



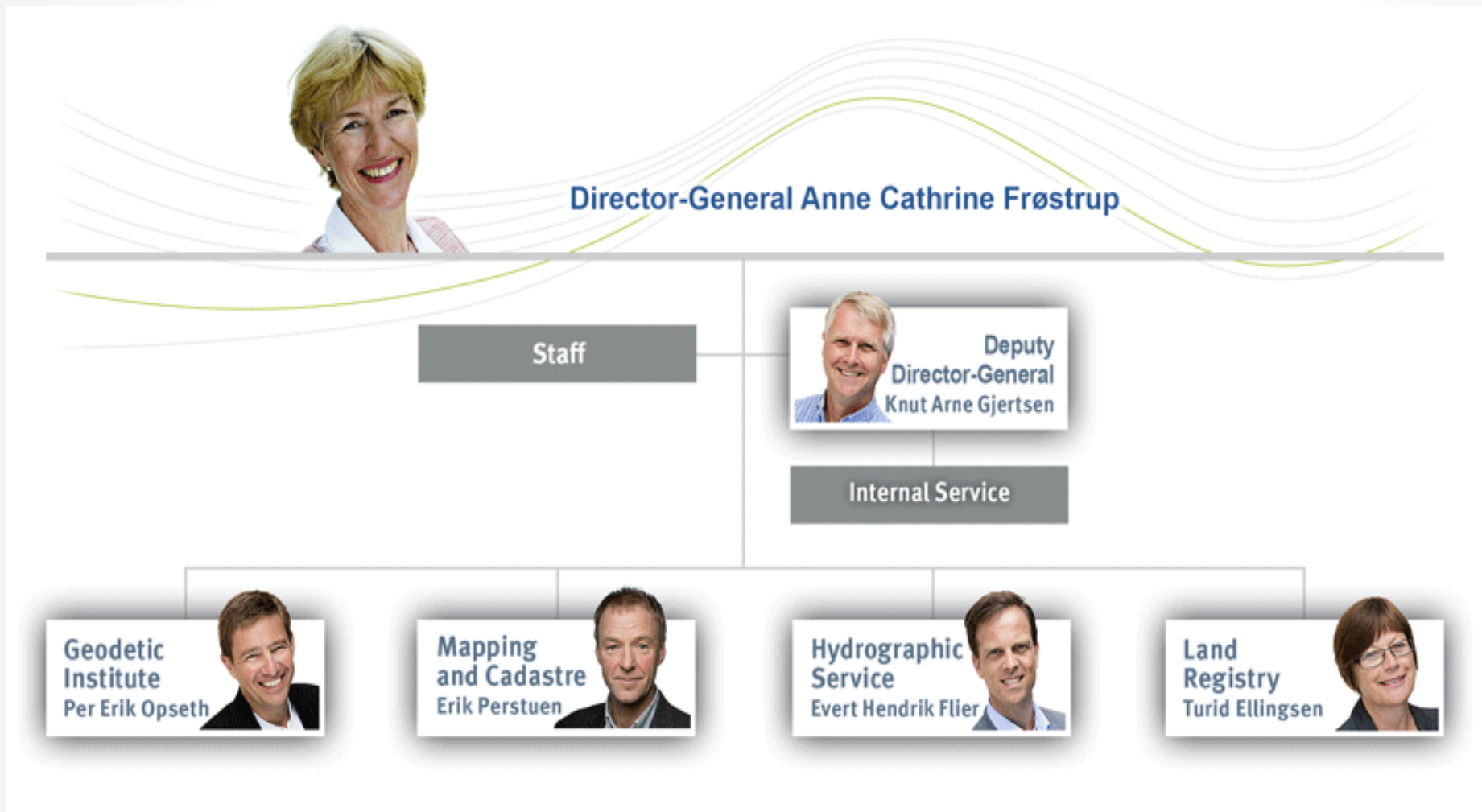
Kartverket

Country report Norway

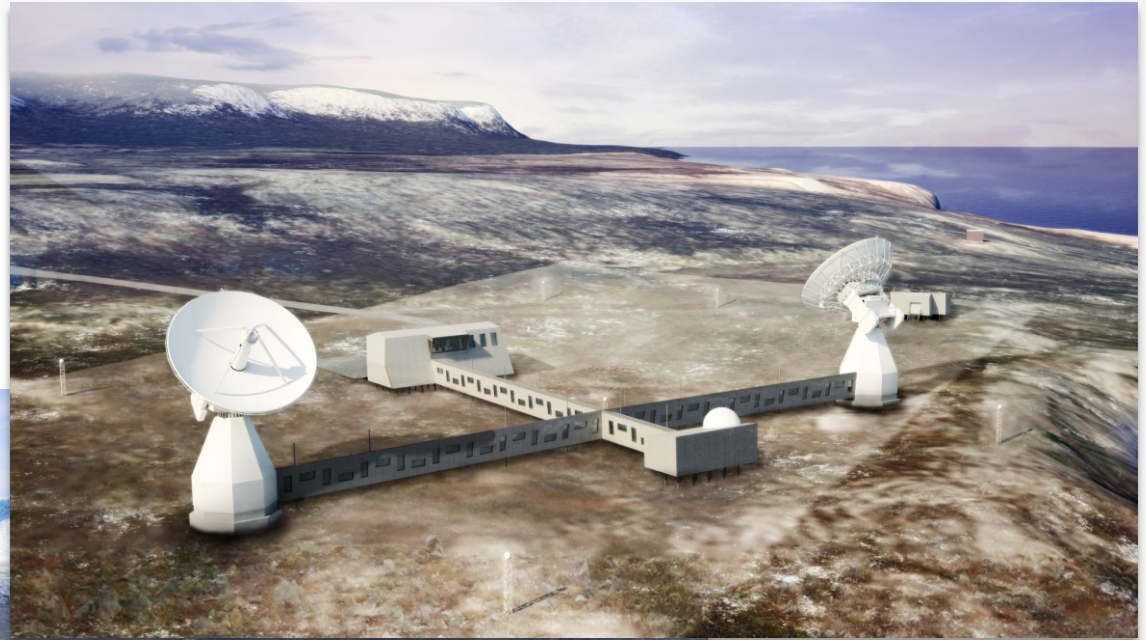
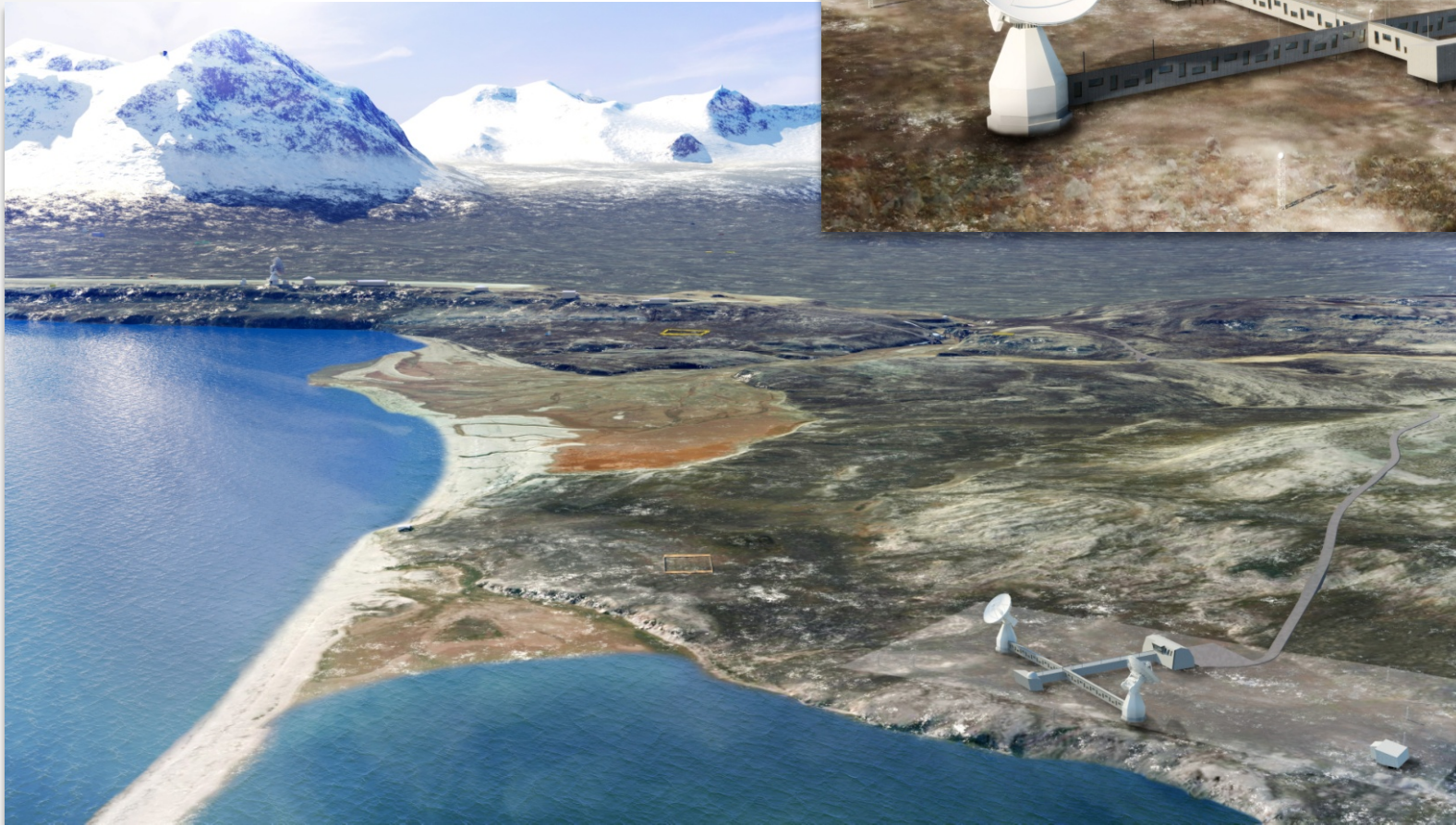
NKG - Chalmers Sept.1th. 2014
Acting director Geodetic Institute, Reidun Kittelsrud



NMA organisation



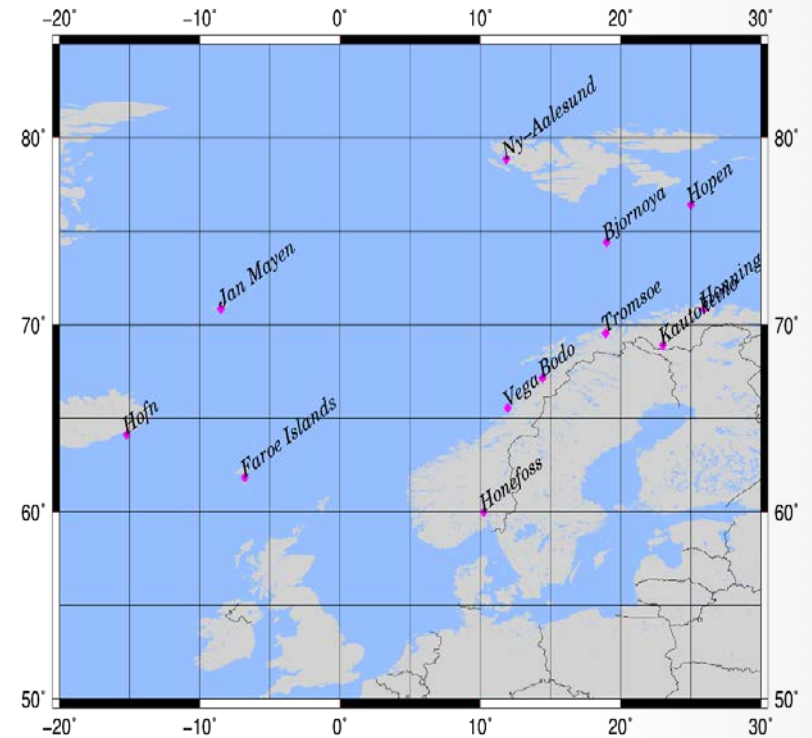
Renewal of the geodetic observatory in Ny-Ålesund



Norwegian GNSS Network



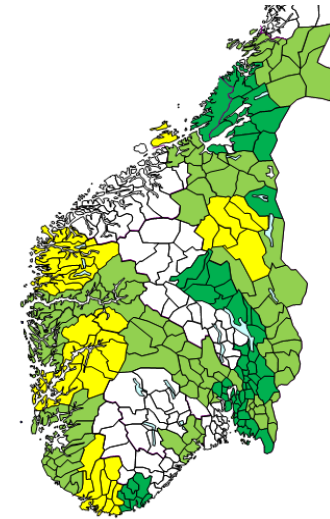
GNSS Receiver Network (1 Hz)



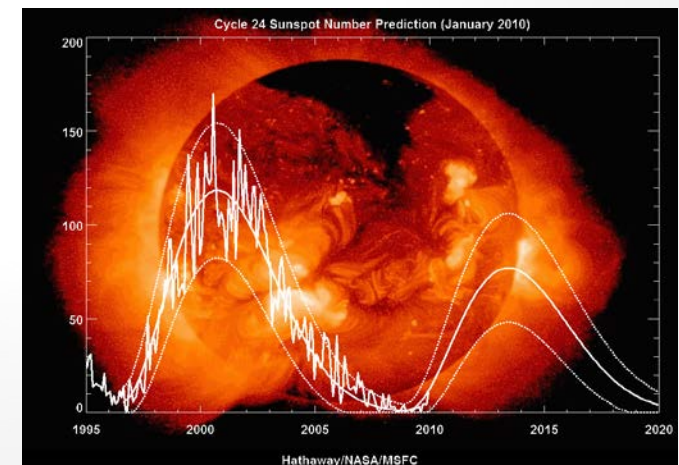
GNSS Scintillation Receiver Network
(100 Hz)

Actions to improve accuracy

- Densifying
- NN2000 rollout
- Improving geoid
- New RTK-software and infrastructure
- R&D projects to improve software (tropospheric)
- R&D projects on integrity
- Robustness during ionospheric disturbances



NN2000	
Status pr. 01.03.2014	
■ Changed to NN2000	(69)
■ Will change this year	(ca110)
■ Project <u>running</u>	(ca 50)



New GNSS velocity field for Fennoscandia is developed

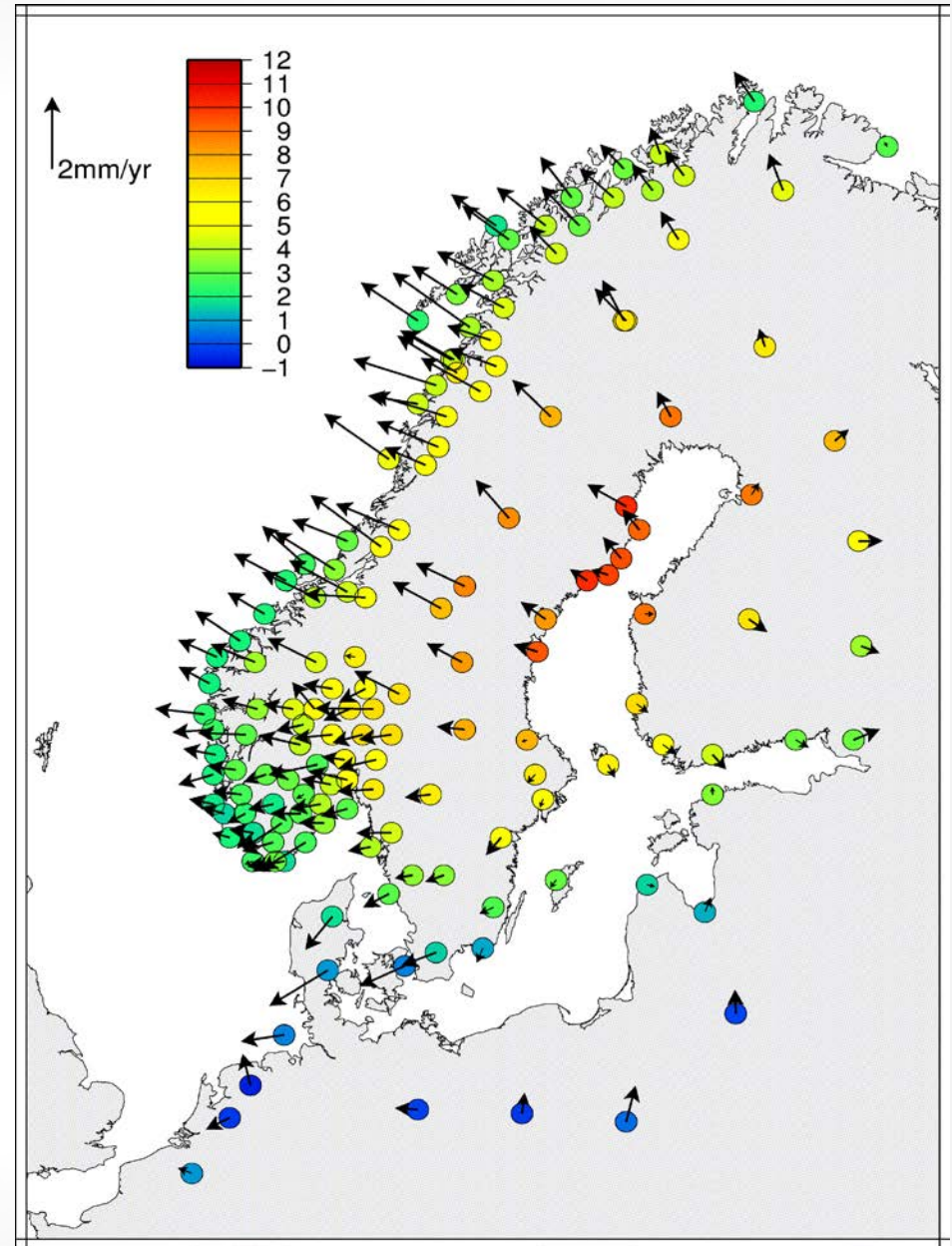
GNSS data from 2000 analyzed with GAMIT
Station with >3.5 years observation time are included
The results are used for GIA studies, for reference frame issues and to study local neo-tectonic processes.
A new method to compare velocity fields and GIA models are used (The GIA frame approach)

References:

Kierulf, H. P., Steffen H, Simpson MJR, Lidberg J, WU P, Wang H (2014) A GPS velocity field for Fennoscandia and a consistent comparison to glacialisostatic adjustment models. J. Geophys. Res. Solid Earth, 119, doi:10.1002/2013JB010889

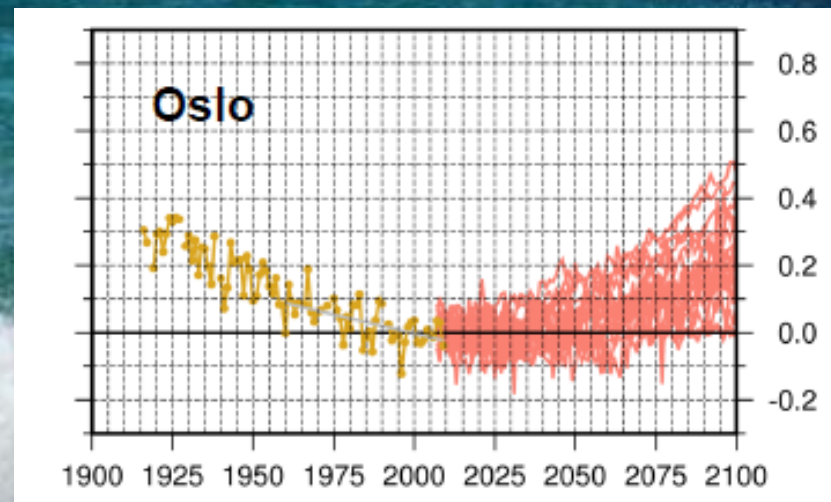
Kierulf HP, Ouassou M, Simpson MJR, Vestøl O (2012) A continuous velocity field for Norway. J of Geodesy 87:337–349, doi:10.1007/s00190-012-0603-2

Olesen O, Kierulf HP, Brønnert M, Dalsegg E, Fredin O, Solbakk T (2013) Deep weathering, neotectonics and strandflat formation in Nordland, northern Norway. Norwegian J of Geology 93(3-4):189–213



- Continuation of the BIFROST work, but with more stations and longer observation time

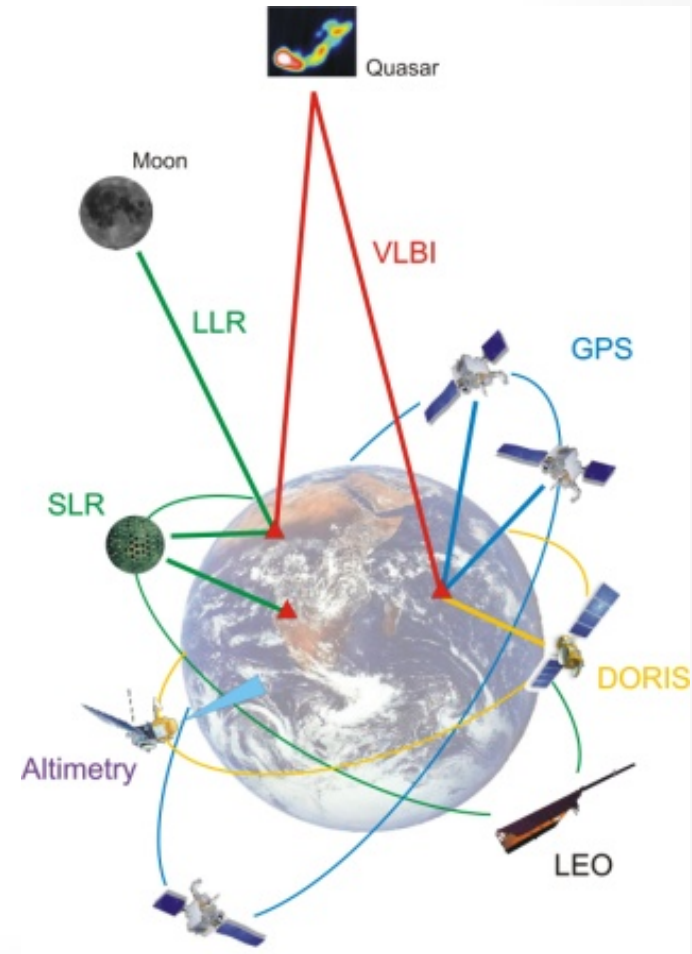
"Klima i Norge 2100" - to be published 2015



Geosat - a multitechnic processing tool

Geosat will form the basis for our contribution to the processing of a global geodetic reference frame.

VLBI, SLR, DORIS and GNSS data will be processed simultaneously at observation level together with calculation of the orbits for some LEO's.



Education

- Norwegian University of Life Sciences (NMBU),
 - slight increase in number of publications
 - absolute gravimeter made extensive observing series at Ny-Ålesund
- Norwegian University of Science and Technology (NTNU)
 - prioritize use of satellite technologies, focusing on geodetic and remote sensing.
 - registered Phd courses in satellite geodesy
- University of Oslo (UiO)
 - contributions on geophysical processes on Svalbard



“Geodetic Earth observation contributes significantly to strengthen the study of our changing planet and provide valuable information to policy makers who are exploring ways to address climate change”

**Dr. Rajendra Pachauri,
Chair IPCC**

