

Perspectives on the Future Mission of the International Ice Patrol



Photo by Dennis Flynn (2008)

CDR Scott Rogerson
9 June 2009



Homeland
Security



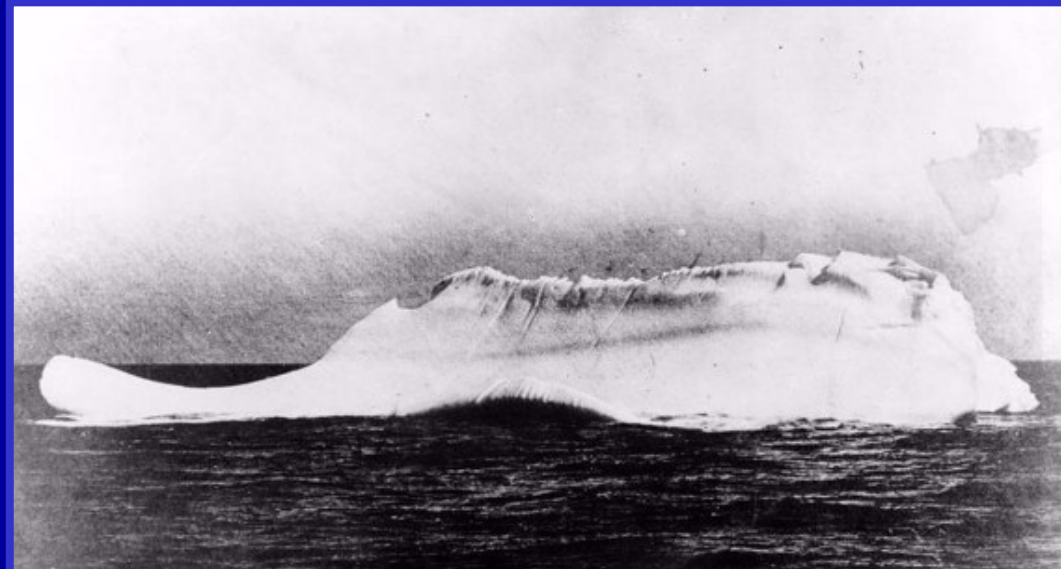


Outline

- I. History of IIP Mission
- II. IIP Mission Today
- III. Future Possibilities:
 - Customer Needs?
 - OPAREA Expansion?
 - Mission Execution?



History of IIP Mission



Do Modern Ships Hit Icebergs?



Yes!

(Even with today's
technology)

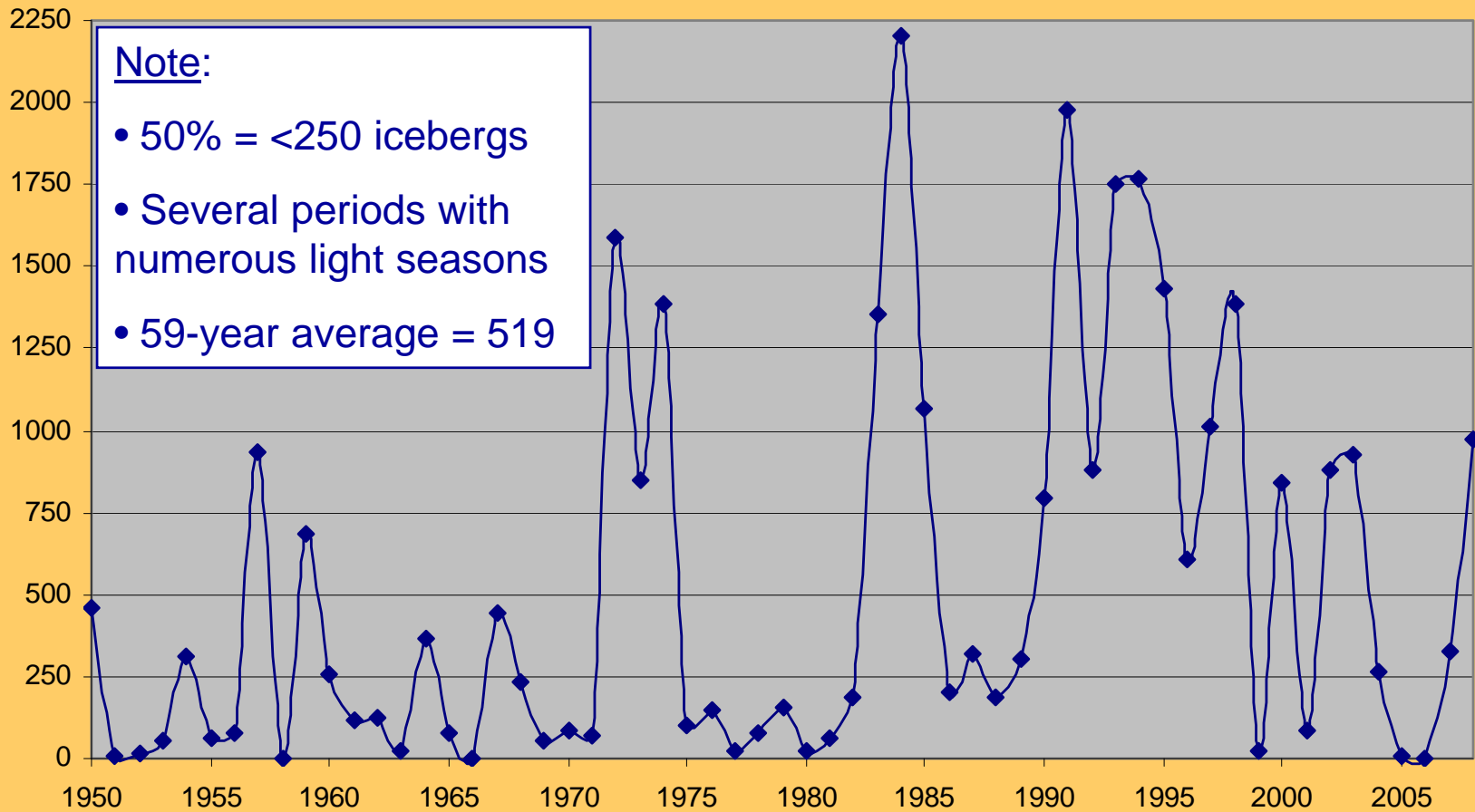
6.17.2004

Challenge: Harsh Marine Environment

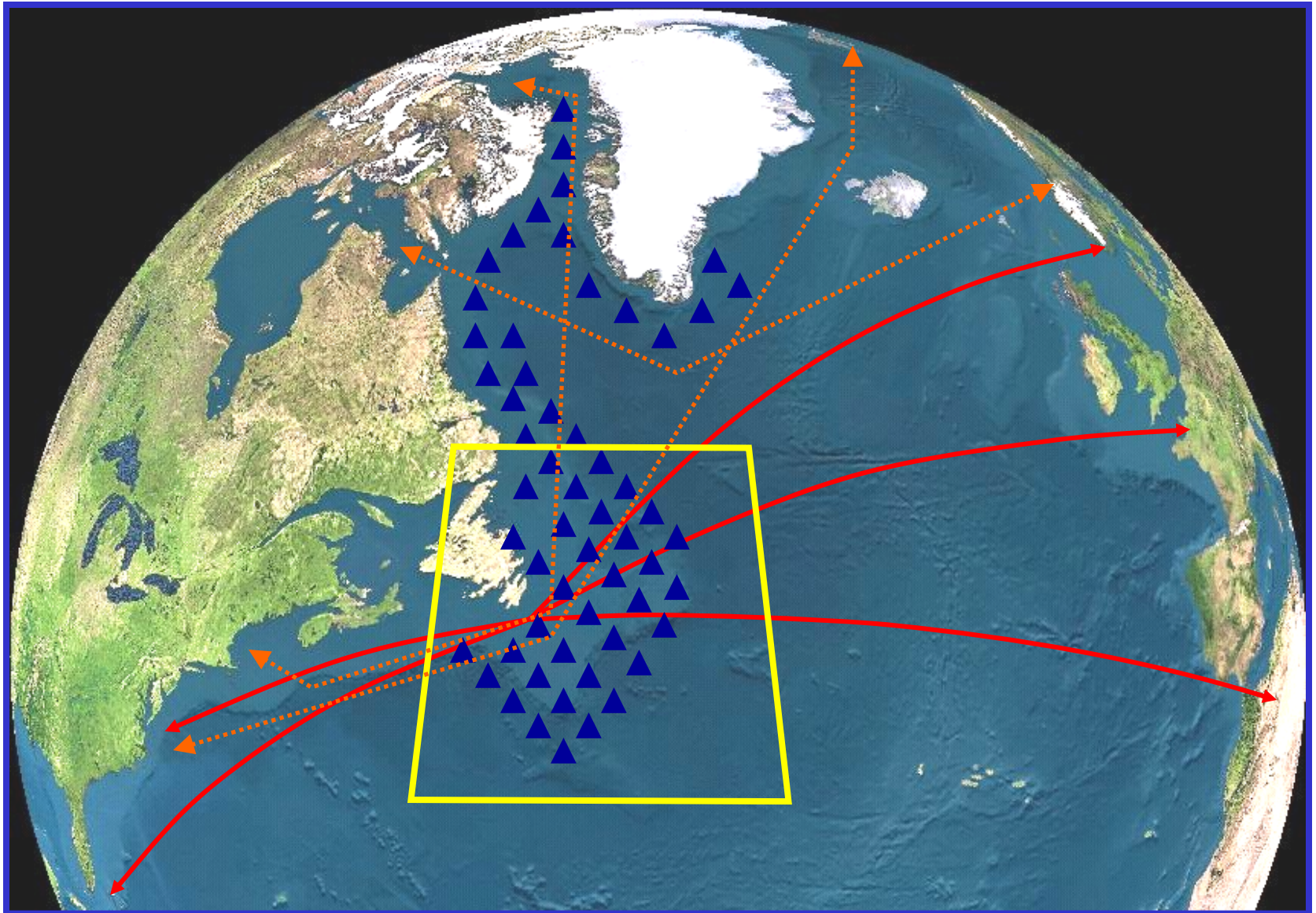


How Big is the Threat Each Year?

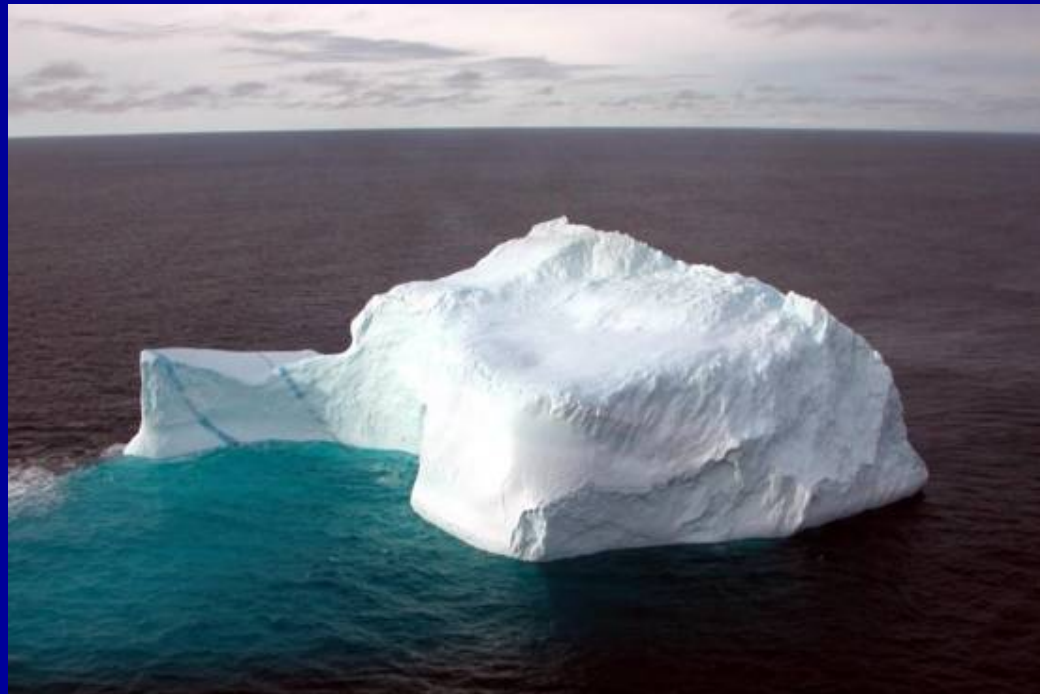
Icebergs South of 48N (1950-2008)



IIP Mission: Monitor iceberg danger near Grand Banks of Newfoundland and provide limit of all known ice to maritime community



How does IIP monitor the
iceberg danger near the
Grand Banks of
Newfoundland today?



Partnerships

- Ship Reports
- Canadian Coast Guard
- Canadian Ice Service
- Oil Rigs



Aerial Reconnaissance



Sensor Systems



VISUAL

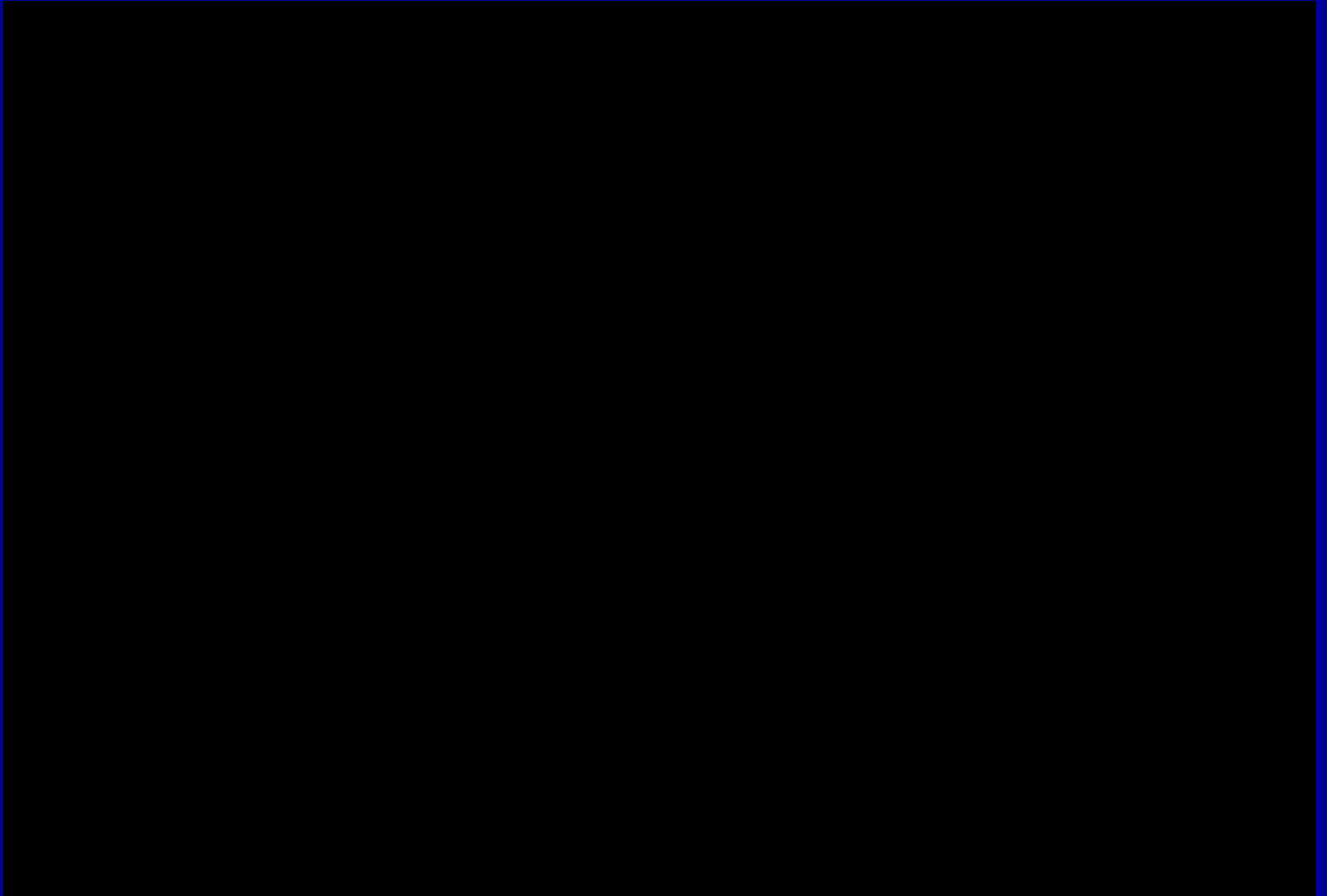
Ice Observers
(back of C130)



RADAR

ELTA-2022 (& COE)
APN-241

Low Altitude Fly-By of an Iceberg



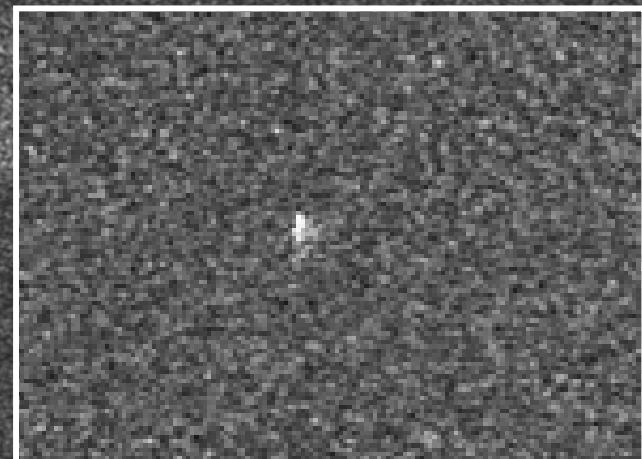
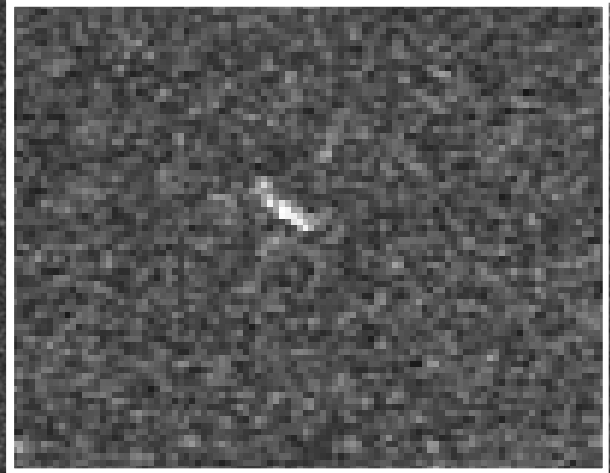
Space-Borne Reconnaissance

- Work with C-CORE since late 1990s
 - ENVISAT (thru 2008)
 - RADARSAT-2 (2009)
- Ongoing efforts with NIC & ICC
- Challenges:

Access	Classification	Cost	Coverage
Discrimination	Environment	Resolution	
- Future Plans:
 - Use of R2/RCM: preliminary indications good
 - Other available resources???
 - Yet TBD: Best method of accessing/processing imagery
 - Eventually: Monitor iceberg danger solely by satellite?

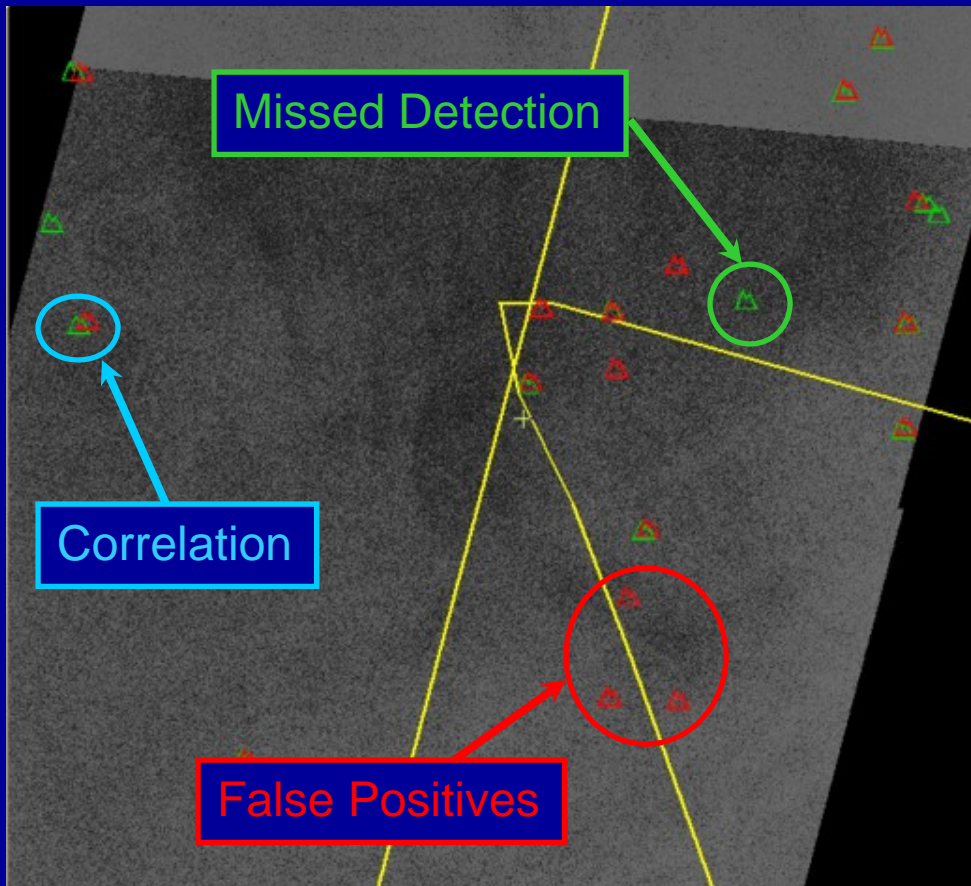
ENVISAT 30m Resolution

Courtesy of C-CORE



HV

Iceberg Correlation Study (2007)



- **134 Correlated icebergs**
- **Data collected in regions with low ship density**

How does IIP provide the limit of all known ice to the maritime community today?



Iceberg Information



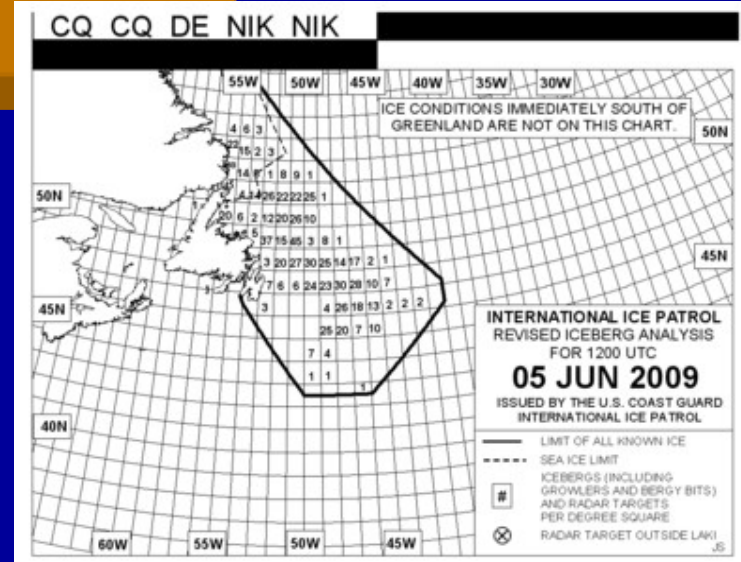
**IIP
C130 Recon**

Operations Center

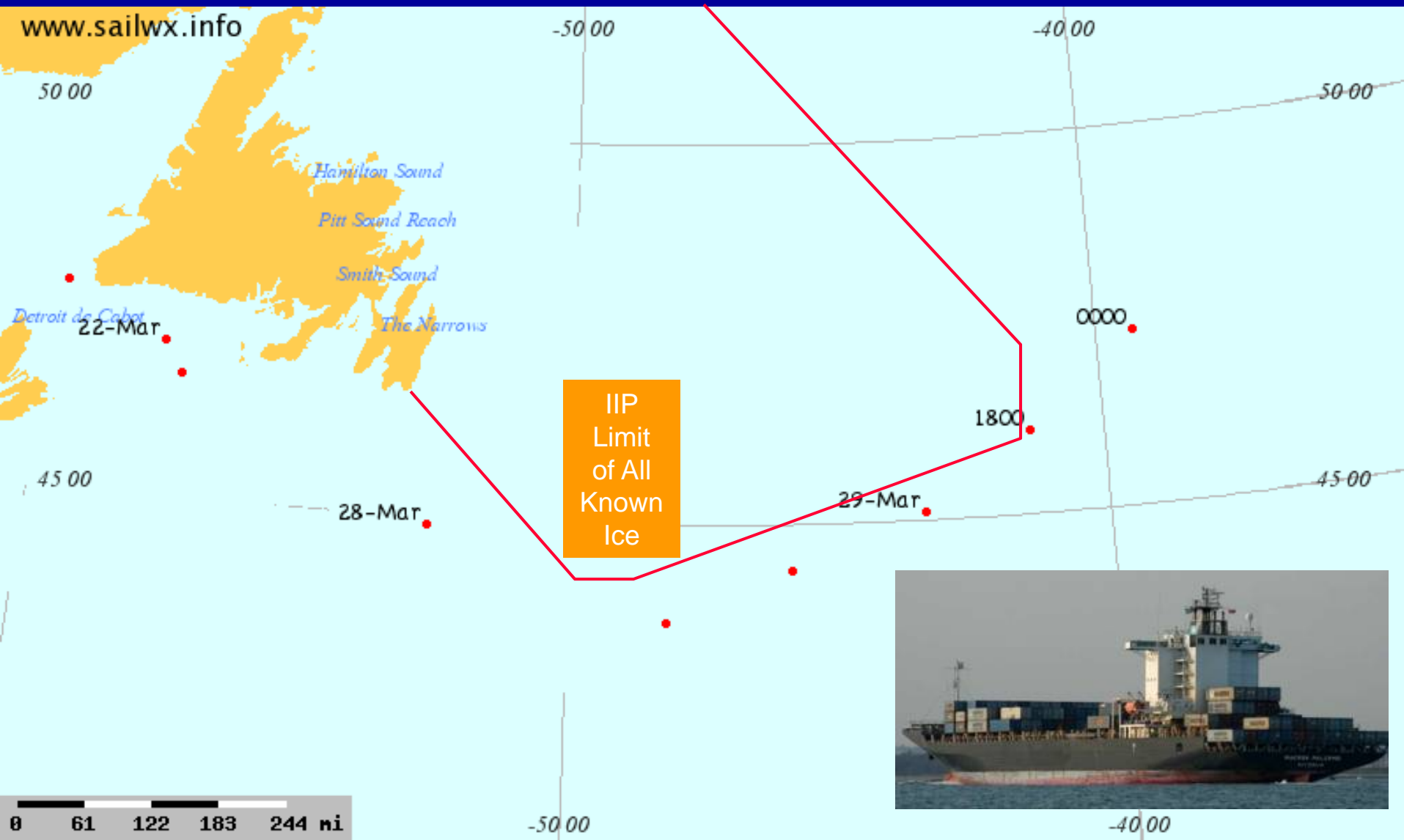
- ④ Process Berg Reports
- ④ Process & QC Environmental Data
- ④ Run Berg Drift & Melt Models
- ④ Set LAKI & Create Product
- ④ Provide product to Mariners

**Canadian
Ice Service
Recon**

**Ship & Other
Berg Reports**

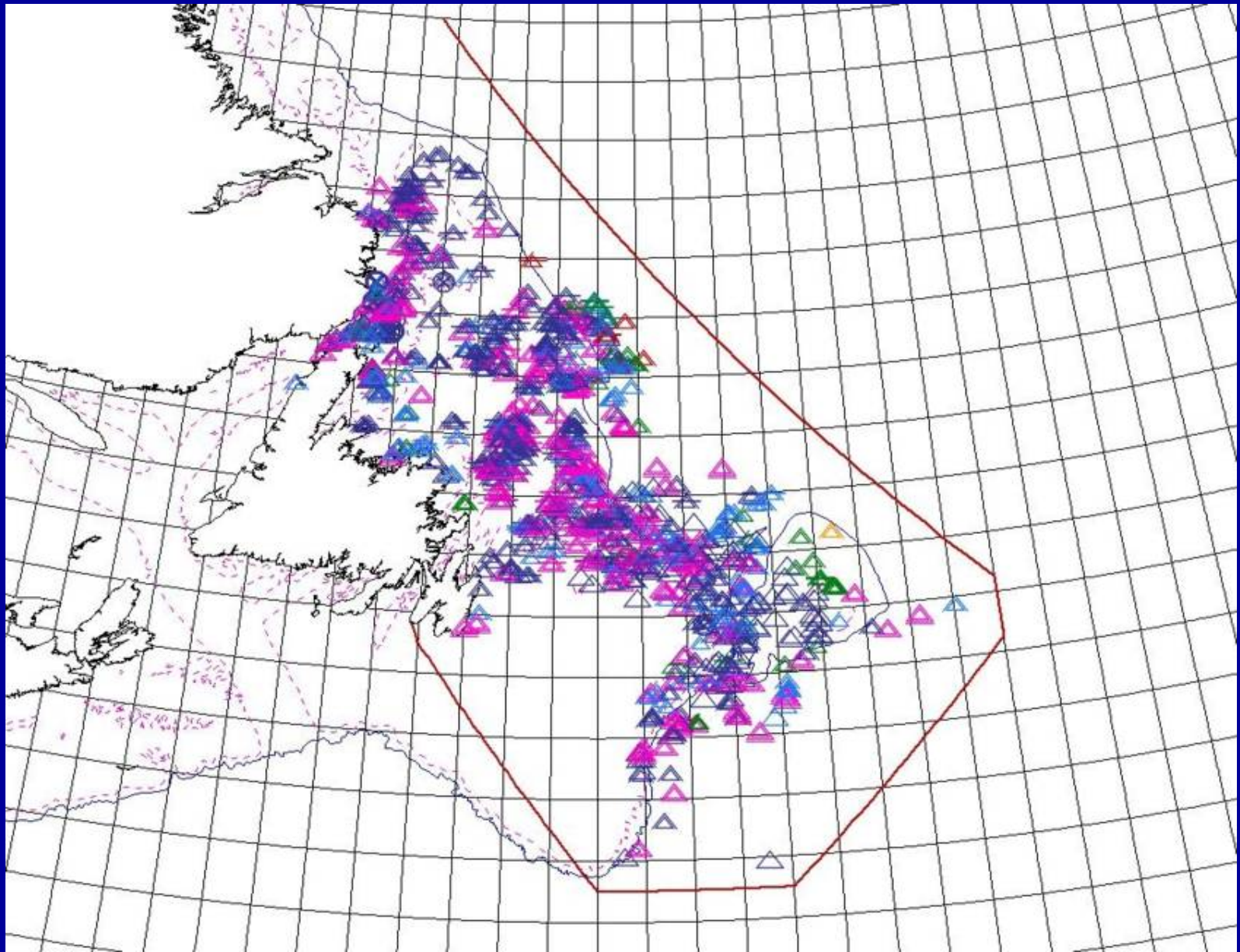


Customer Behavior



MAERSK PALERMO (PDHW)

IIP Products thru the Years



Customer Needs?



Transatlantic Mariners: LAKI with Iceberg Density remains sufficient

Subpolar Mariners: Will LAKI with Iceberg Density suffice?

Polar Mariners: Will individual iceberg positions be desired/feasible?

OPAREA Expansion?

Immediate Future (2009-2012?)

Status Quo: Grand Banks LAKI

Near Future (2012-2015?)

Mid-Latitude OPAREA Expansion: NAVAREA IV LAKI

Eventual Future (2015-2030?)

Polar OPAREA Expansion: Merge with National Ice Center?

Caveats: Customer Needs & Available Funding/Resources

Recent IIP-NIC Cooperation



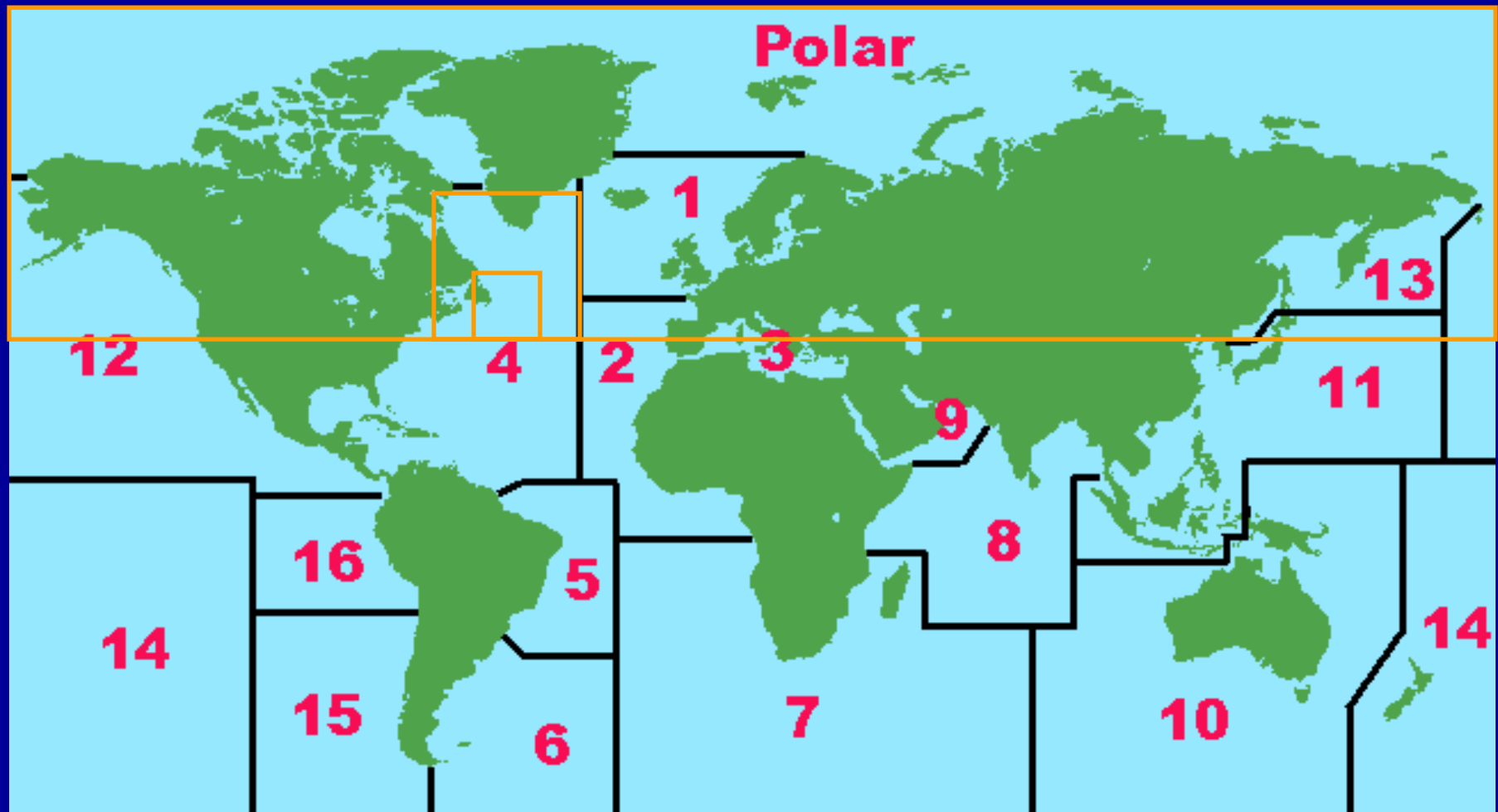
CDR Kruse as Aerial Ice Observer

CDR Kruse & Dr. Clemente-Colón
deployed with IIP in April 2009

“I charged my bar bill to
CDR Rogerson’s room!”



OPAREA Expansion?



Mission Execution?

Immediate Future (2009-2012?)

Status Quo: USCG HC-130 Aircraft

Near Future (2012-2015?)

USCG HC-144 Aircraft & R2/RCM Satellite Imagery

Eventual Future (2015-2030?)

Commercial Reconnaissance / Satellite Imagery / UAVs

Caveats: Customer Needs & Available Funding/Resources

Summary

Icebergs will remain a threat to mariners on the Grand Banks & become a threat further North

Interannual variability is expected

IIP mission expansion will depend largely on customer needs

IIP mission execution will depend on technology & available funding/resources

Partnerships (especially NAIS) will remain critically important

Questions / Discussion



www.uscg-iip.org

www.nais-sgan.org