International Ice Charting Working Group

http://nsidc.org/noaa/iicwg/

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THE ARCTIC MARINE SHIPPING BEST PRACTICES INFORMATION FORUM

4th Forum Meeting 27-30 November 2020

Outline

- What is the IICWG?
- IICWG support for Polar Code implementation
- New initiatives
- Polar View

International Ice Charting Working Group (IICWG)

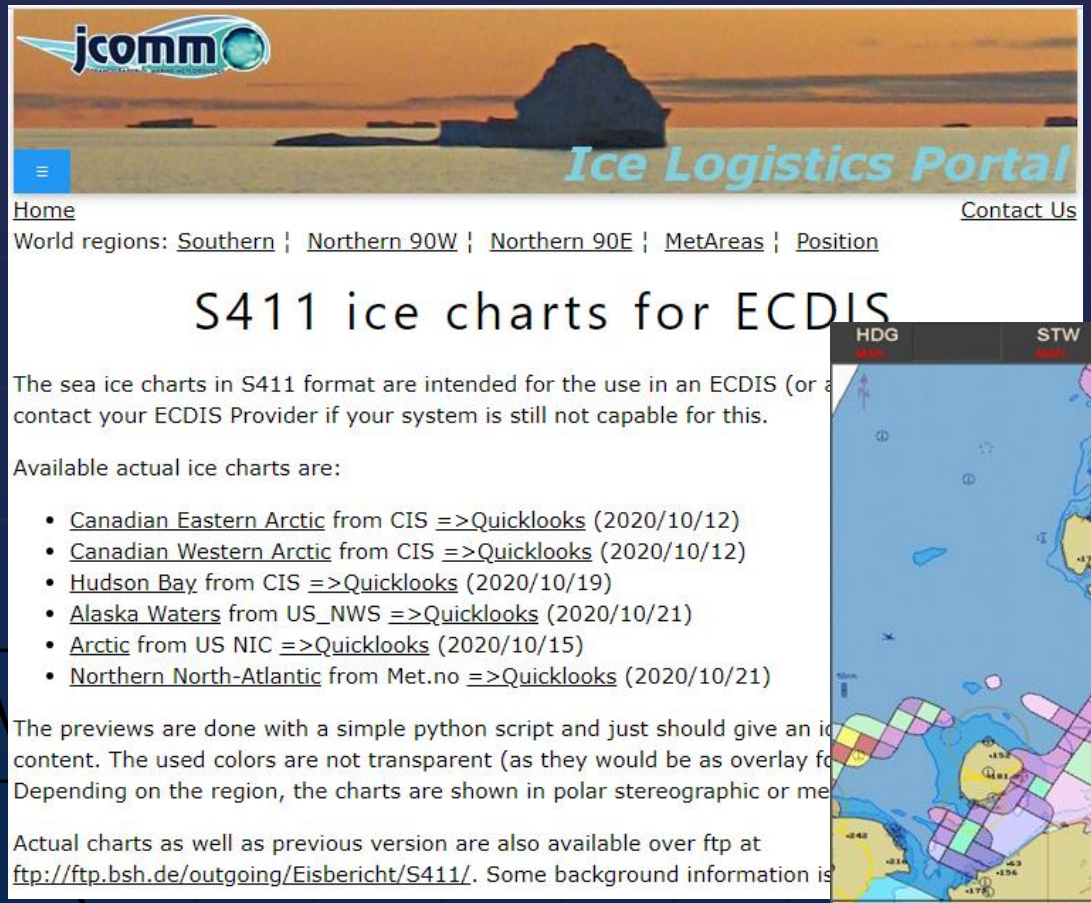
- Ad-hoc self-funded group, founded 1999
- Charter signed by 14 national ice services:
  - Argentina, Canada, Chile, Denmark (Greenland), Finland, Germany, Iceland, Norway, Poland, Russia, Sweden, United States, British Antarctic Survey, and the International Ice Patrol
  - Active participation by Australia and South Africa
- Coordinates provision of sea ice and iceberg information by the national ice services
- Promotes standardization of ice information globally
- Forum to exchange information, scientific / technical advances, best practices
- Advisory body to WMO / IOC expert teams

Polar Code Support: *Ice Logistics Portal*

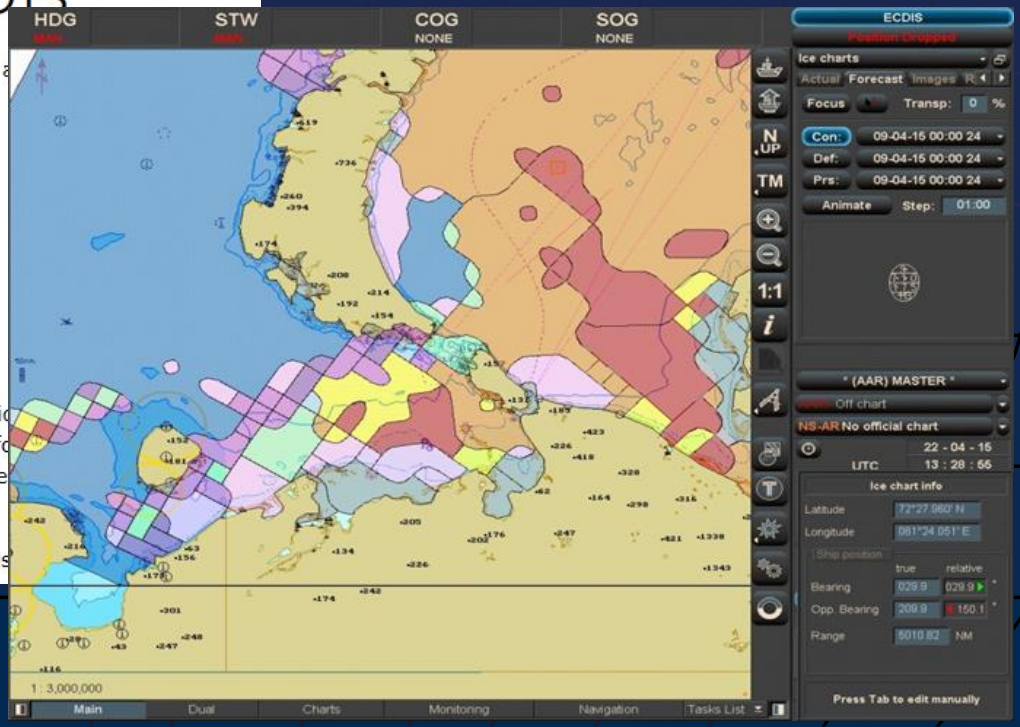
(http://www.bsis-ice.de/ IcePortal/)

- Convenient single point of access to current ice charts produced by all the national ice services
- Linked on ASBPIF Portal from Polar Code Chapter 9 – Safety of Navigation

Polar Code Support: *Enhanced Navigation*



- Ice objects catalogue
- Ice chart encoding
- Portrayal



Polar Code Support:
POLARIS Risk Assessment

- Information needed to calculate the Risk Index Outcome comes from ice charts
  - ice concentration and stage of development

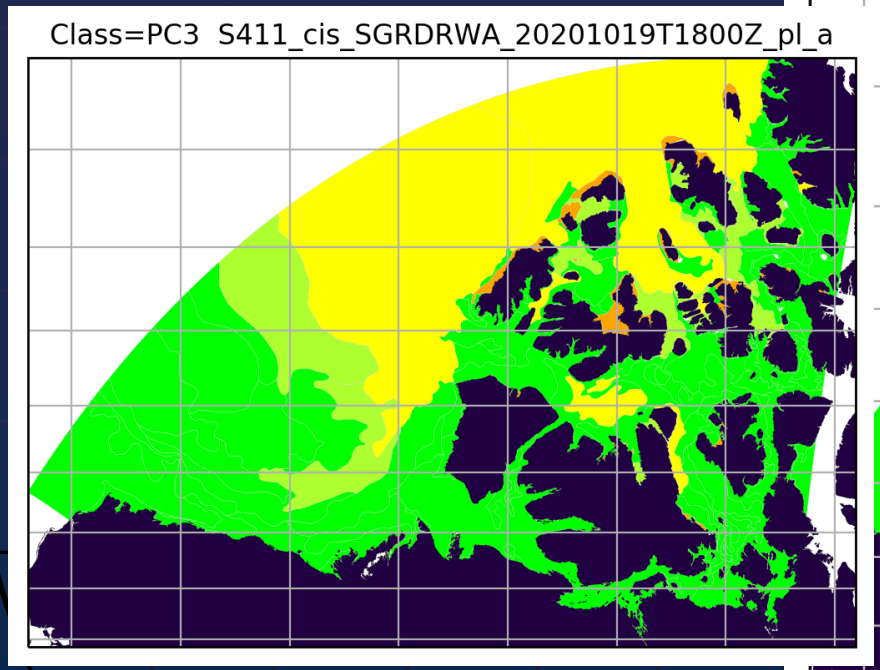
Increasing ice thickness (severity)

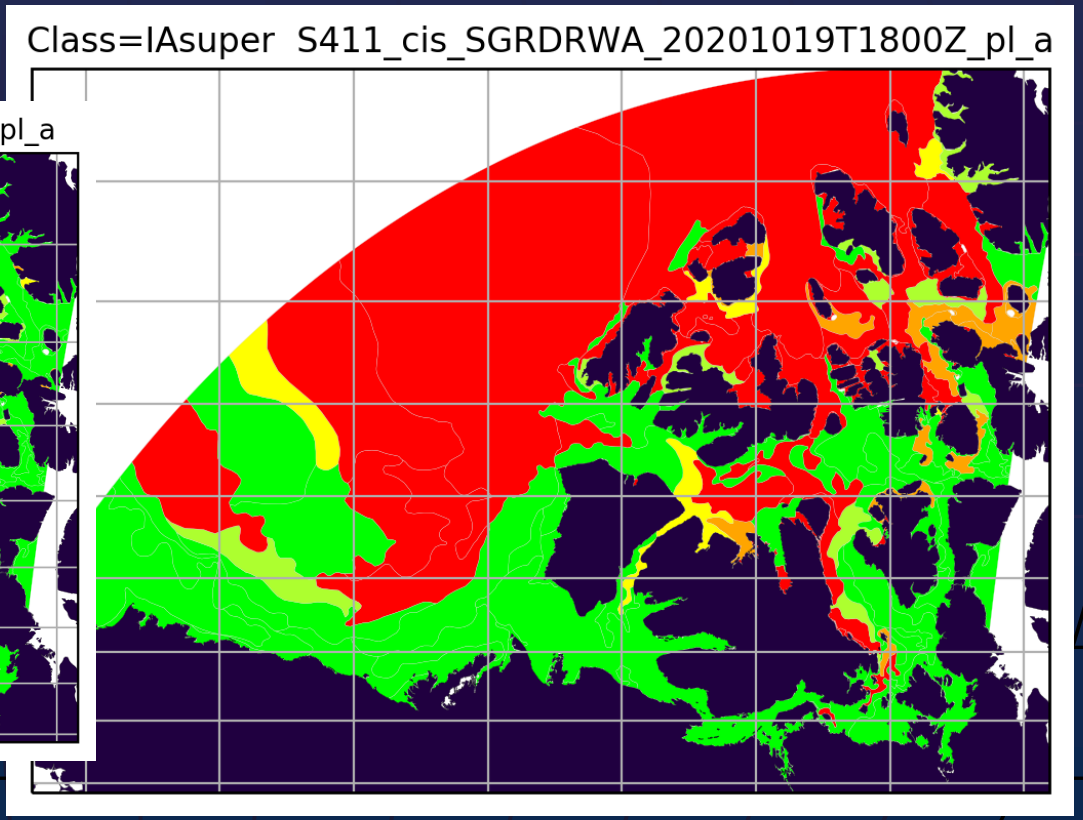
Increasing ice class

Increased Risk

WINTER RISK VALUES (RVs)												
POLAR SHIP CATEGORY	ICE CLASS	ICE FREE --	NEW ICE 0-10 cm	GREY ICE 10-15 cm	GREY WHITE ICE 15-30 cm	THIN FIRST YEAR 1ST STAGE 30-50 cm	THIN FIRST YEAR 2ND STAGE 50-70 cm	MEDIUM FIRST YEAR 1ST STAGE 70-95 cm	MEDIUM FIRST YEAR 2ND STAGE 95-120 cm	THICK FIRST YEAR 120-200 cm	SECOND YEAR 200-250 cm	LIGHT MULTI YEAR 250-300 cm	HEAVY MULTI YEAR 300+ cm
A	PC 1	3	3	3	3	2	2	2	2	2	2	1	1
	PC 2	3	3	3	3	2	2	2	2	2	1	1	0
	PC 3	3	3	3	3	2	2	2	2	2	1	0	-1
	PC 4	3	3	3	3	2	2	2	2	1	0	-1	-2
	PC 5	3	3	3	3	2	2	2	1	0	-1	-2	-2
B	PC 6	3	2	2	2	2	1	1	0	-1	-2	-3	-3
	PC 7	3	2	2	2	1	1	0	-1	-2	-3	-3	-3
C	IA Super	3	2	2	2	2	1	0	-1	-2	-3	-4	-4
	1A	3	2	2	2	1	0	-1	-2	-3	-4	-4	-4
	1B	3	2	2	1	0	-1	-2	-3	-3	-4	-5	-5
	1C	3	2	1	0	-1	-2	-2	-3	-4	-4	-5	-6
	NO ICE CLASS	3	1	0	-1	-2	-2	-3	-3	-4	-5	-6	-6

Polar Code Support:
POLARIS Risk Assessment





Light green: easy ice conditions (RIO>10) Green: light ice conditions (10>RIO>5)
Yellow: normal ice operation (5>RIO>0) Orange: elevated risk (0>RIO>-10)
Red: special consideration (normally No-Go) (RIO<-10)

2020-21 IICWG Workplan
selected projects

- Task Team 1 - Multi-Spectral SAR
- Task Team 3 - e-Navigation
- Task Team 8 - Maritime Training Centre Engagement
- Task Team 12 – Ice Chart Uncertainty 2nd Edition
- Task Team 13 – Iceberg Model Case Studies
- Task Team 14 – Iceberg Hazard Product
- Task Team 15 – Sea Ice Hazard Product

Engaging Mariner Training Centres

- Surveyed ice navigators and maritime training centres in 2019-2020
  - What ice information do mariners really need?
  - How can ice services help training centers deliver the best Polar Code training?

MARINER NEEDS

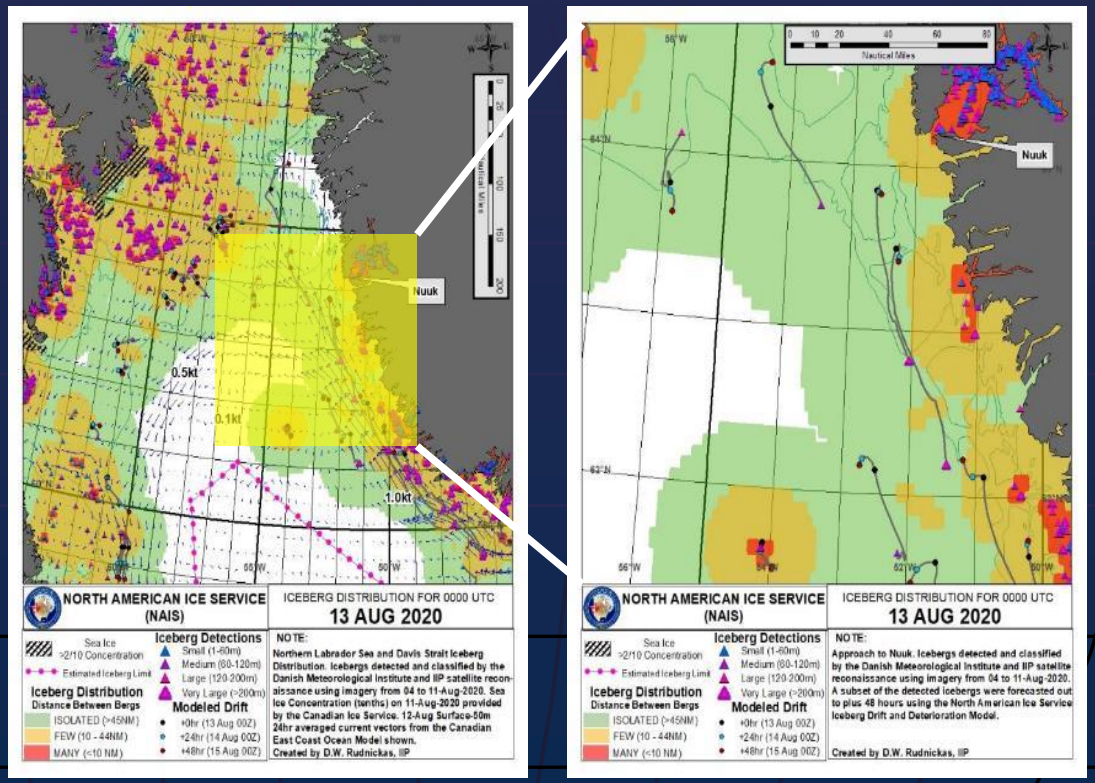
1. **Ice Charts in Shape files**
2. S**implified ice products**
3. I**ce forecast products**
4. I**ce statistics**
5. R**isk-based products**

TRAINING NEEDS

1. **Handbooks**
   1. ice observation technology
   2. satellite image analysis
   3. **Handbook** describing ice analysis
2. **Descriptions of ice products & services**
3. **Formal documents updated frequently**

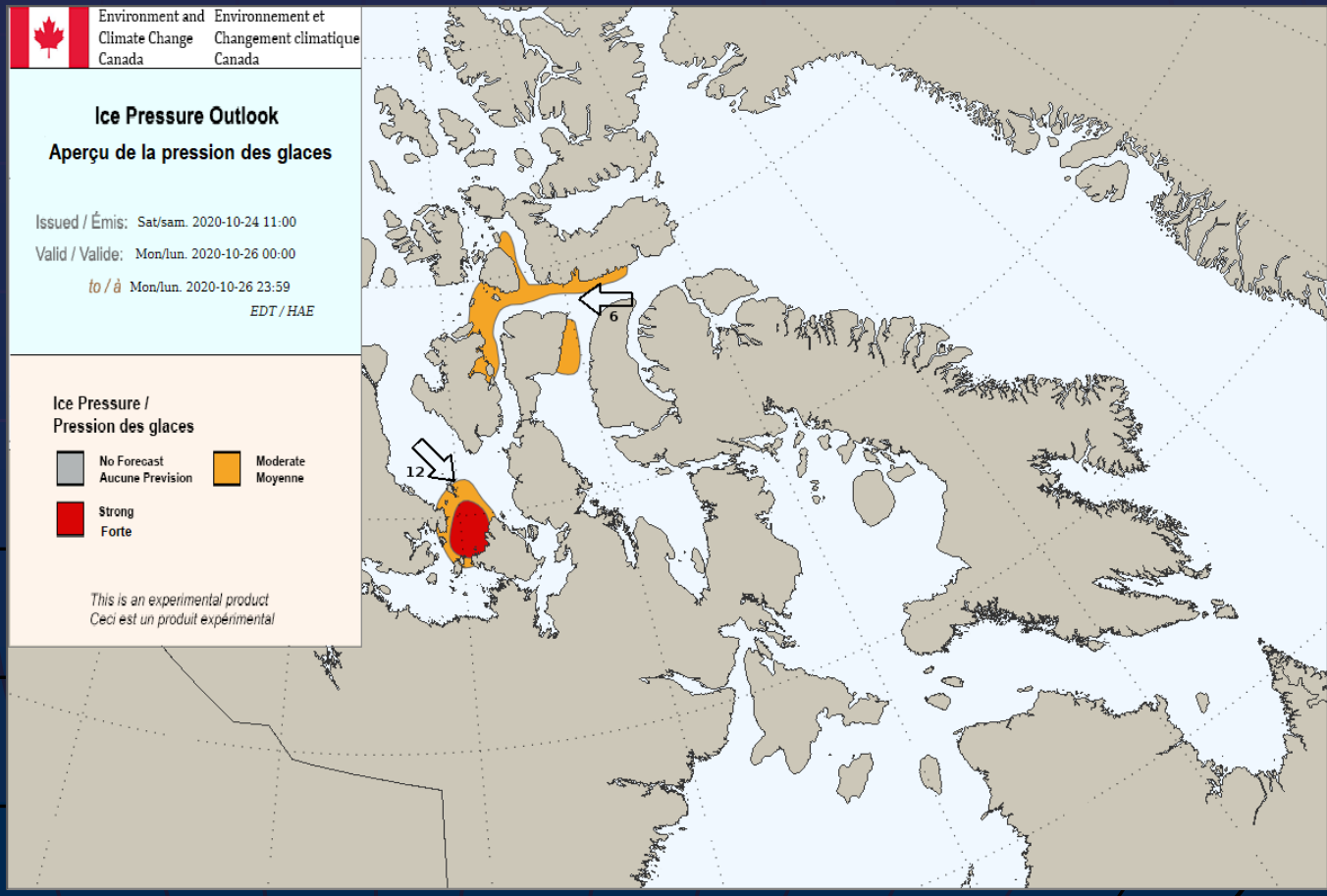
Iceberg Hazard Product

- Develop prototype iceberg density map into an operational product
- Make available in real-time to a select group of users through a Polar View test site
- Get feedback in real-time to exercise the whole value-chain
- Make adjustments as necessary



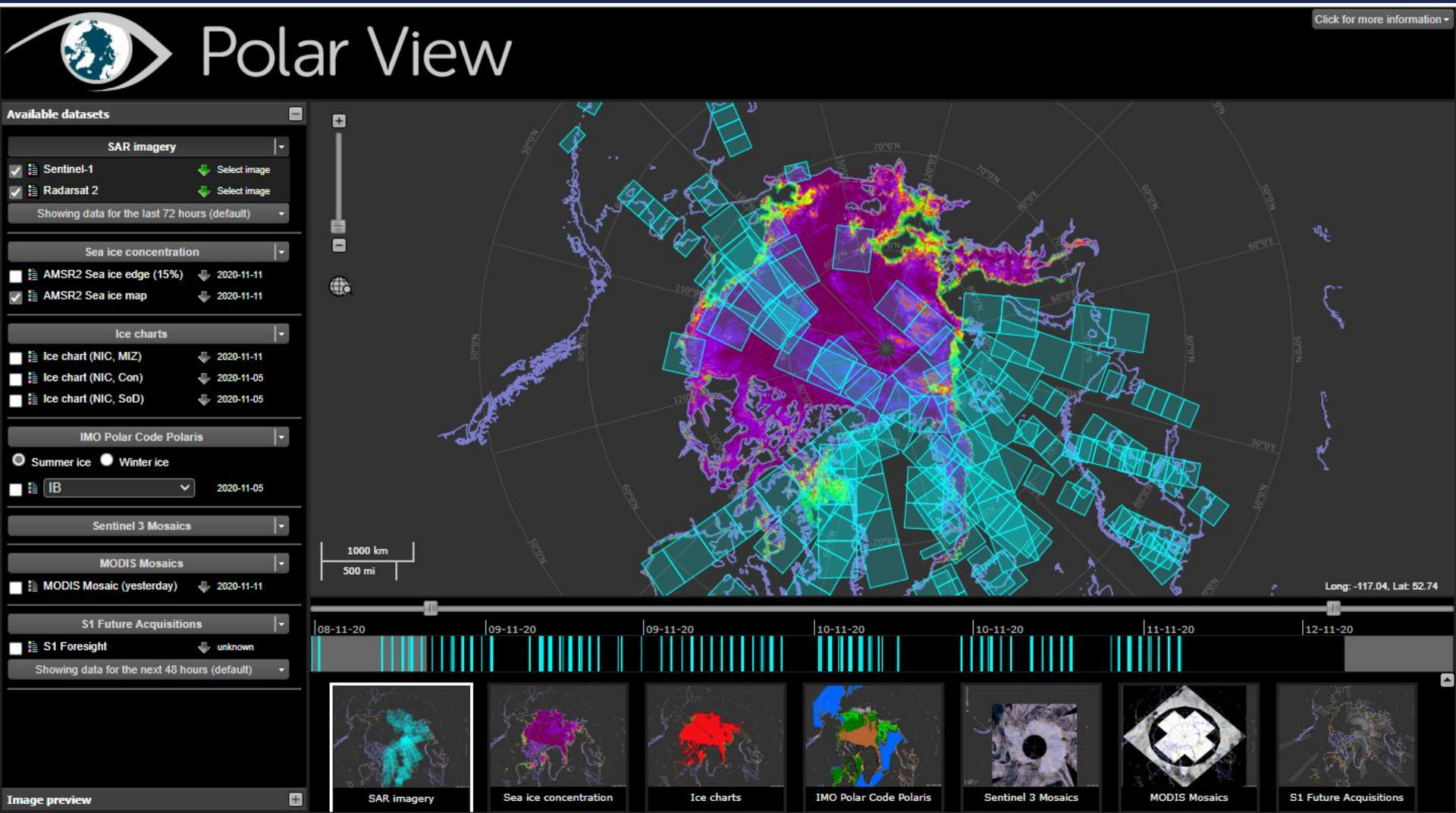
Sea Ice Hazard Product

- Develop a sea ice hazard prototype product in consultation with mariners
- Incorporate sea ice model output to forecast the development of the hazard
- Likely candidate is ice pressure
- Validation and verification by real users



Polar View

https://www.polarview.aq/arctic



Thank you

On behalf of the world's ice services

Norway Finland Canada Russia Germany Australia
South Africa Sweden IIP Argentina BAS China