

Finland

National Land Survey of Finland

New research and roadmap strengthens GNSS security in Finland

“GNSS interference has become a considerable impediment in Finland. Interference hampers airborne image and lidar missions and causes therefore considerable economic loss. GNSS resilience and preparedness must be strengthened due to the increasing amount of GNSS interference and the security and financial risks it causes for societies and business. This challenging task requires more scientific research and continuous international cooperation.”*

Pasi Patrikainen

Director General,
National Land Survey of Finland

Finland is taking a proactive, research-driven approach to strengthening GNSS security by assessing current vulnerabilities and outlining practical steps to improve signal resilience across both manned and unmanned air operations.

The National Land Survey of Finland (NLS) has prepared a comprehensive report – GNSS security and resilience in Eastern Finland – presenting methods to improve the safety and resilience of satellite navigation along with alternative positioning methods. The report also examines the perspectives of both manned and unmanned air traffic in the development of tolerance and remedies for GNSS jamming. It emphasises the need to improve the situational awareness on the availability and quality of GNSS signal and further research.

The safe and reliable use of positioning is one of the research themes of the Finnish Geospatial Research Institute (FGI) of the NLS, which has numerous ongoing national and international projects focusing on GNSS resilience, including a postdoc position focused on the subject.

Researchers are also developing and testing the detection of GNSS interference and how to mitigate the harm it causes. The project was featured in Inside GNSS. In spite of advances in positioning technologies, existing aviation navigation aids will remain critical for operational continuity.



More information:

<https://helda.helsinki.fi/items/af07934a-e939-4f92-ba55-9ff4dcc1d7f6>

Finnref GNSS base station in Joensuu, Finland. A total of roughly 50 base stations for satellite positioning have been placed across the country. Together, they form the FinnRef network, which forms the basis of Finnish reference systems and provides accurate geospatial data for daily needs in society.



*Global Navigation Satellite System

Benefits

- Sets out next steps using up-to-date insights on the status of GNSS security.
- Strengthens GNSS preparedness with latest research.
- Raises awareness of GNSS security among policy makers.