09-15 00:16:20	2025-09-30 22:59:00	8.55 kn	15:22:42:40
DOLFIJNGRACHT (245033000)	2025-07-31 23:00:00	2025-09-30 22:59:00	14.97 kn	60:23:59:00
HARFANG POLAIRE (316045327)	2025-07-31 23:00:00	2025-08-01 06:58:52	0.19 kn	00:07:58:52
MARSOUIN POLAIRE (316034736)	2025-07-31 23:00:00	2025-09-30 22:59:00	8.36 kn	60:23:59:00
MIA DESGAGNES (316031772)	2025-08-23 07:09:05	2025-08-25 17:36:31	11.86 kn	02:10:27:26
MIA DESGAGNES (316031772)	2025-08-28 10:19:03	2025-09-16 04:24:34	14.19 kn	18:18:05:31
MIA DESGAGNES (316031772)	2025-09-22 13:44:33	2025-09-22 16:49:33	11.50 kn	00:03:45:00
MITIQ (316025029)	2025-09-02 20:14:12	2025-09-02 22:00:18	14.77 kn	00:01:46:06
MITIQ (316025029)	2025-09-05 22:09:06	2025-09-05 23:38:47	14.19 kn	00:01:29:41
QAVVIK (316042834)	2025-07-31 23:00:00	2025-09-30 22:59:00	6.61 kn	60:23:59:00
SARAH DESGAGNES (316012308)	2025-08-21 04:20:30	2025-09-30 22:59:00	16.52 kn	40:18:38:30
SINAA (244266000)	2025-07-31 23:00:00	2025-09-30 22:59:00	18.66 kn	60:23:59:00
ULLAKUT (316020008)	2025-07-31 23:00:00	2025-08-01 07:08:11	0.19 kn	00:08:08:11
Geofence: Aupaluk				
ARTIQUE POLAIRE (316034648)	2025-07-31 23:00:00	2025-09-30 22:59:00	14.19 kn	60:23:59:00
CRT EXPRESS (316040782)	2025-07-31 23:00:00	2025-09-30 22:59:00	11.86 kn	60:23:59:00
MIA DESGAGNES (316031772)	2025-07-31 23:00:00	2025-09-30 22:59:00	15.16 kn	60:23:59:00
RESCUE 512 (316027266)	2025-08-07 21:22:39	2025-08-07 23:38:28	36.35 kn	00:02:15:49
RESCUE 512 (316027266)	2025-08-08 08:25:27	2025-08-08 09:08:39	23.91 kn	00:00:43:12
RESCUE 512 (316027266)	2025-08-08 13:00:00			
RESCUE 512 (316027266)	2025-09-11 03:00:00			
ROSAIRE A DESGAGNES (316011358)	2025-07-31 23:00:00	2025-09-30 22:59:00		
SAN MARCO VII (316054019)	2025-09-08 20:00:00			
TAMYLIE D (316015877)	2025-07-31 23:00:00			
Geofence: Inukjuak				
AMMAYA (316055843)	2025-08-20 22:00:00			
CRT EXPRESS (316040782)	2025-08-07 18:00:00			
CRT EXPRESS (316040782)	2025-09-06 01:00:00			
HARFANG POLAIRE (316045327)	2025-07-31 23:00:00			
MIA DESGAGNES (316031772)	2025-08-26 05:00:00			
MITIQ (316025029)	2025-09-03 07:00:00			
MITIQ (316025029)	2025-09-05 09:00:00			
QAVVIK (316042834)	2025-07-31 23:00:00			
RESCUE 503 (316027262)	2025-07-31 23:00:00			
RESCUE 503 (316027262)	2025-08-21 16:00:00			
RESCUE 503 (316027262)	2025-09-10 19:00:00			
SARAH DESGAGNES (316012308)	2025-07-31 23:00:00			



- Geofences let you **monitor vessel activity** in areas you define.
 - **Simple options:** track ship entries/exits, speeding, or loitering
 - **Advanced options:** report only when specific vessel types exceed speed limits for a set time.

- Real-time **alerts** by email or text

- **Customizable reports:** many templates available with different details

Report generated on January 13 2026 Time zone: UTC-05:00

Sub-fleet Reports: Tracking Your Own Fleet

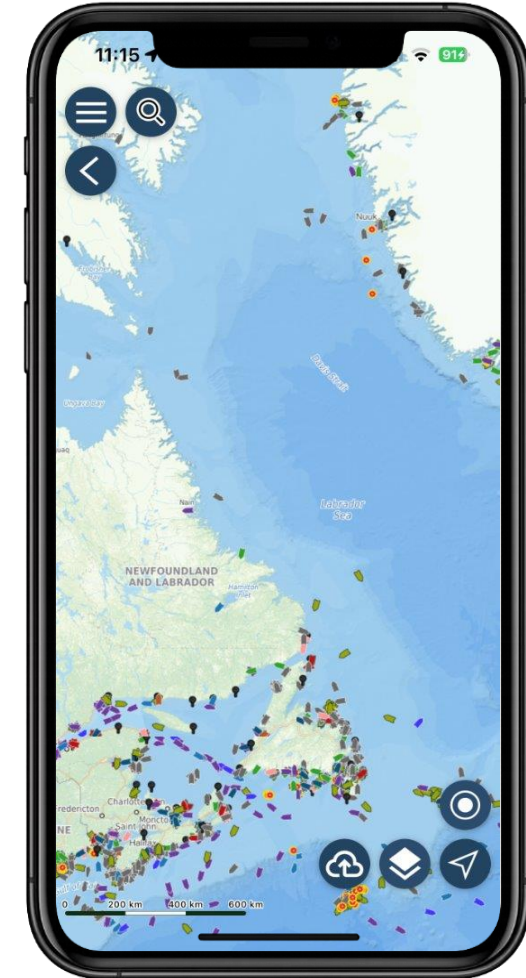
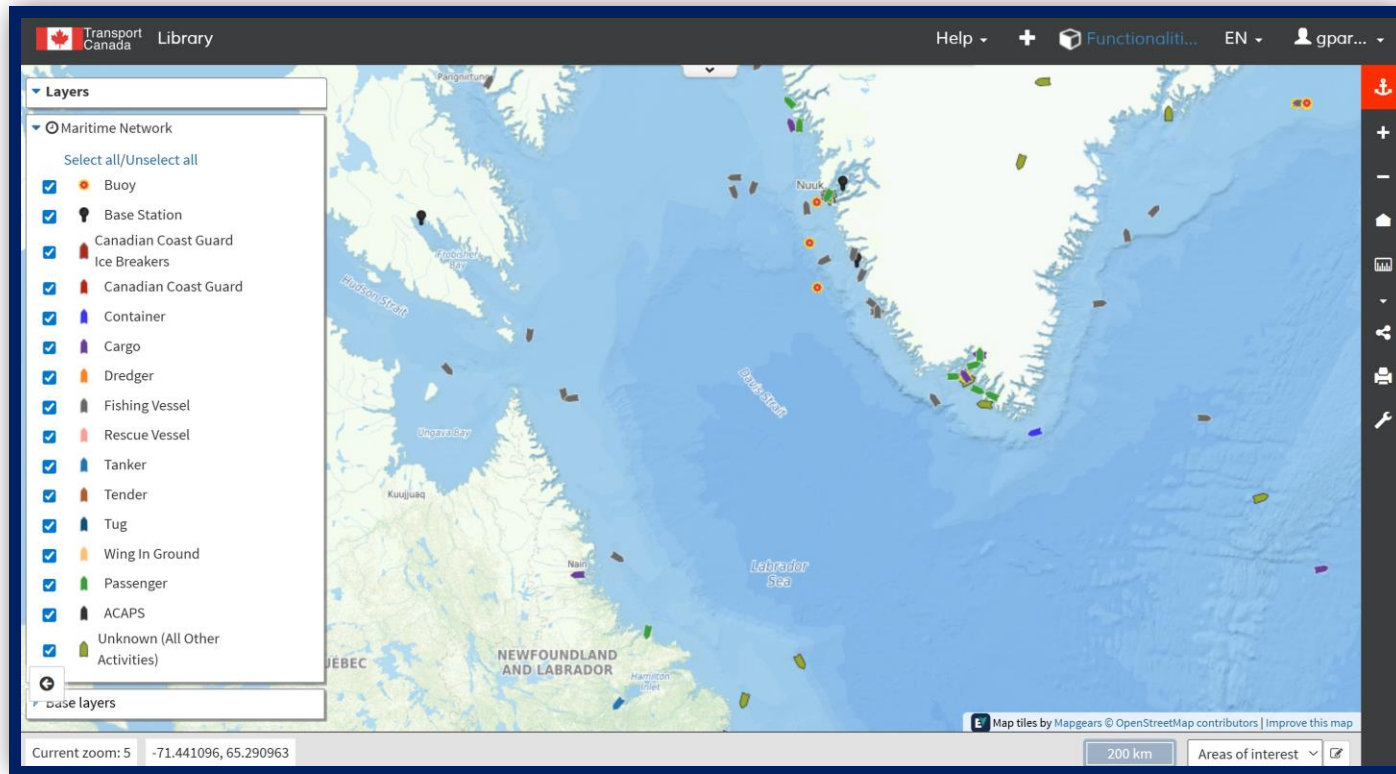
evouala		Operations Summary	
Selected Period: 2025-07-01 07:00 to 2025-12-05 17:00			
Start	End	Duration	Distance
Asset: AMUNDSEN (316050000)			
2025-11-26		23h 57m	0.1 km
2025-11-26 13:32 46°48'32.760"N 71°12'8.280"W	2025-11-27 13:29 46°48'29.880"N 71°12'6.120"W	23h 57m	0.1
2025-09-27		23h 52m	210.3 km
2025-09-27 12:08 76°52'38.280"N 102°22'27.120"W	2025-09-28 12:00 76°25'36.120"N 102°29'53.880"W	23h 52m	210.3
2025-08-15		23h 49m	127.9 km
2025-08-15 14:30 67°14'6.000"N 64°36'47.880"W	2025-08-16 14:19 67°18'42.120"N 64°16'5.880"W	23h 49m	127.9
Asset: DES GROSEILLIERS (316072000)			
2025-09-27			
2025-09-27 12:08 71°22'30.720"N 96°45'49.680"W	2025-09-28 11:59 71°16'15.240"N 96°50'54.240"W		
2025-08-15			
2025-08-15 14:34 74°43'12.000"N 77°18'6.120"W	2025-08-16 14:28 76°7'17.400"N 85°45'47.520"W		
Asset: HENRY LARSEN (316013000)			
2025-12-05			
2025-12-05 05:58 51°17'19.320"N 55°48'16.560"W	Ongoing 51°16'9.480"N 55°41'18.960"W		
2025-12-05 02:04 51°17'24.000"N 55°48'11.520"W	2025-12-05 04:16 51°16'54.480"N 55°46'19.200"W		
2025-12-04			
2025-12-04 23:42 51°16'24.600"N 55°41'58.560"W	2025-12-05 00:20 51°17'9.240"N 55°46'16.680"W		
2025-10-26			
2025-10-26 11:44 47°33'28.440"N 52°42'22.320"W	2025-10-27 11:38 47°33'28.440"N 52°42'21.960"W		
2025-10-02			
2025-10-02 09:15 47°33'28.440"N 52°42'22.320"W	2025-10-03 09:09 47°33'29.880"N 52°42'24.120"W		
2025-09-25			
2025-09-25 10:22 47°33'27.600"N 52°42'24.840"W	2025-09-26 10:19 47°33'29.880"N 52°42'24.120"W		
2025-08-15			
2025-08-15 14:35 47°33'29.880"N 52°42'24.120"W	2025-08-16 14:27 47°33'28.800"N 52°42'22.320"W		
Asset: JEAN GOODWILL (316003809)			
2025-11-03			
2025-11-03 08:50 45°33'24.120"N 61°14'35.880"W	2025-11-04 06:42 44°51'21.600"N 62°29'57.840"W		
2025-09-27			
Report generated on December 05 2025 08:15:11			
Time zone: UTC-05:00			



- Sub-fleets let you monitor a **customized list of vessels** (e.g., local fishing boats, whale-watching vessels, etc.).
- Generate reports from existing templates to see **fleet activity details**.
- Example: Locations of Canadian Coast Guard vessels – shows all ships in the sub-fleet at a specified time.

Two Ways to Access EMSA: Web and Mobile

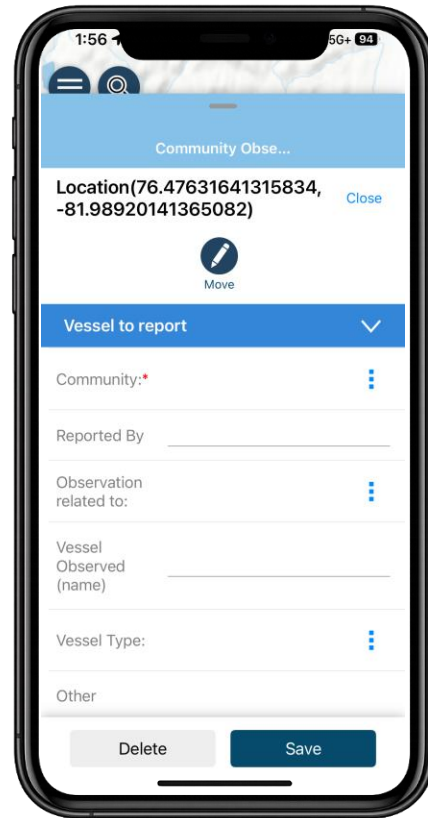
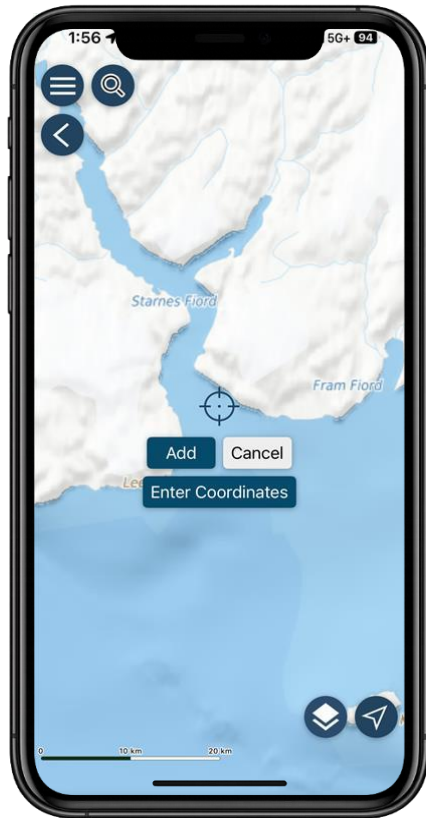
Web Version



Mobile Application



EMSA Mobile Application



- Work offline
- Build customized forms for data collection
- Examples:
 - Reporting vessels or suspicious activity
 - Environmental monitoring (ice thickness, snow depth, coastal erosion, invasive species)
 - Harvesting
 - Locations of safety cabins and emergency equipment

Contact us

Transport Canada EMSA Team

TC.MaritimeAwareness-ConnaissanceMaritime.TC@tc.gc.ca

Technical Support Team

support@emsa-casm.ca

Request an account!



ANNEX 1: EMSA & the Marine Planning Process

Step	Examples
1. Bring Together Partners	<ul style="list-style-type: none">• Provides a shared, neutral mapping environment where partners can view information together.• Supports collaborative discussions by visualizing marine uses, vessel activity, and community-held data in one place.• Enables controlled data sharing through permissions, respecting data sovereignty and community governance.
2. Establish Vision and Goals	<ul style="list-style-type: none">• Allows communities to visualize what matters spatially when defining priorities, values, and objectives.
3. Collect Data & Knowledge	<ul style="list-style-type: none">• Share and document local knowledge (e.g., ice conditions, hazards, environmental observations, harvesting areas) to support planning and safety.• Collect local data to understand where, when, and how marine areas are used.• Map important environmental, cultural, and community-identified features alongside external datasets.
4. Analyze Conditions & Uses	<ul style="list-style-type: none">• Overlay multiple datasets, including vessel activity, protected areas, wildlife habitat, and Inuit land-use areas, to explore spatial relationships and potential conflicts.• Support visual and exploratory analysis to inform discussions and scenario development.
5. Develop Marine Spatial Plan	<ul style="list-style-type: none">• Helps translate planning decisions into spatially explicit areas, such as zones, corridors, or areas of special consideration.• Supports testing and visualizing proposed measures (e.g., routing areas, seasonal considerations).• Provides a platform to communicate plan elements visually to partners and community members.
6. Monitor & Evaluate	<ul style="list-style-type: none">• Monitor vessel activity and shipping routes in near real time, including seasonal changes related to ice and open-water conditions.• Track activity within defined areas to support plan monitoring and adaptive management.• Support evaluation of whether planning measures are being respected or require adjustment over time