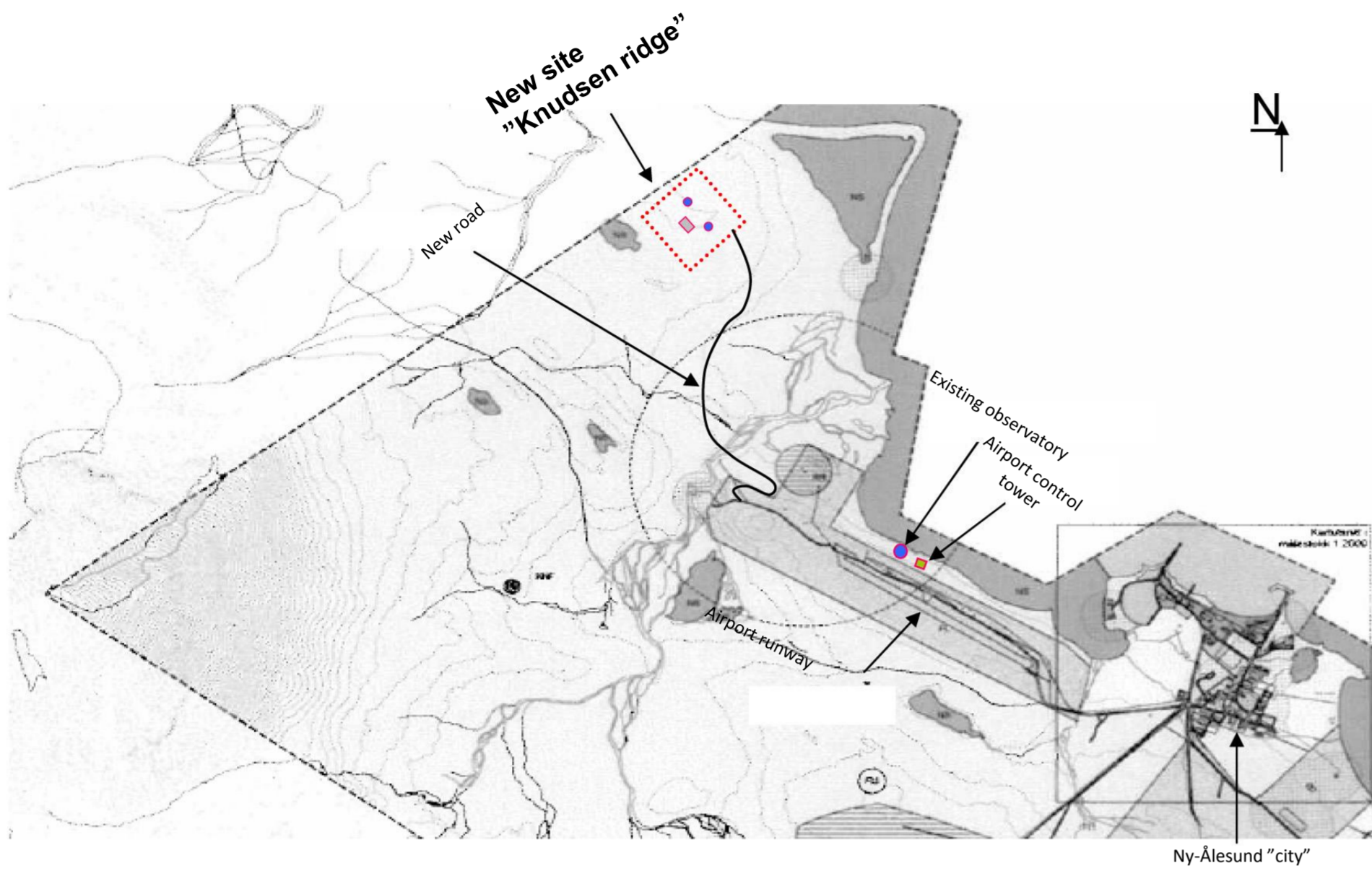


# New fundamental station in Ny-Ålesund, Svalbard

The Norwegian Mapping Authority's (NMA) geodetic observatory has been operating in Ny-Ålesund since 1994. To adapt to the VLBI 2010 standard and extend our activity to also integrate SLR, NMA is in the process of funding a new fundamental station. Handling more intensive observations in real time, requires a fiber optic cable to Ny-Ålesund.

The Norwegian Mapping Authority (NMA) is currently applying for project funding of €26 Mill.

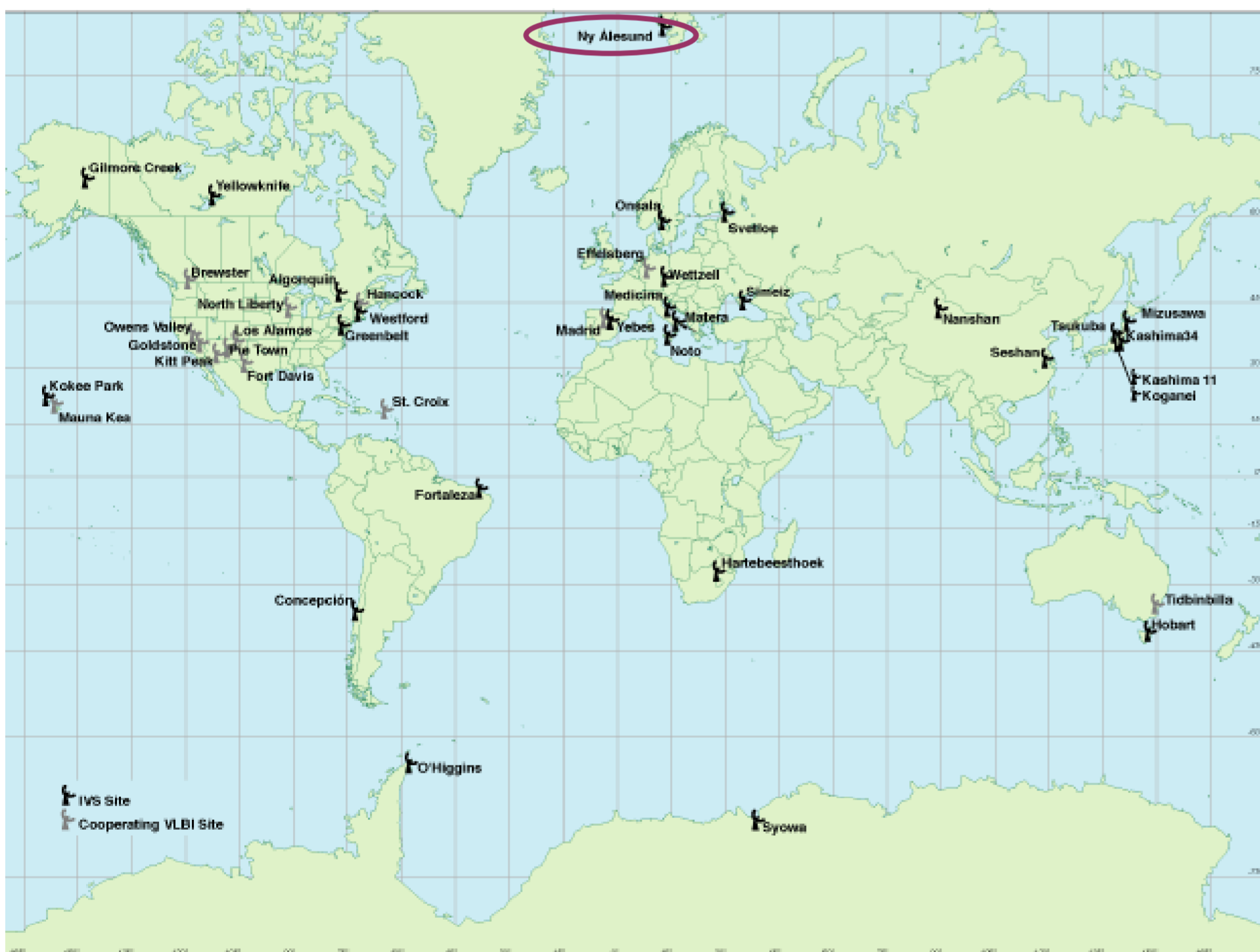


## The new fundamental station will include:

- Twin telescopes (according to BKG technical spec.)
- SLR
- Superconducting gravimeter (existing)
- GNSS (Existing)
- Tide gauge (Existing)
- DORIS (Existing, not operated by NMA)

### About the project:

- The existing observatory is located very close to the runway at Ny-Ålesund airport, and is already a challenge. Also a future development of the airport might effect our activity. Therefore, we have proposed to move the observatory about 1 km away, to the "Knudsen ridge".
- In Ny-Ålesund we also have radio silence to a large degree, which is of great benefit for VLBI. This is one of the key reasons for staying in Ny-Ålesund rather than move to Longyearbyen, which has far better infrastructure.
- The project plans include preparation for installation of an automatic stability control system.



## Project plan

Application submitted to Ministry of Environment in December 2009

Additional clarification during first half of 2010

- Environmental impact assessment
- Air traffic
- Ground stability

Decision on application in autumn 2010

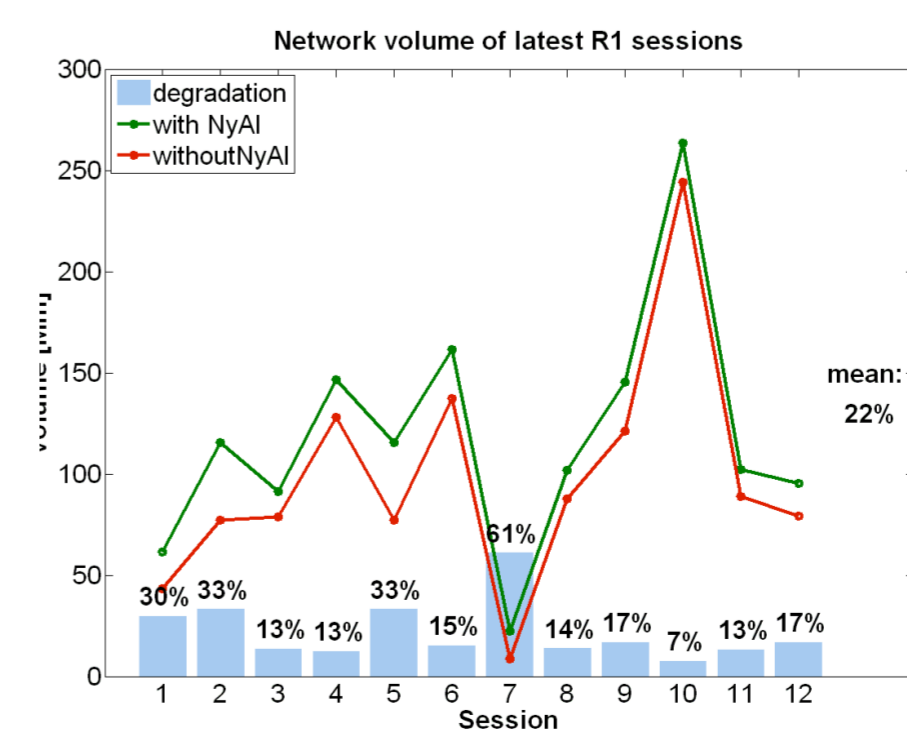
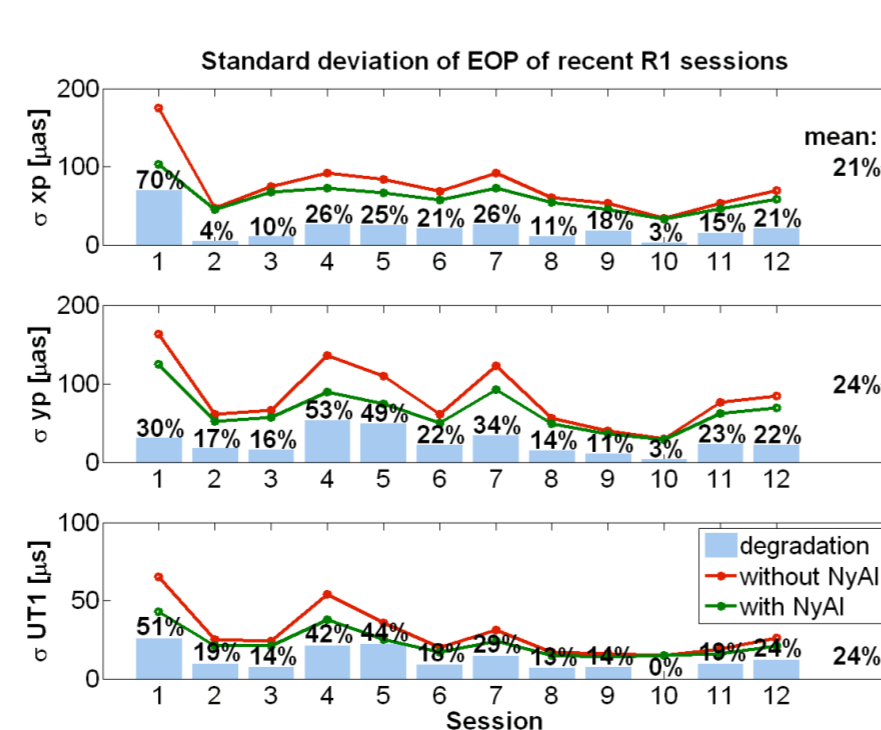
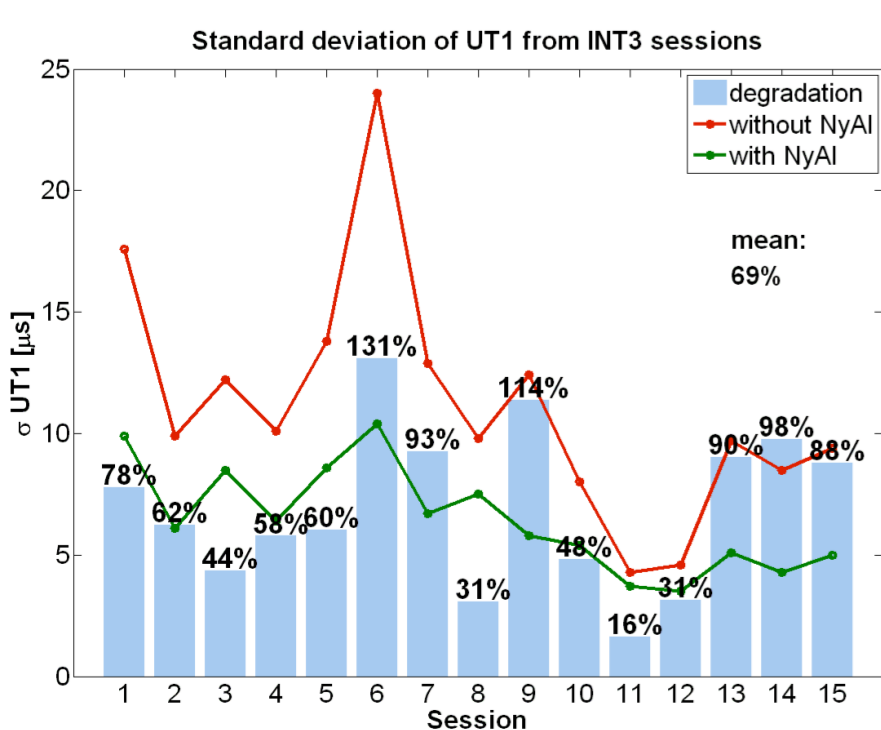
Project kick off winter 2010/11 with tender invitations a.o.

Project duration 2011-16

### Challenges

- The development of a new feed has to be completed – we need to make sure this is finished in due time.
- Continuous operation (24 hours a day, 365 days a year) is a challenge for NMA when it comes to manning in Ny-Ålesund. For NMA, it is important to establish a system for remote control within the IVS network.
- NMA appreciate the support we have received from the IVS network, and we are depending on this cooperation to be able to go through with the project
- Complete radio silence (only selected frequencies today) might be possible to achieve in Ny-Ålesund if this is of great importance for VLBI measurements, but will reduce options for other scientists in the area.

## Ny-Ålesund plays a key role



- The only VLBI antenna in the Arctic, where we expect the consequences of climate changes to be bigger and more visible.
- The Norwegian government wants to take a leading role within climate research in arctic areas. With a new fundamental station, NMA will deliver a significant contribution to achieving this goal.

Ref. Simulations of Ny-Ålesund's contribution to the network (Lucia Plank, Institute of Geodesy and Geophysics (E128))

NMA is in the process of funding the project – and support from the "geodetic community" is necessary to raise the funds.