

SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)
Integrated Applications End-to-End Solutions (1)

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SPACE & THE ARCTIC: WHEN LOOKING FROM ABOVE CAN HELP DOWN-TO-EARTH
PROBLEMS

Abstract

If there is one area on Earth where global warming is tangible, it is the Arctic. Mean temperatures at the pole increase faster than elsewhere and many effects can already be observed, such as the reduction of thickness and extent of summer sea ice, or the melting of the permafrost. These changes lead to new challenges and opportunities, which range from the opening of new maritime routes, the threat to fragile ecosystems and the traditional life of the native inhabitants, to greater use of natural resources in the Arctic regions.

Yet the Arctic features large, remote areas with limited accessibility, low population densities, and harsh living conditions. When needs for more observations, reliable communications and navigation means increase, space systems may provide an increasing part of the solution.

With satellites on orbits compatible with a view on the Arctic (polar or highly elliptical orbits), space systems have the potential to support enhanced monitoring of the Polar region, telecommunications, navigation or security and the Agency's programmes such as ENVISAT provide already a significant contribution to e.g. ice monitoring.

With an increasing attention from the European Union to the Arctic, and following a workshop held under the Swedish presidency of the EU, the European Space Agency is currently analysing the issues at stake and possible extensions to its current programmes, such as Navigation, Earth observation and Telecommunication programmes, including the necessary technology developments and international cooperation where feasible. The outcome of the analysis and proposed activities will be presented.