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SPACE GEODESY- THE TECHNIQUE THAT ENABLES EARTH OBSERVATION

Abstract

Space geodesy is the discipline that makes it possible to observe changes on the earth using satellites. Without space geodesy, it is not possible to operate satellites in space with the precision needed to understand how climate change is impacting the planet. Among other processes, space geodesy enables us to measure changes in sea level and increase our knowledge of the earth's mass balance, including the evolution of the cryosphere. The associated infrastructure requires a strong and extensive global cooperation. A long-term and fruitful collaboration between space agencies, universities, mapping agencies and other partners has been essential for maintaining a global network of geodetic observatories and data services, enabling today's contributions to the projection of future climate scenarios. NASA and the Norwegian Mapping Authority have collaborated closely for more than three decades, for the design and operation of a ground station in Ny-Ålesund at Svalbard. The station is an important part of the global ground infrastructure for space geodesy. And now, at a time when climate change is occurring in the northern regions at rates up to several times faster than global average, the station is more important than ever. In 2014, work began to modernize the station. Why is this so important and what are the ambitions for the future in this area?