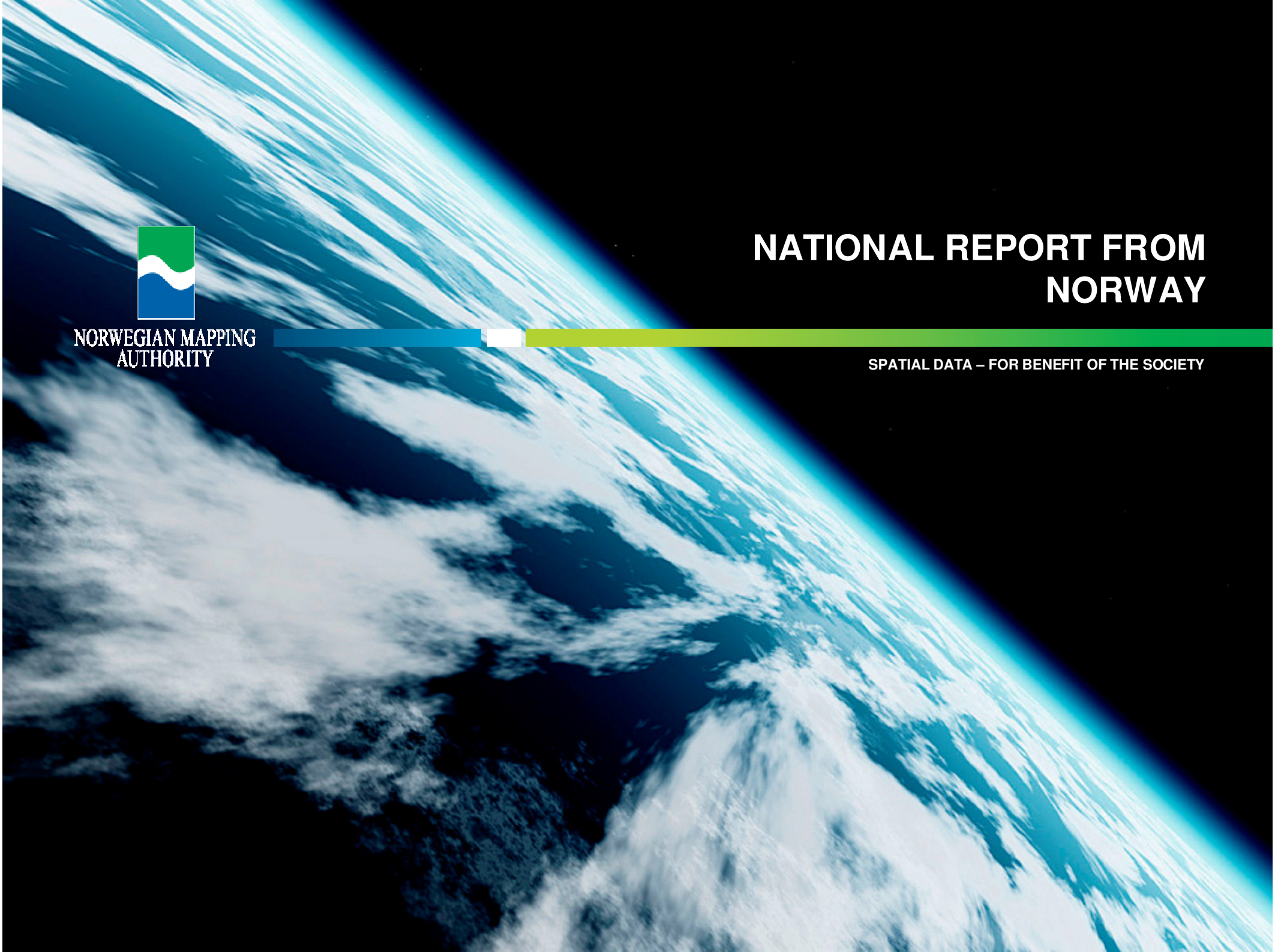


NORWEGIAN MAPPING AUTHORITY

NATIONAL REPORT FROM NORWAY

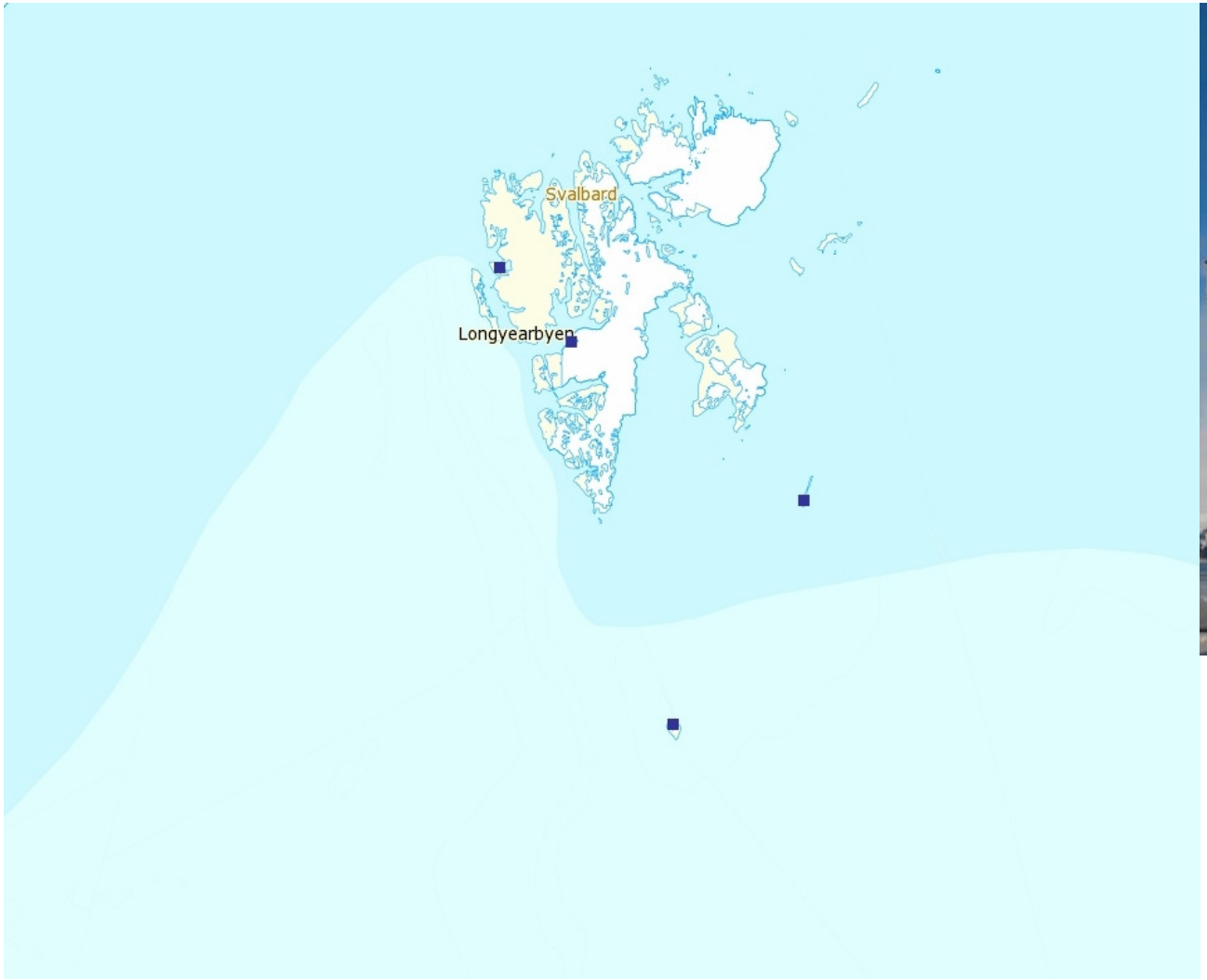
SPATIAL DATA – FOR BENEFIT OF THE SOCIETY

Continuously operating reference stations (CORS)

Main Land 125 stations

PERMANENT STATIONS

In the Arctic

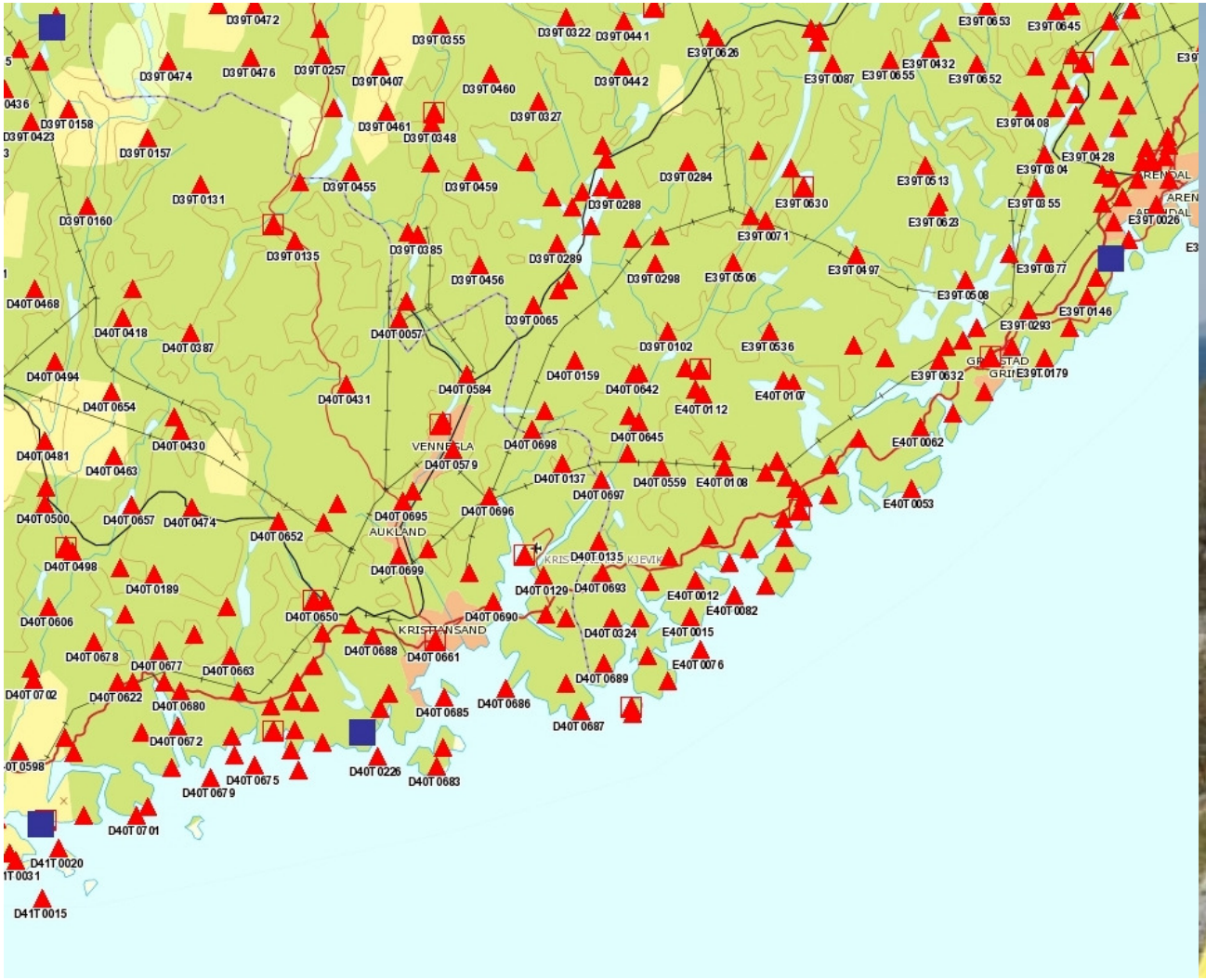


RERERENCE NETWORK

First order, called Stamnett

REFERENCE NETWORK

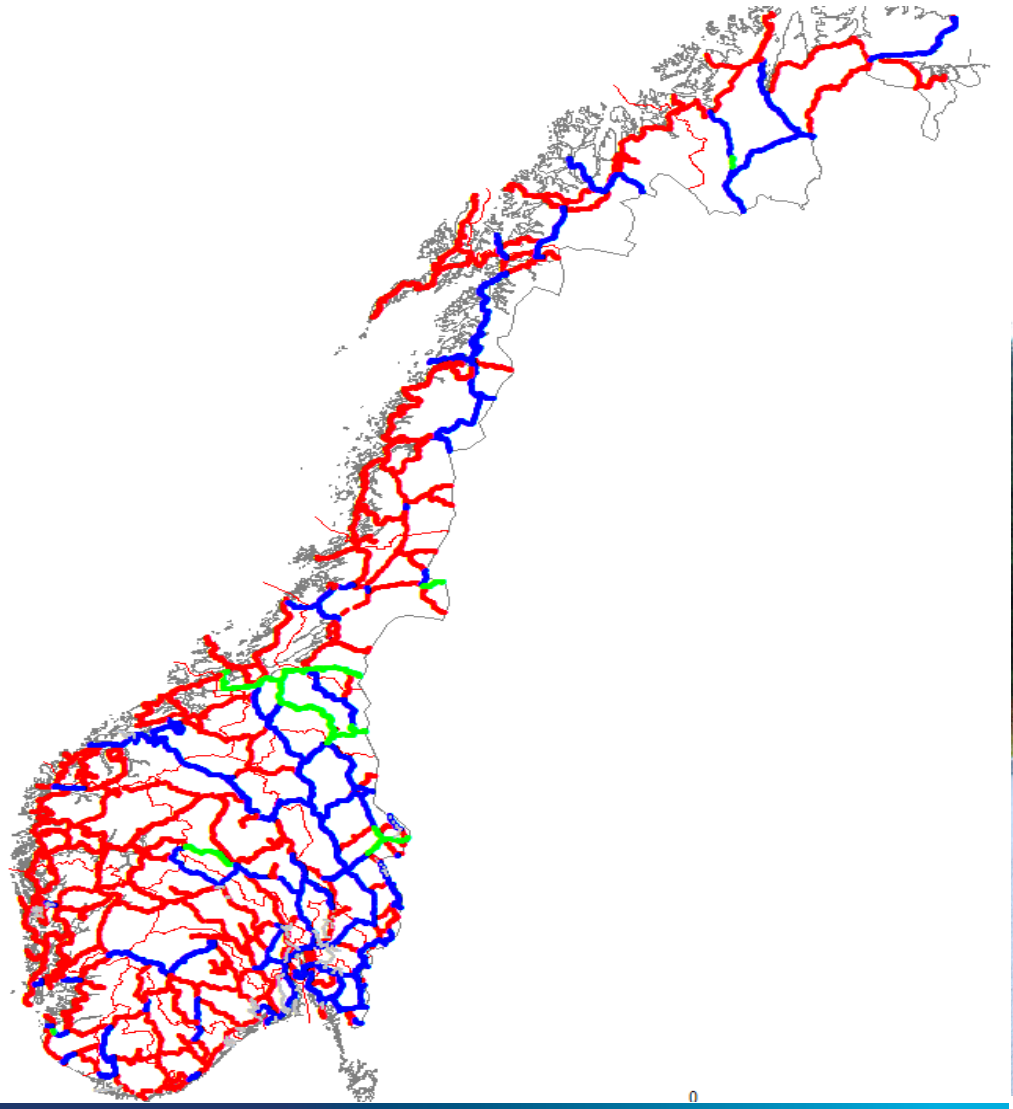
Second order, called Landsnett.



NORWEGIAN MAPPING AUTHORITY

LEVELLING NETWORK

First order



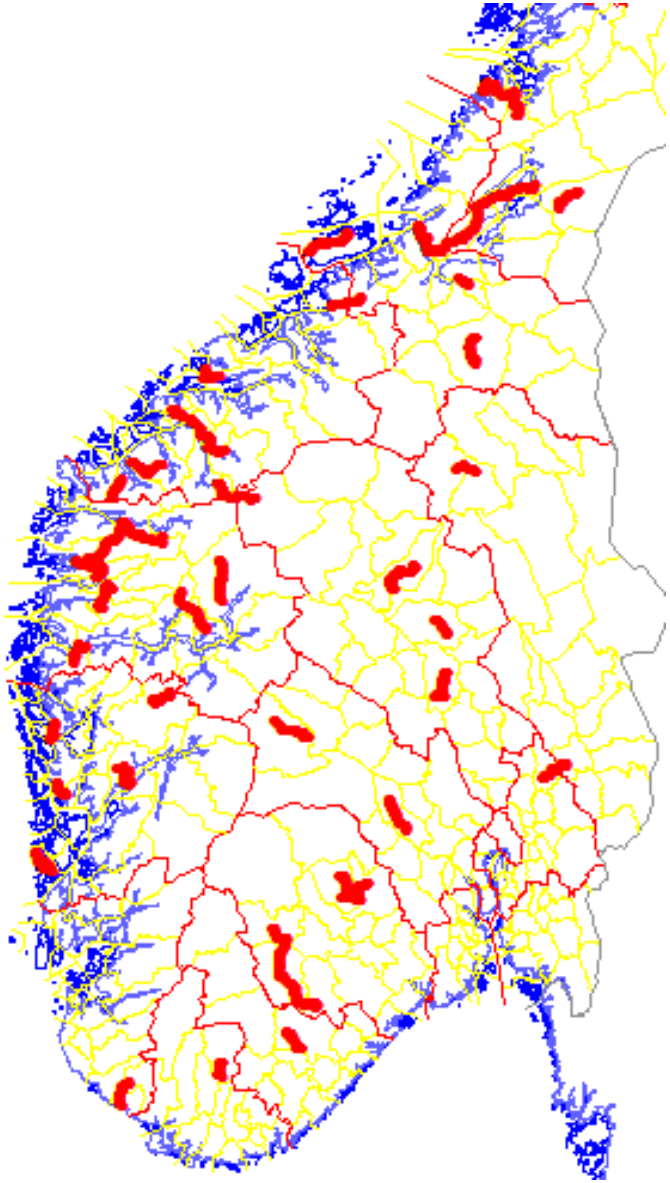
EXTENSION OF THE LEVELLING NETWORK

2008 - 2010

More GPS/levelling points

New lines into areas with no precise levelling

Yearly production of 450 – 500 km



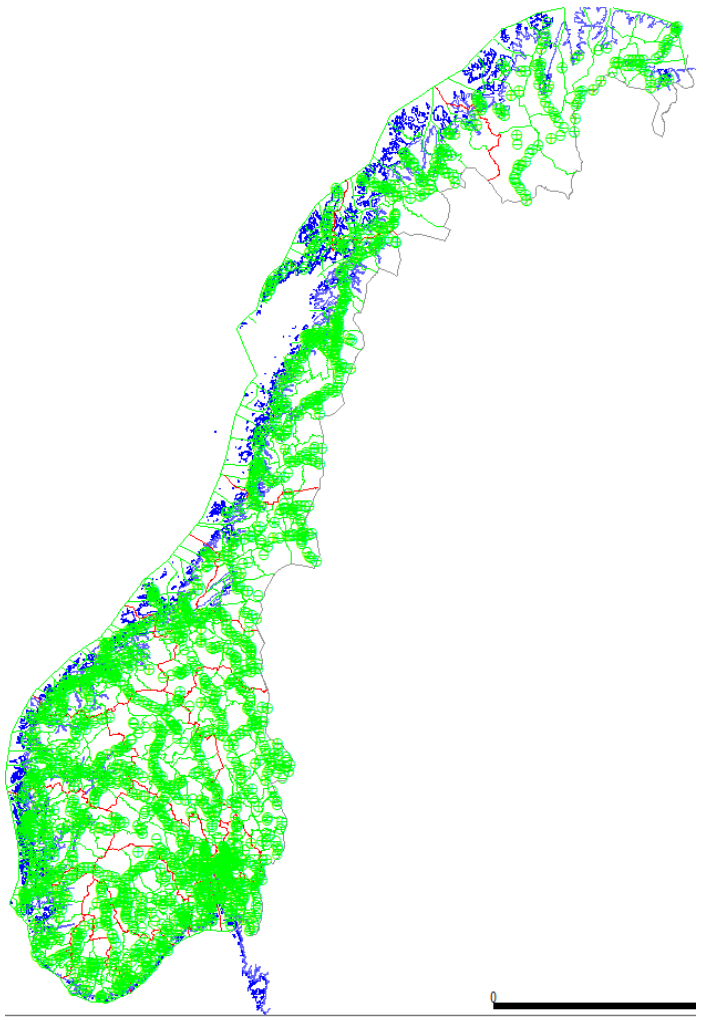
GPS/LEVELLING POINTS

Connection between geometrical and geophysical reference frame

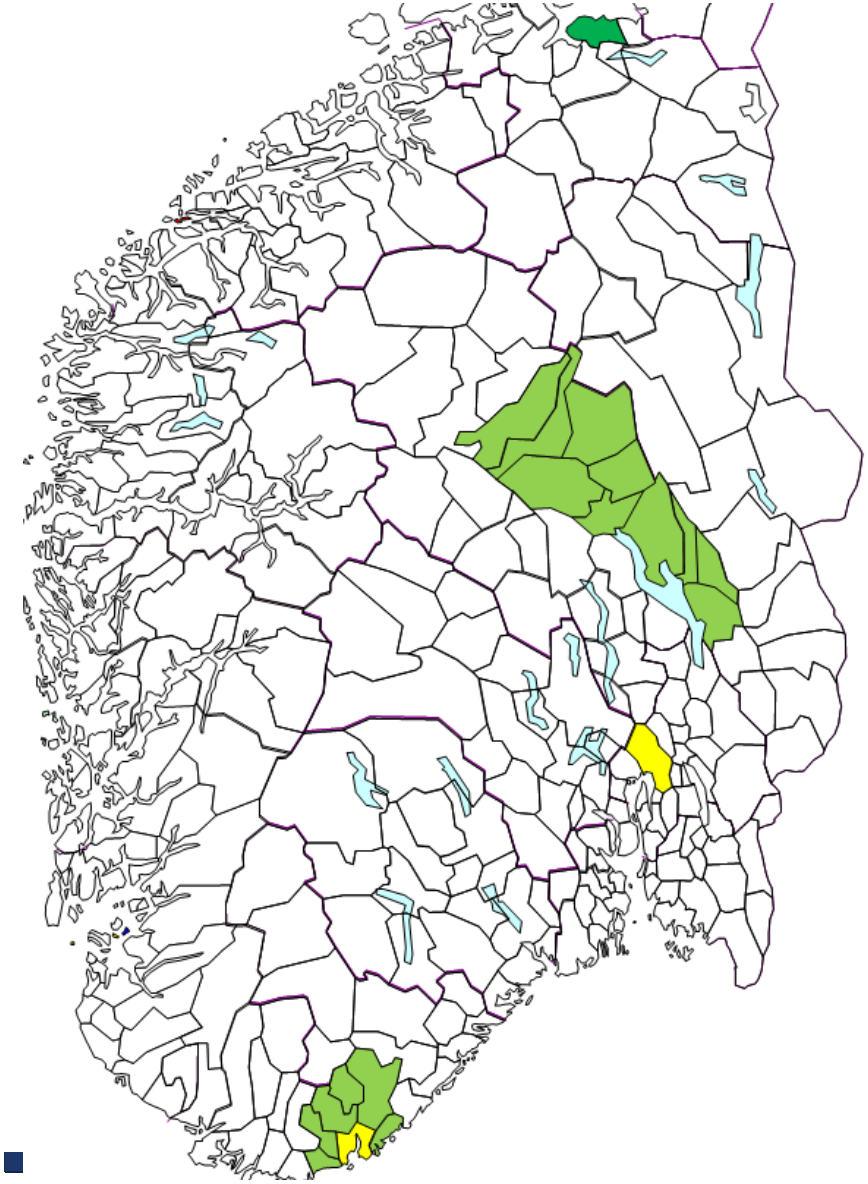
2380 leveled points in the Reference Network
- Validation of gravity based geoid models
- Connection points for Height Reference Models

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

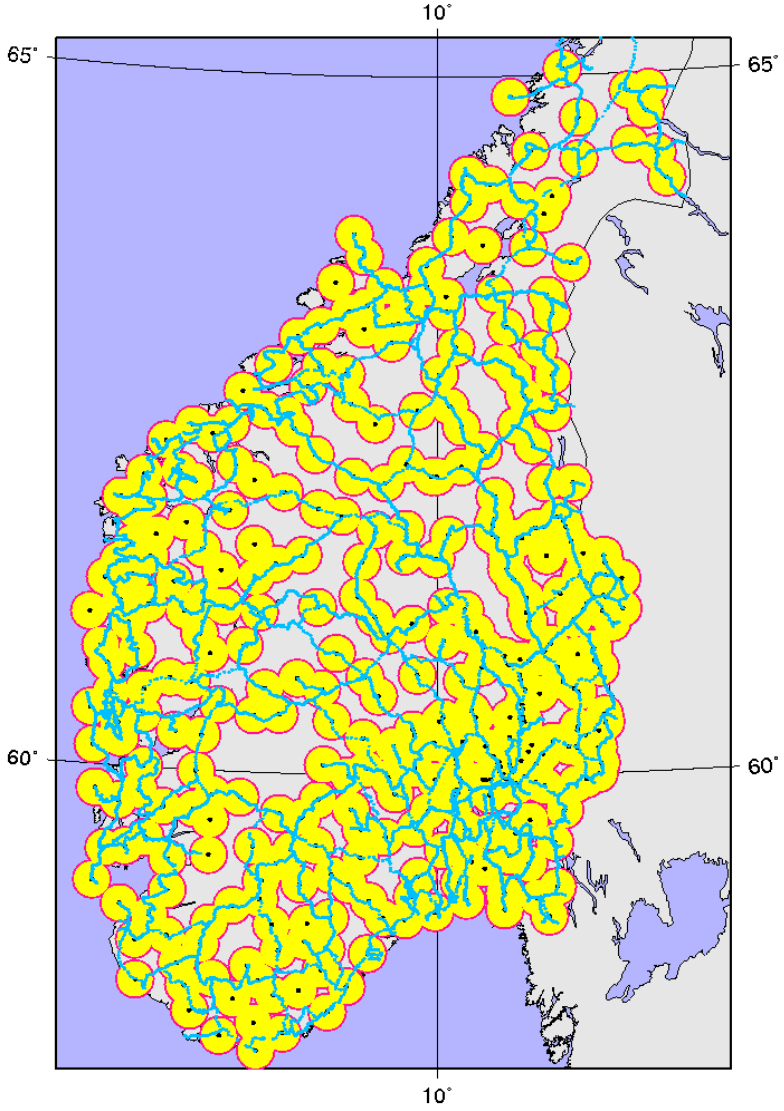
Changed to NN2000	(1)
Will change this year	(16)
Project running	(2)

NORWEGIAN MAPPING AUTHORITY

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, 1st - and 2nd order network
- Official ellipsoidal heights will be changed to IGS05N transformed to EUREF89.



Thank you for your attention!