



**KYSTVERKET**

# PNT Advisory Board June 2011

Arve Dimmen

Director Maritime Safety  
Norwegian Coastal Administration

## Norway and Russia ratify treaty on maritime delimitation



June 7<sup>th</sup>, 2011: “This is a milestone and a historic day for Norway. Our land borders and maritime boundaries are now all clearly established” said Foreign Minister Jonas Gahr Støre.



Photo: ESA – Fermin Alvarez Lopez

- Galileo ground station at Svalsat (78 N) inaugurated May 20th, 2011
  - Provides uplink capability for Galileo
- Galileo first two IOVs to be launched Oct 20th, 2011 (dual launch)
- Arctic coverage of augmentation systems still to be worked
  - ESA project "Arctic Testbed" can be a valuable "Step 1" in this process
  - An excellent opportunity for multi-national cooperation in the High North



# Maritime navigation

- International Maritime Organisation
  - Subcommittee for navigation (NAV) discussing GNSS backup systems this week
  - Increased awareness of GNSS vulnerabilities
  - General scepticism on “local solutions” for backup systems
- Maritime dGPS (“IALA-dGPS”)
  - Operational in 30+ nations worldwide
  - Modernization projects ongoing in several countries, incl. Norway
    - IALA-dGPS will probably evolve into a “dGNSS” system
  - Will continue to have a role in the maritime PNT system of systems
- SBAS systems
  - Will WAAS / EGNOS / MSAS etc have a maritime role in the future?



# EGNOS

- EGNOS Safety-of-Life declared operational March 2<sup>nd</sup>, 2011
- EGNOS v3.0 definition ongoing
  - Multi-frequency
  - Combination with WAAS
  - Use of also non-GEO for integrity distribution?
  - A maritime role?





## Kystverket tar ansvar for sjøveien

Kystverket er til stede langs hele Norges kyst og yter et mangfold av tjenester for alle typer brukere av norske farvann.