

Norwegian S-AIS



KYSTVERKET
NORWEGIAN COASTAL ADMINISTRATION

Further Development, Maintenance and use of the System

Jon Leon Ervik, NCA

The Norwegian Coastal Administration

- The Norwegian Coastal Administration is a government agency under the Royal Ministry of Fisheries and Coastal Affairs.
- The NCA is the national authority on coastal management and infrastructure, maritime traffic safety and monitoring, and preparedness against acute pollution.



Director General

Kirsti Lovise Slotsvik



Regional organisation

- The five coastal regions have individual operative tasks managed on behalf of the NCA Head Office:

| NCA Head Office | | | | | |
|---|---|--|----------------------------|---|---|
| Information systems Property Mngt Transportation planning | Pilotage VTS Radio navigation Reporting services | Fairways Lighthouses and beacons Central storage | Planning and development | Information technology Administration Personnel Accounting | Development and maintenance of aids to navigation |
| NCA Region Southeastern Norway | NCA Region Western Norway | NCA Region Central Norway | NCA Region Nordland | NCA Region Troms og Finnmark | NCA Shipping Company |



NCA goals

- Safe coastal voyage
- Clean environment
- Modal shift from land to sea transport
- Sustainable coastal communities
- Quality-based services
- Always on duty



Clean environment

- Department for emergency response against acute pollution
- Cooperation with other national partners
- Training exercises
- Modern equipment, geographical diversity - rapid response time and damage control
- Environmental perspective in all activities



Preventive focus is better than an accident



KYSTVERKET

Source: The North Sea Foundation

www.kystverket.no

Maritime services

- Piloting service
- Vessel Traffic Monitoring Service (VTS)
- Radio navigation
- Reporting service for navigators



Automatic identification system (AIS)

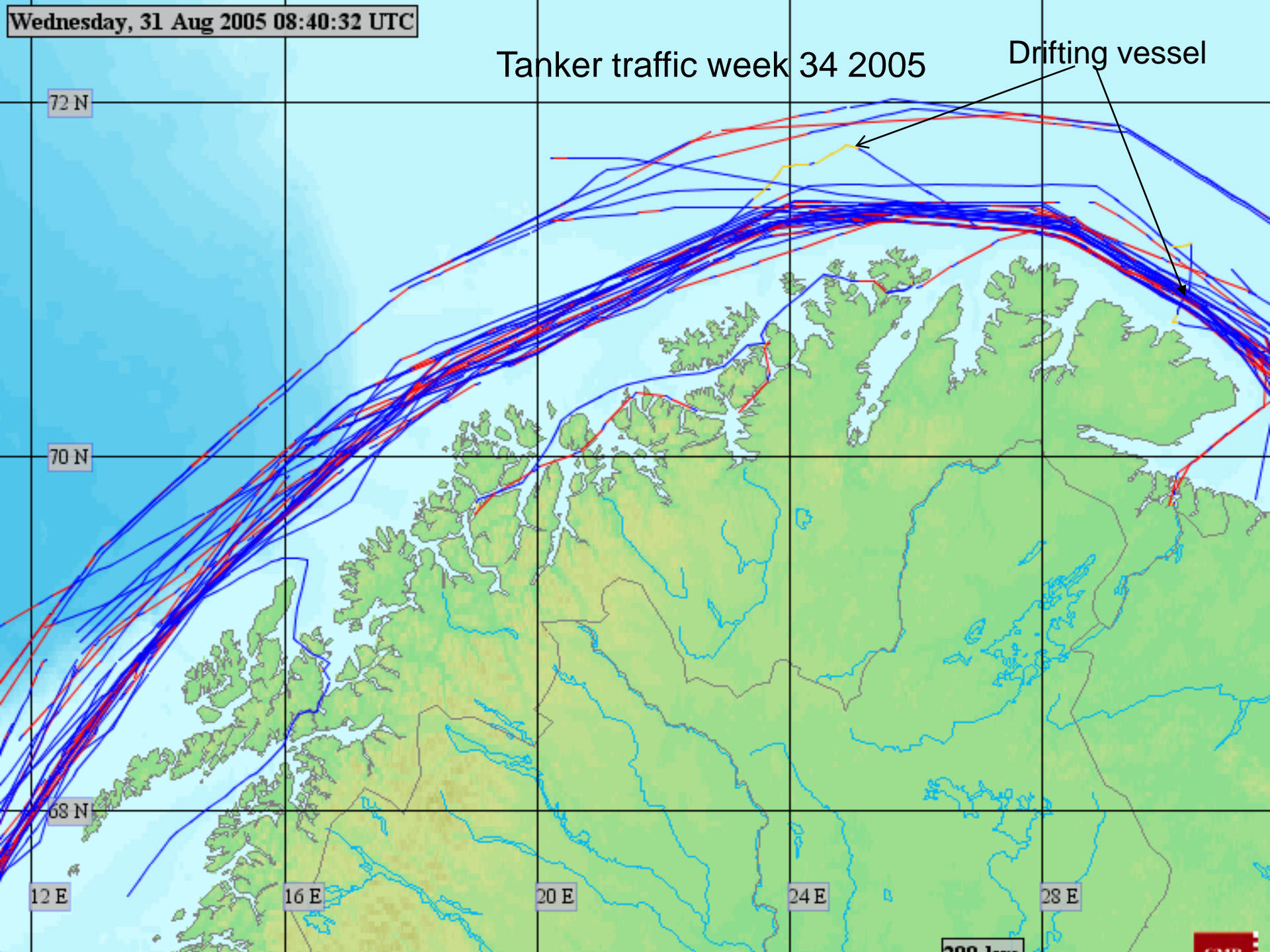
- 36 basestations
- Receives AIS signals from vessels with AIS transmitters onboard
- Coordinating webbased AIS information to other government agencies
- Used in traffic planning



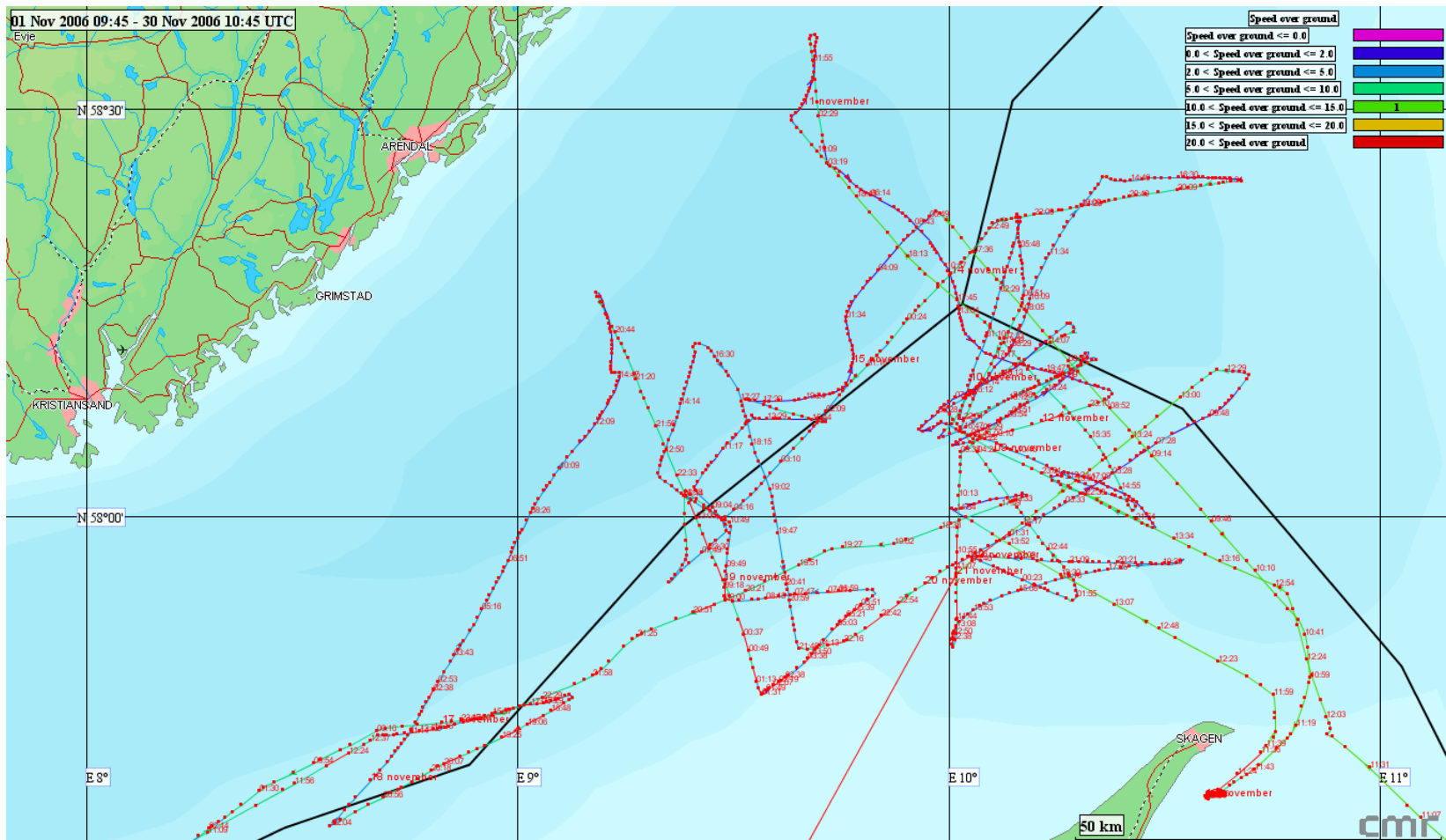
Wednesday, 31 Aug 2005 08:40:32 UTC

Tanker traffic week 34 2005

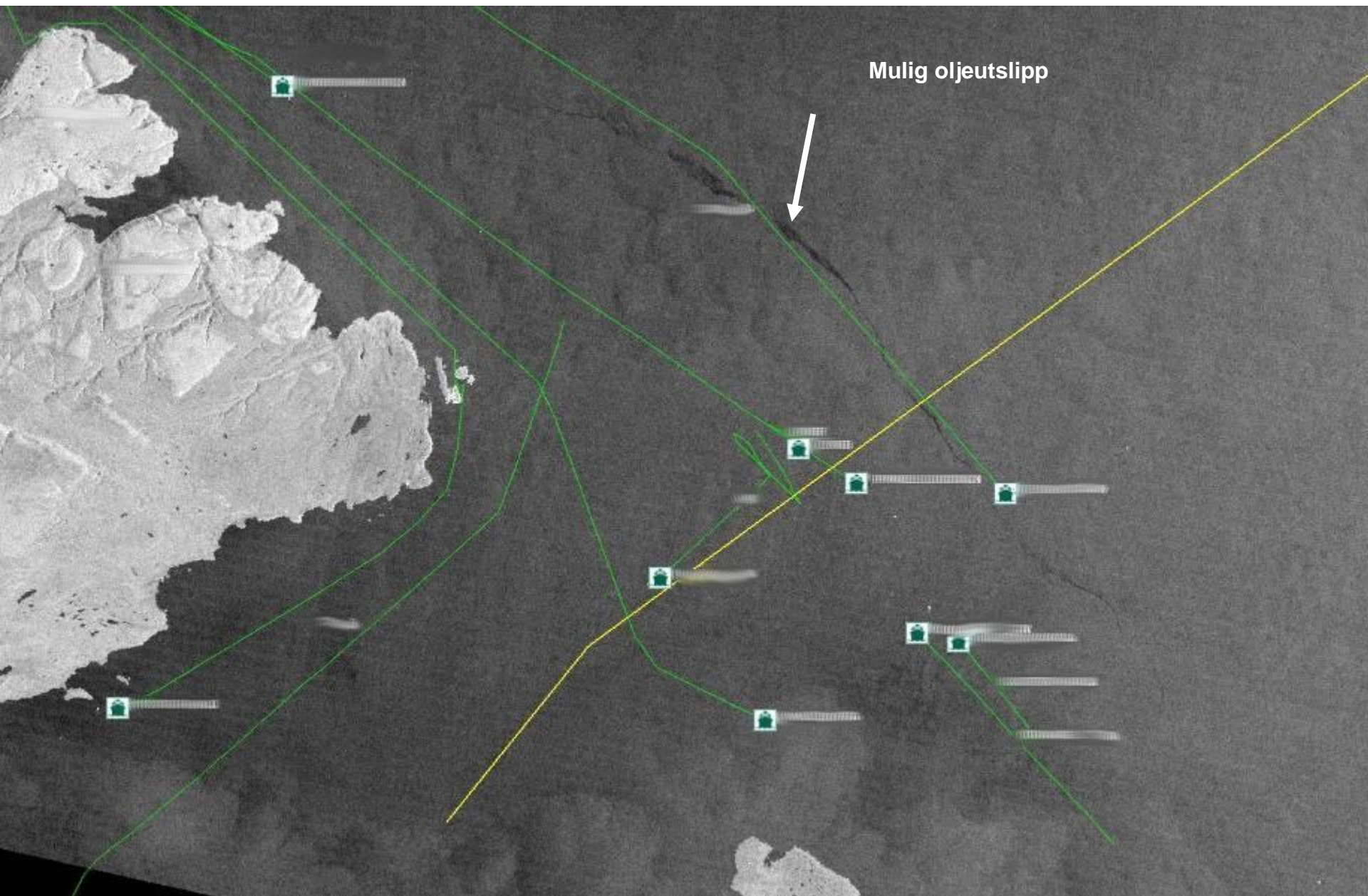
Drifting vessel



Legal business ?



Use of AIS and Radarsat



VTS test site Rotterdam 1948



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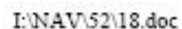
www.kystverket.no



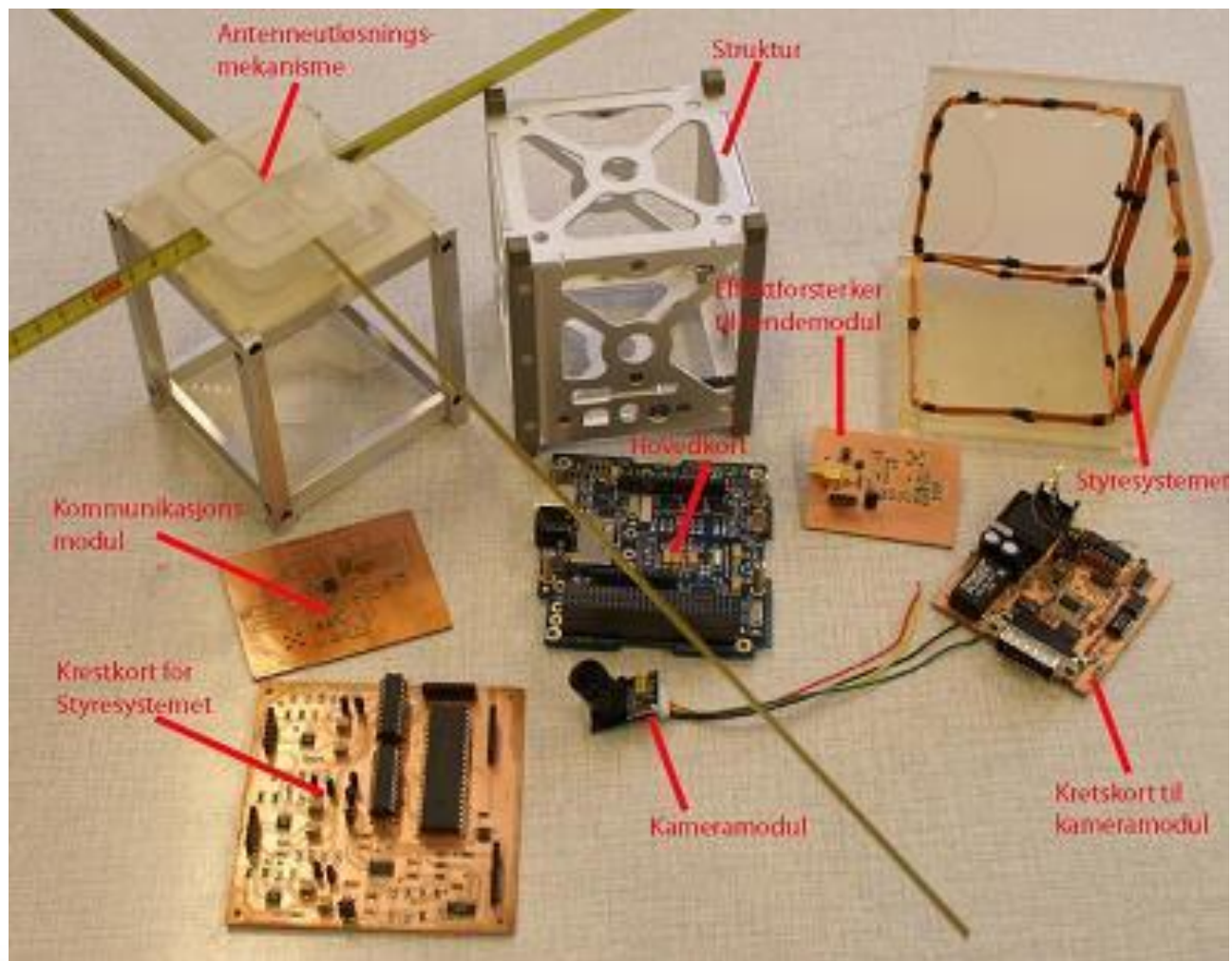
Vessel Traffic Service Centres

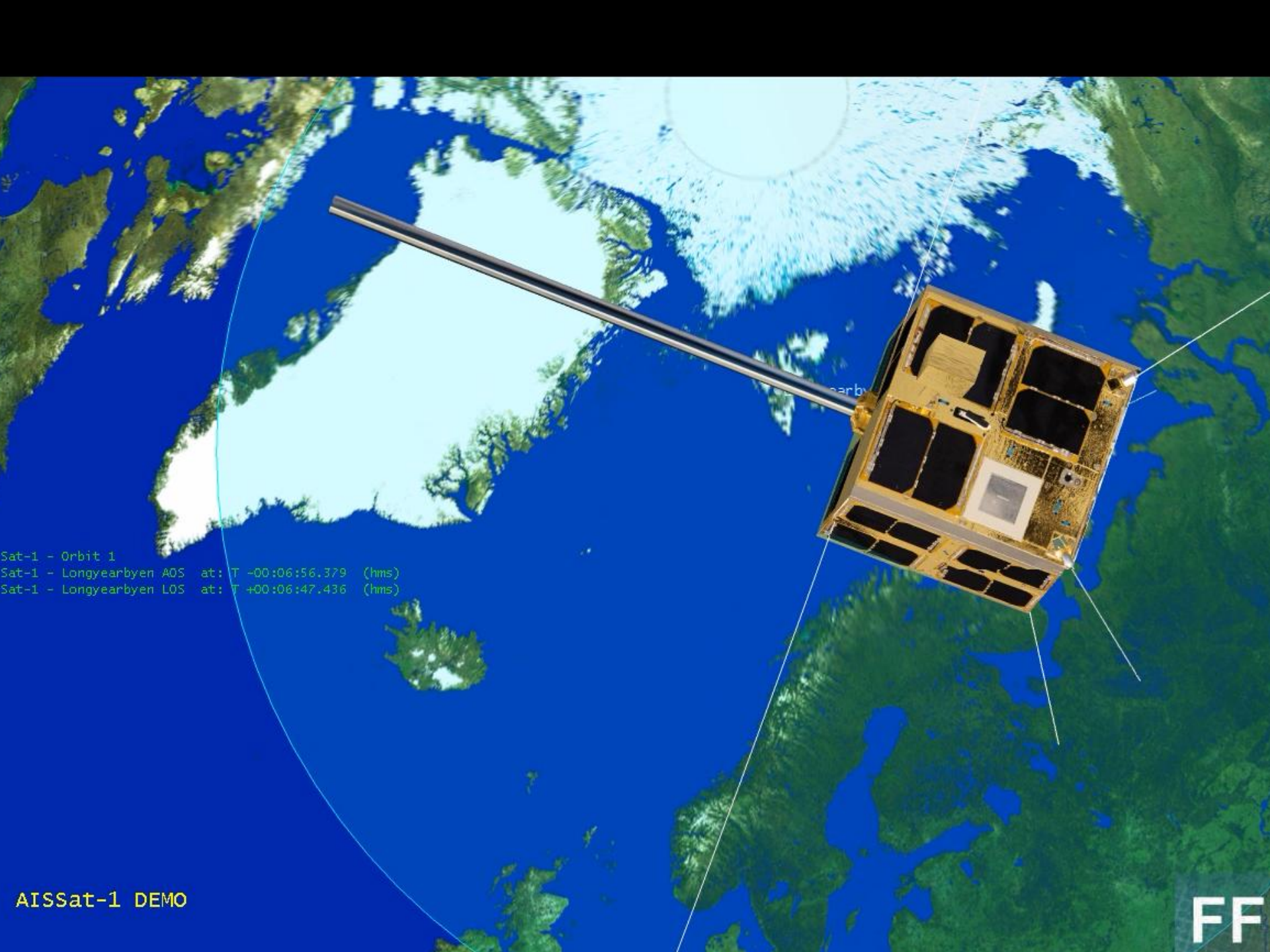


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S-AIS



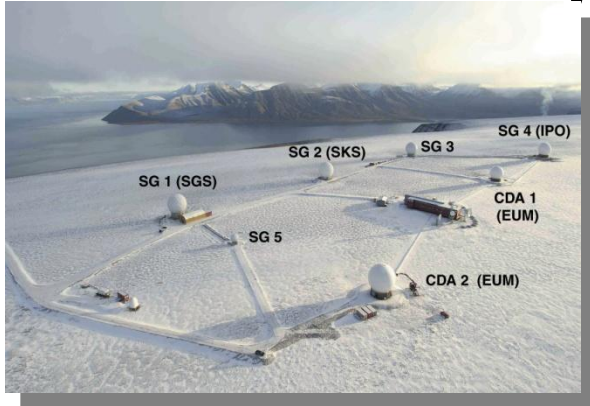
A satellite with a gold-colored body and black solar panels is shown in orbit. A long, thin antenna extends from the front. The satellite is positioned over a snowy, mountainous region, likely Longyearbyen, with green land visible to the right. A large, faint circular arc is visible in the sky.

Sat-1 - Orbit 1
Sat-1 - Longyearbyen AOS at: T -00:06:56.379 (hms)
Sat-1 - Longyearbyen LOS at: T +00:06:47.436 (hms)

AISSat-1 DEMO

FF

Area of interest



SvalSat



Grimst
Trolls

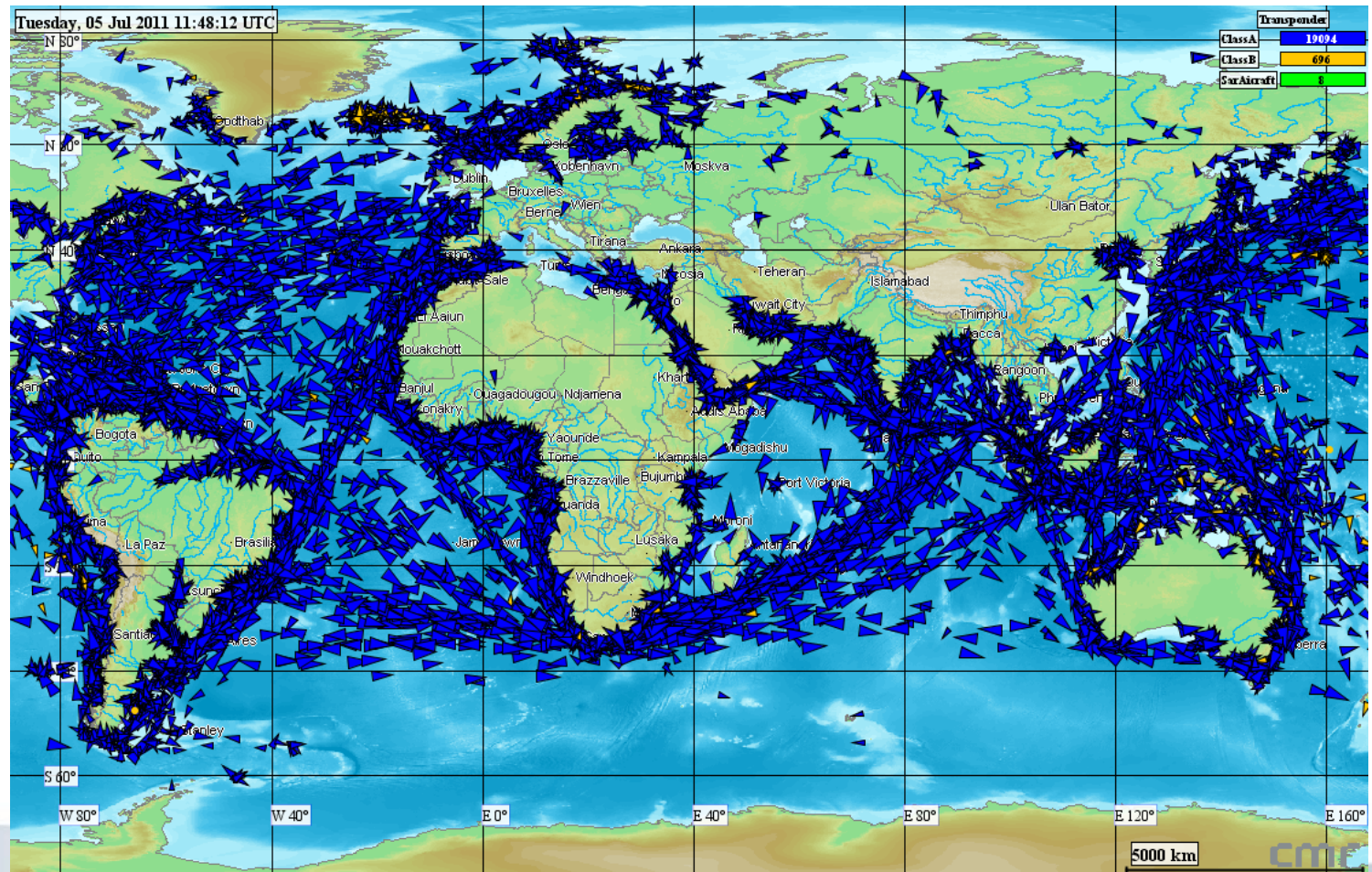


Tromsø Station

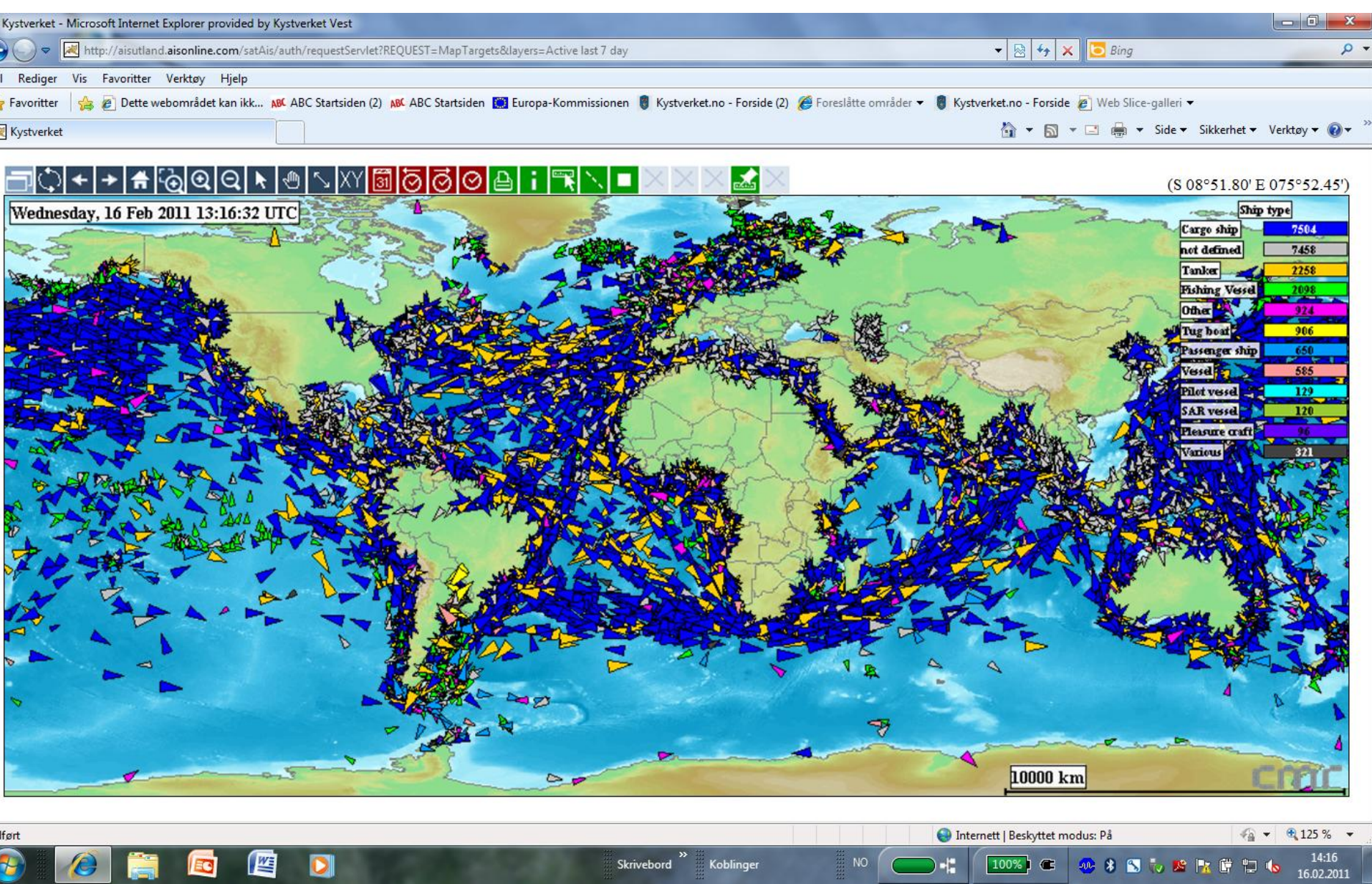


Antarctica

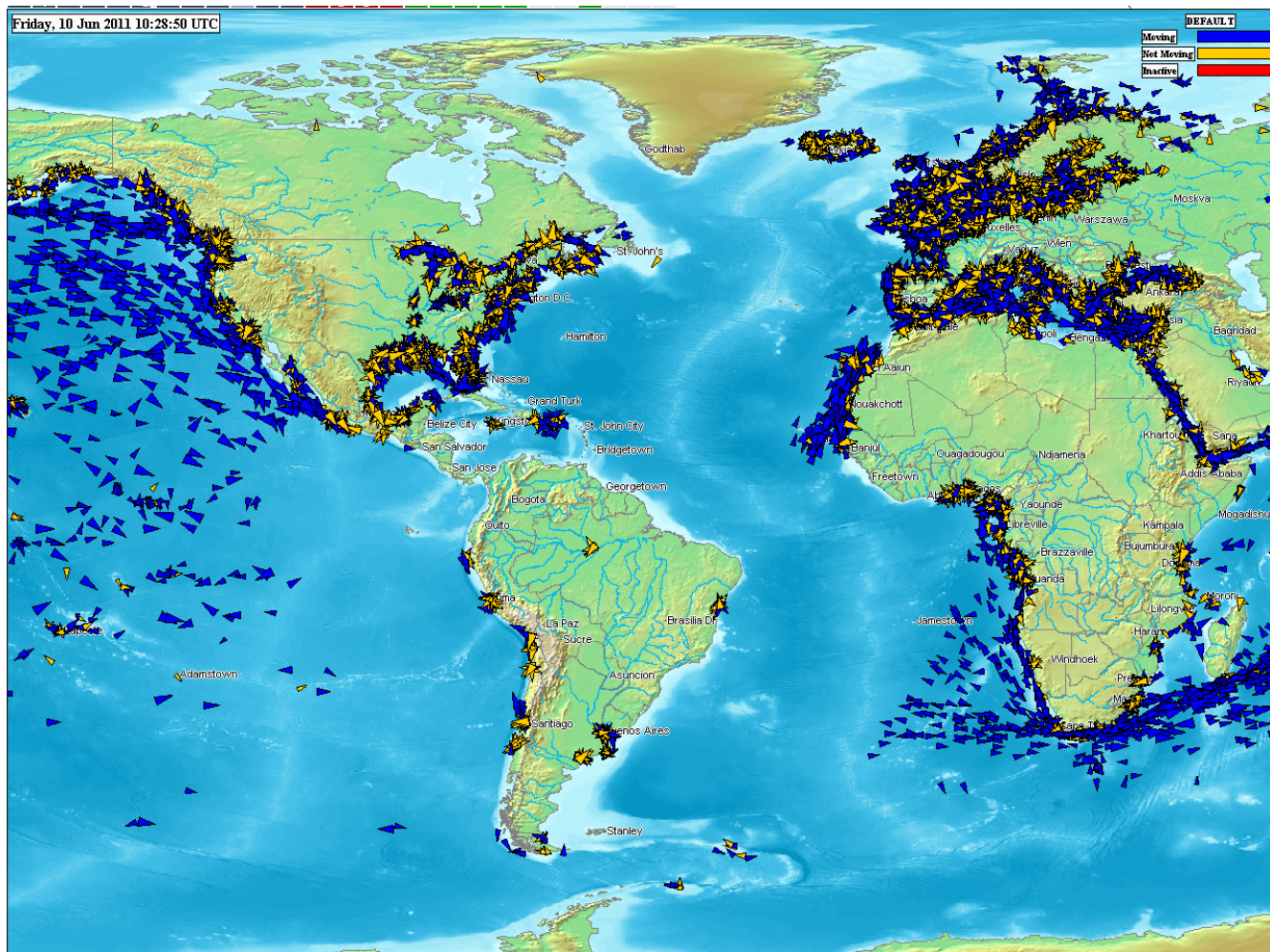
AIS sat1 24 hours



After one week

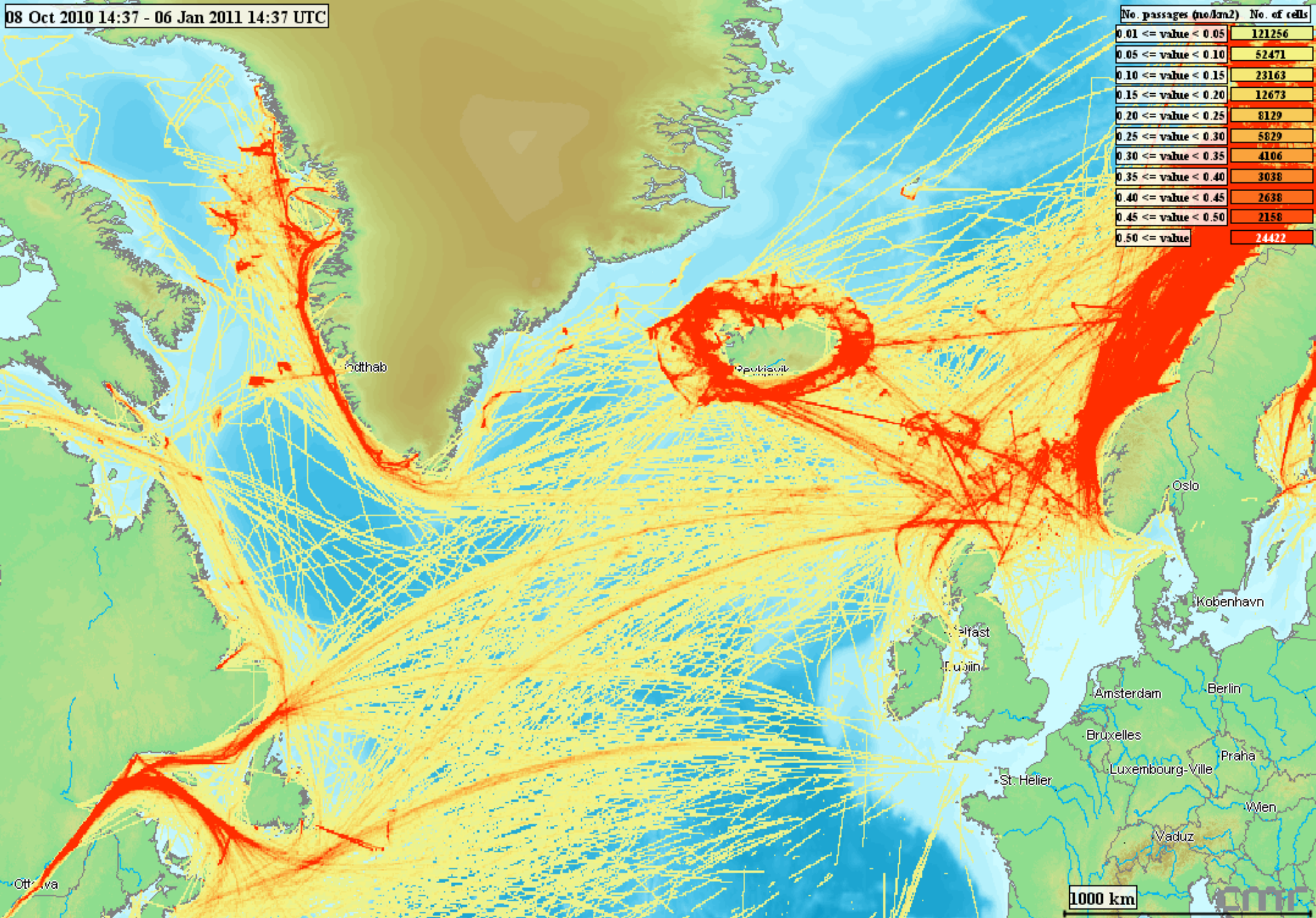


Shore based AIS and S-AIS



08 Oct 2010 14:37 - 06 Jan 2011 14:37 UTC

| No. passages (no/km2) | No. of cells |
|-----------------------|--------------|
| 0.01 <= value < 0.05 | 121256 |
| 0.05 <= value < 0.10 | 52471 |
| 0.10 <= value < 0.15 | 23163 |
| 0.15 <= value < 0.20 | 12673 |
| 0.20 <= value < 0.25 | 8129 |
| 0.25 <= value < 0.30 | 5829 |
| 0.30 <= value < 0.35 | 4106 |
| 0.35 <= value < 0.40 | 3038 |
| 0.40 <= value < 0.45 | 2638 |
| 0.45 <= value < 0.50 | 2158 |
| 0.50 <= value | 24422 |



1000 km

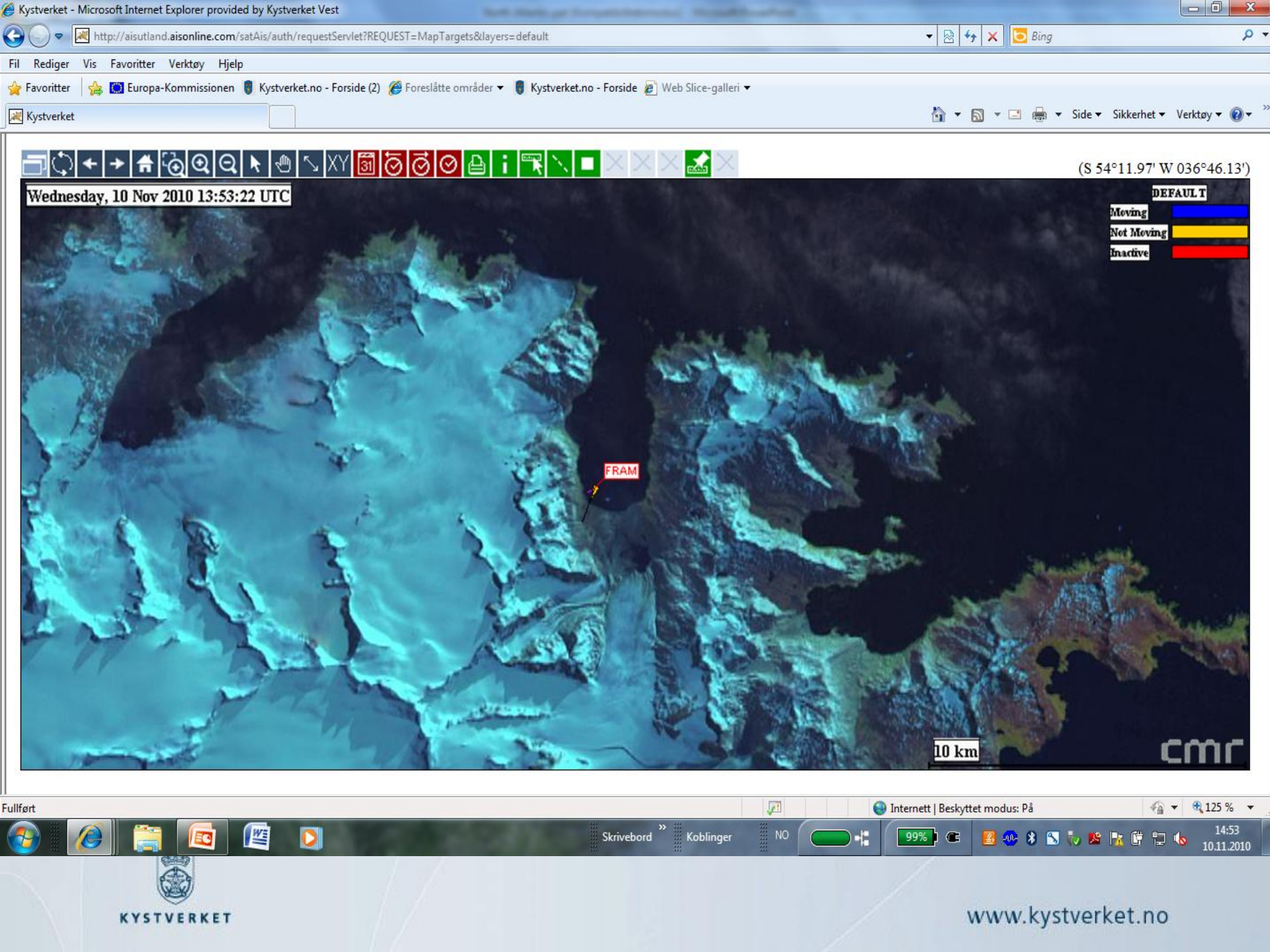
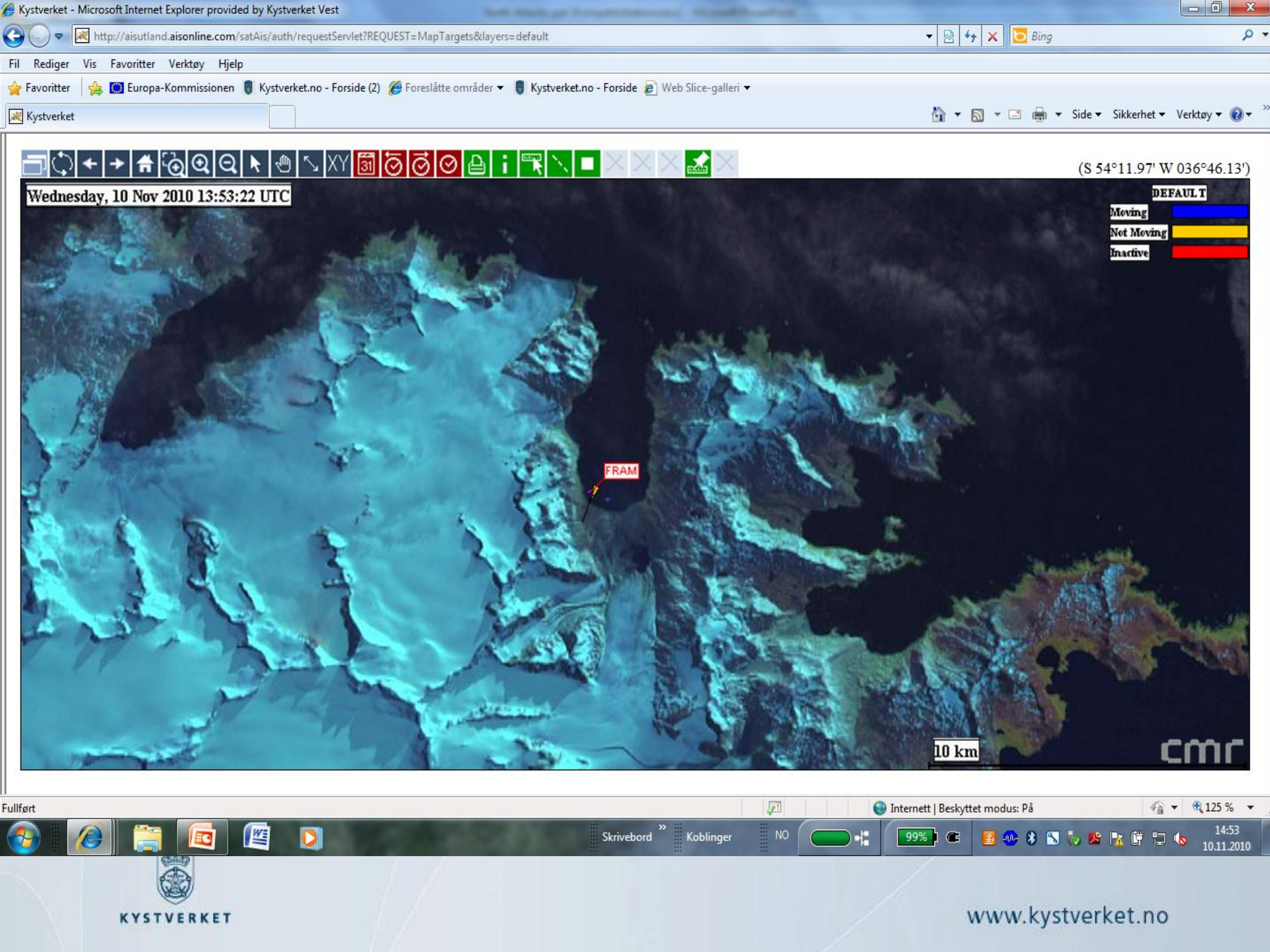
| Feature name | Value |
|------------------------|---------------------------|
| MMSI | 258932000 |
| Country | Norway |
| Active | true |
| Ship name | FRAM |
| Call sign | LADA7 |
| IMO number | 9370018 |
| Ship type | Passenger ship |
| Cargo | No additional information |
| Destination | PR.CHRISTIAN SUND |
| ETA | 2010-09-30T08:00:00 |
| Maximum actual draught | 5.1 m |
| Positioning device | GPS |
| Transponder | ClassA |
| From Country | NOT REGISTERED |
| From Port | NOT REGISTERED |
| Latitude | S 54°08.86' |
| Longitude | W 036°48.64' |
| Time stamp | 2010-11-10T10:13:59Z |



©Photo: [Maritime Photo - Ottosen, Bjørn](#) Photo published: 22.05.2007

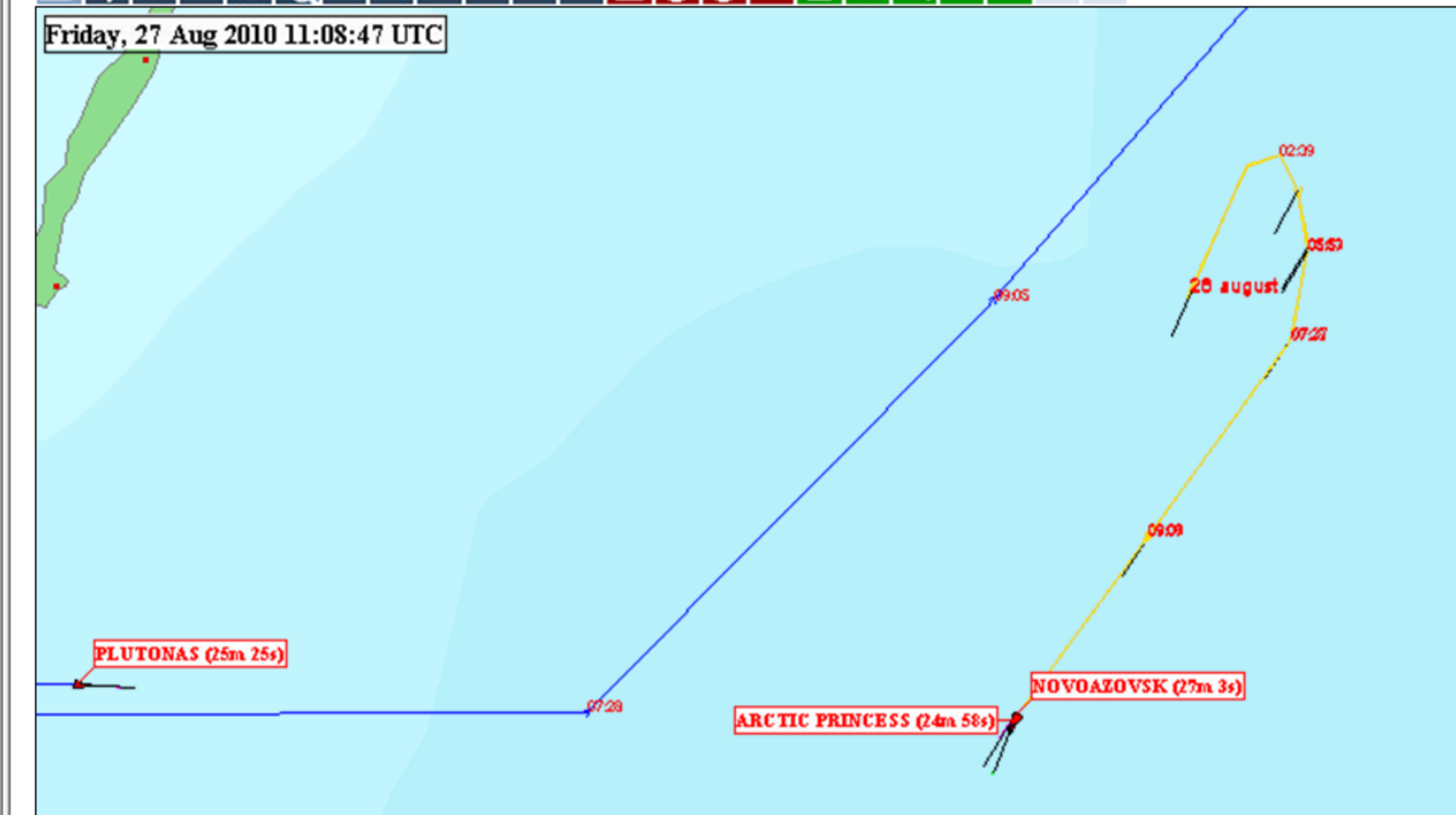
Fram





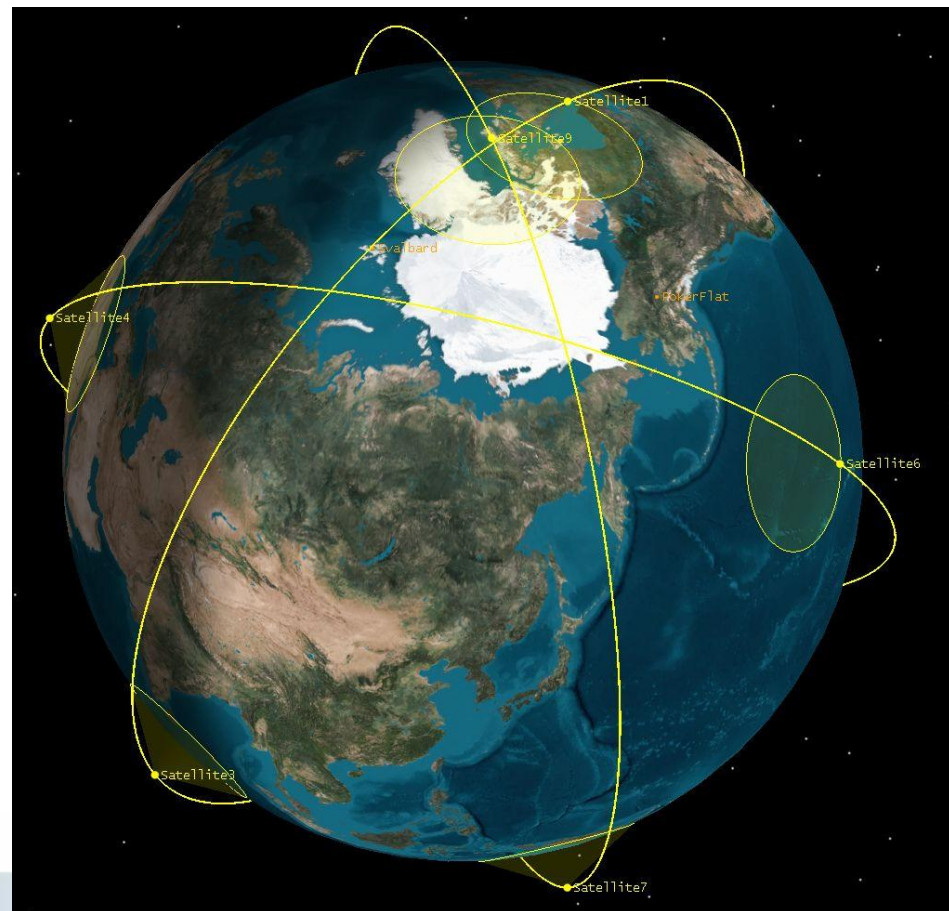


Friday, 27 Aug 2010 11:08:47 UTC

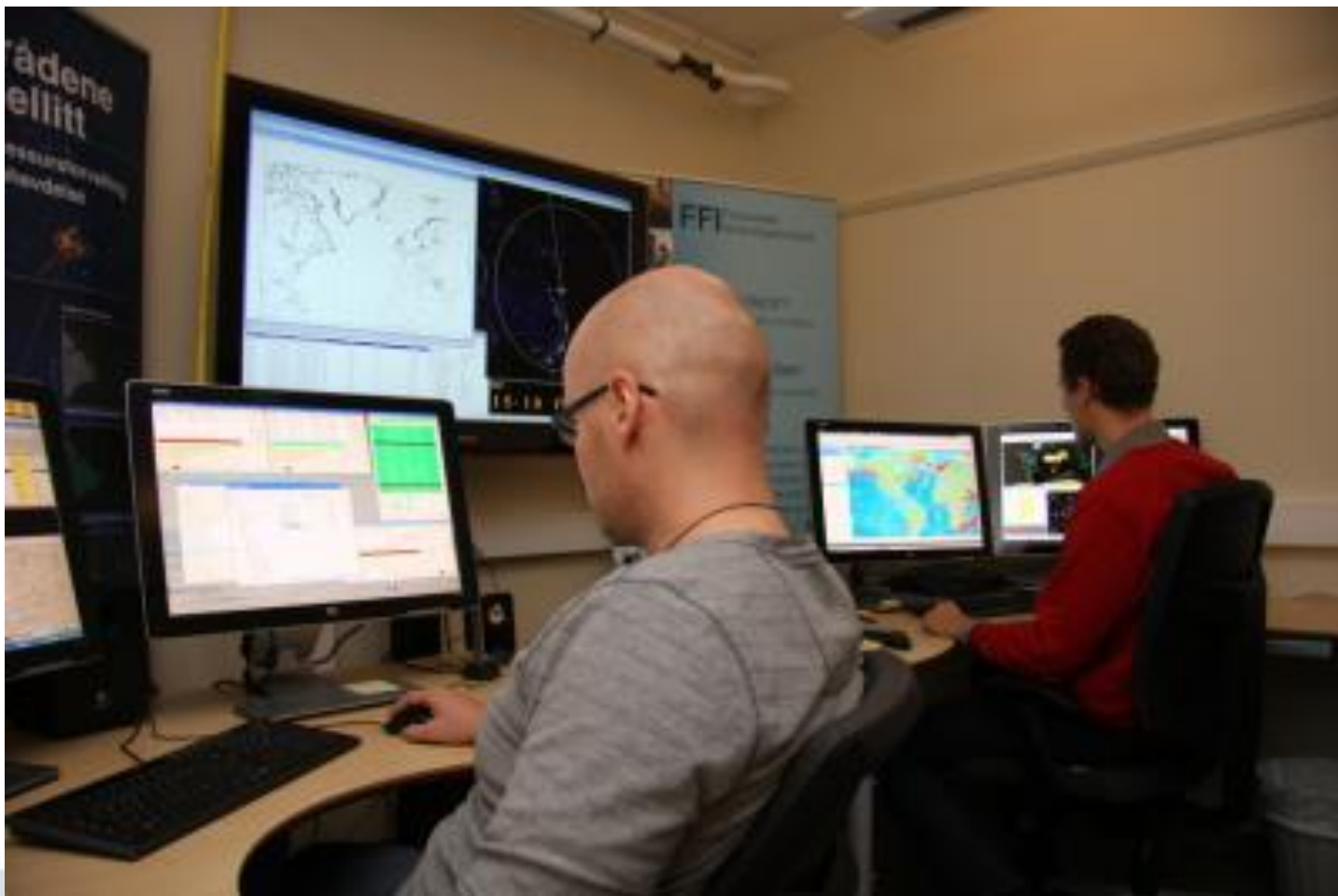


System Deployment #3 (SS_06 Operational Configuration + 4 Polar GS)

- Satellite Segment: 9 Sun-Synchronous satellites in Walker configuration 9/3/2
- Ground Segment: FULL CONFIGURATION - 4 Polar Ground Stations (Svalbard+ Troll+ Poker Flat+ McMurdo)
- Antenna: Patch_4.



Earth control FFI



Development in Norway

- Close cooperation with EMSA and ESA and partners in the North Atlantic IMC
- Investigate further use (operational, historical and statistic)
- Develop and launching AISSat2 in 2013
- Develop and launching AISSat3 in ?
- Educate relevant personnel
- Transfer the earth control from FFI to NCA





Thank you