

CryoLand

GMES Service Snow and Land Ice

OBSERVING CHANGES IN ICE

Climate change has an enormous impact on glacier ice and snow cover based environments. Rising temperatures lead to retreat of snow and ice, with dramatic effects on the surrounding environments. Taking on these challenges, CryoLand develops new services for monitoring the extent and state of snow cover, glacier ice and lake/river ice.

Snow and ice melt plays a crucial role for water discharge, being one of the most vital elements of Earth's water cycle. During the past two decades, the importance of monitoring these phenomena has become increasingly clear. Indeed, reliable intelligence on snow accumulation and depletion will provide a valuable tool for assisting the effective management of water resources.

Moreover, changes in winter snow-cover have a number of socio-economic impacts. The impact on winter tourism and skiing resorts from changes in snow cover and snow depths is one critical example of such effects.

The project CryoLand responds to these new challenges, providing a set of tools for spatially detailed observa-

tions of snow cover and glaciers based on satellite data, integrated with ground based measurements. In doing so, the project facilitates automatic processing of critical environmental data. CryoLand services thereby assist European public authorities and affected industries in dealing more effectively with the climate change challenge by means of fast and cost effective remote sensing techniques for snow and ice monitoring.

CryoLand services adhere to INSPIRE guidelines and use data from GEOSS satellite images.

The project brings together relevant players in the field that hold valuable experience in operating pre-operational snow and ice services. Indeed, CryoLand is set to establish a pioneering snow and land ice service, which will provide important information also at the benefit of the water and hydropower sector.



THOMAS NAGLER
IS PROJECT COORDINATOR

QUESTIONS & ANSWERS

What do you want to achieve with this project?

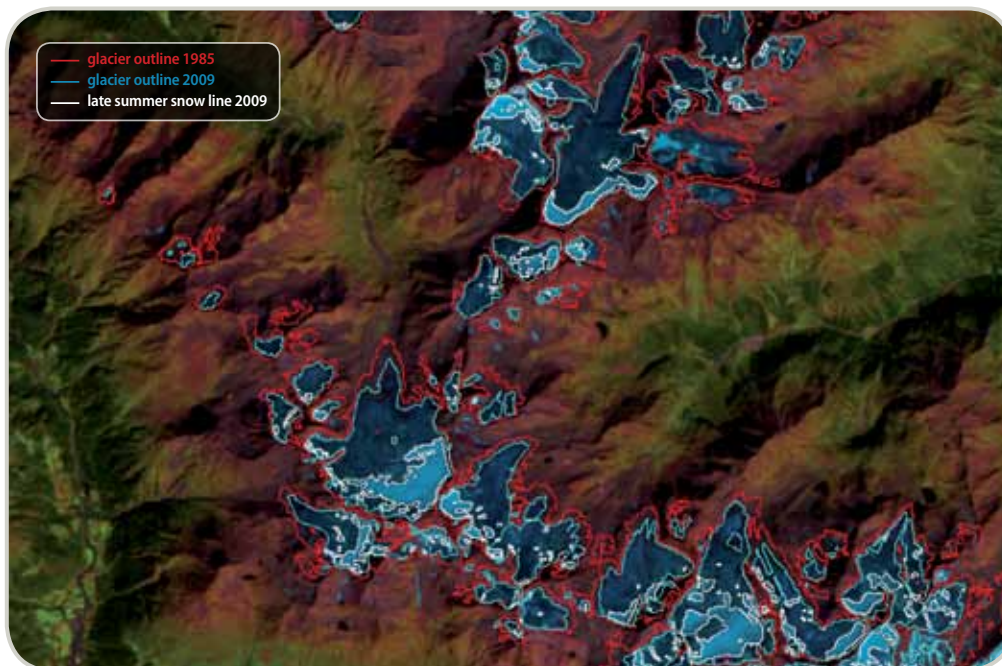
CryoLand will be a service for geospatial products on seasonal snow, glaciers, and lake and river ice derived from Earth observation satellite data. Advanced information technology will be applied to process and distribute snow and ice products in near real time, tailored to the customer needs.

Why is this project important for Europe?

Snow cover and glaciers are valuable resources, supplying many parts of Europe with water for human consumption, agriculture, hydropower generation and other economic activities. Lake and river ice is also important for water management, hydrology and traffic.

How does your work benefit European citizens?

The CryoLand services to be developed in the project are not only of interest for users at national level, but also intend to support EC policies related to water supply and quality, renewable energy, agriculture, traffic, flood hazards, and climate change.



Extent of glaciated areas in Stubai Alps derived from satellite data © CryoLand

CryoLand aims to develop near-real-time sustainable services for monitoring snow and land ice.

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LIST OF PARTNERS

- Daithi O' Murchu Marine Research Station Ltd., Ireland
- ENVEO Environmental Earth Observation IT GmbH, Austria
- EOX IT Services GmbH, Austria
- Suomen Ymparistokeskus, Finland
- Ilmatieteen Laitos, Finland
- Kongsberg Satellite Services AS, Norway
- Norsk Regnesentral Stiftelse, Norway
- Northern Research Institute Tromso AS, Norway
- Administratia Nationala De Meteorologie R.A., Romania
- Gamma Remote Sensing Research and Consulting AG, Switzerland
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PROJECT INFORMATION

GMES Service Snow and Land Ice (CryoLand)
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