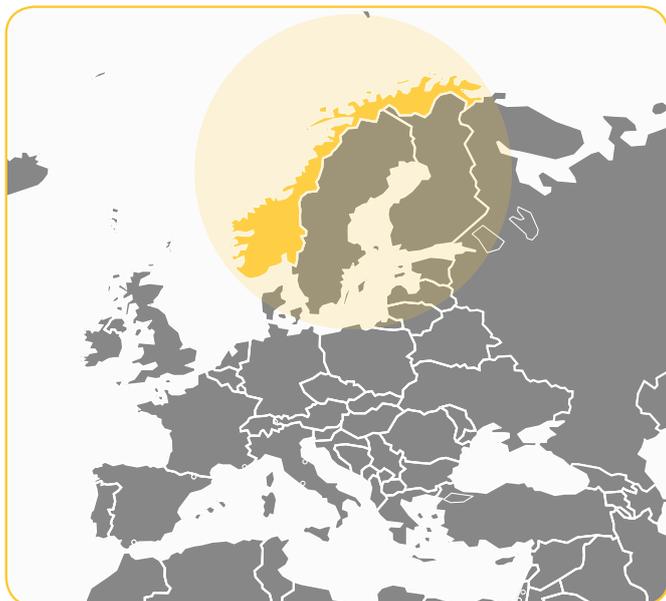


GROUND MOTION MONITORING IN NORWAY

What it is about

Norway is a country which has been formed by glaciers leaving steep mountainsides and deep valleys filled with moraines – especially near the coast. This landscape gives rise to rockslides (the cause of several disasters in Norwegian history) and slipping land. The Norwegian Geological Survey (NGU) has created a new service called InSAR Norway to help monitor the ground

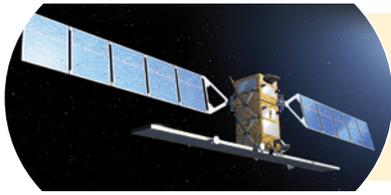
instability using satellite data. The Norwegian Public Roads Authority (NPRA) has started using this service to help identify and understand where ground motion can impact on road construction. Knowing the risk and causes of movement allows for more stable roads and tunnels leading to many benefits for Norway.



What we found

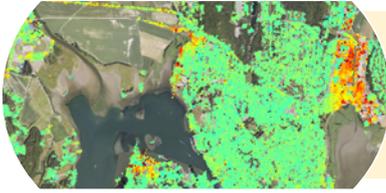
- InSAR Norway has been developed by NGU supported by the Norwegian Space Agency. It is used to help monitor rockslides and by the road, rail, and other public authorities for mapping and monitoring of infrastructure subsidence.
- Highly precise (of mm accuracy), high resolution (metre-scale measurement grid) and large-scale measurements of ground or infrastructure movements are provided through the mapping service.
- The generation of a map that monitors precisely ground motion over the entire country is only possible through the use of satellite data. InSAR Norway's free and openly available data allows citizens, businesses the government to innovate and develop a new understanding of their country.

GROUND MOTION MONITORING IN NORWAY



The Satellite Data

Copernicus Sentinel-1 provides free-of-charge frequent, all-weather, day-and-night C-band radar images.



The Service Provider

InSAR Norway is developed and maintained by the NGU - supported by NORCE and PPO Labs. NORCE's training of people for InSAR Norway has produced highly-skilled workers in the local industry. The use of helicopters to scout for potential landslides can be reduced.



The Primary User

The NPRA (Statens vegvesen) is making use of InSAR Norway in their planning, design, building, and maintenance of Norway's roads. This allows better informed construction related policies and regulations.

€2.43m - €4.9m pa



Tertiary Beneficiaries

Road construction and engineering companies, such as Multiconsult, Skanska AB, and the Norwegian Geotechnical Institute benefit from better planned and more efficiently executed projects.

€10k - €40k pa



End User Beneficiary

All road users and citizens can reap the benefits of having fewer road closures and safer roads, with reduced risk of landslides and tsunamis impacting lives and properties.

€1.35m - €3.78m pa



Total benefits

Economic



€3.8m - €8.7m pa

Environmental



Innovation



Regulatory



Science & Tech



Societal



About the project

Through a series of case studies, EARSC aims to gather quantitative evidence that the usage of Copernicus Sentinel data provides an effective and convenient support to various market applications. These studies are undertaken in the

frame of the project "Assessing the detailed economic benefits derived from Copernicus Earth Observation data within selected value chains: a bottom-up study survey", under an assignment from the European Space Agency.

Download the full report from the project website



<http://earsc.org/sebs>

