Continuously operating reference stations (CORS)

Main Land 125 stations
PERMANENT STATIONS

In the Arctic

[Map showing permanent stations in the Arctic with locations marked]
REFERENCE NETWORK

First order, called Stamnett
REFERENCE NETWORK

Second order, called Landsnett.
LEVELLING NETWORK

First order
EXTENSION OF THE LEVELLING NETWORK

2008 - 2010

More GPS/levelling points

New lines into areas with no precise levelling

Yearly production of 450 – 500 km
GPS/LEVELLING POINTS

Connection between geometrical and geophysical reference frame

2380 leveled points in the Reference Network
Validation of gravity based geoid models
Connection points for Height Reference Models

More points necessary
A project is going on to determine the density of GPS/levelling points in order to achieve 1 cm accuracy.
In parts of Norway there must be less than 10 km between the GPS/levelling points.

NN2000 in the reference network will be calculated using a Height Reference Models
MUNICIPALITIES CHANGING TO NN2000

 NN2000
 Status pr. 23.05.2011

- Changed to NN2000 (1)
- Will change this year (16)
- Project running (2)
A NEW REFERENCE FRAME, IGS05N

A new scientific reference frame

Uncertainty about the accuracy of the ellipsoidal heights in our existing reference frame EUREF89
   Main focus in 1996 was the horizontal components

Re-measuring points in our reference network to a spacing of 30 km
   Five days of continuous measuring
   Possessed with the Bernese GPS software

Recalculating the whole reference network, 1\textsuperscript{st} and 2\textsuperscript{nd} order network

Official ellipsoidal heights will be changed to IGS05N transformed to EUREF89.
Thank you for your attention!