

# Polar Infrastructures and Scientific Platforms

European assets in the Arctic and Antarctic regions are a very substantial resource with the potential to be used even more effectively.

These polar research infrastructures and platforms represent significant investments made by individual nations and by Europe as a whole and must be available for the most relevant and highest quality research, including monitoring.

This requires:

- a) **transnational access programmes** allowing involvement of all relevant European scientific research and development communities,
- b) **better coordination** between European partners to maximise use of the assets, to allow multiple-platform missions, and to optimize the opportunities for people and equipment,
- c) **joint funding** for basic maintenance, coordination and movements to and from Polar Regions.

## KEY ISSUES

There are today a number of European and international initiatives that work to link resources and improve coordination of polar activities. However, we need a long-term overview and assessment of gaps allowing Europe to allocate resources addressing the most urgent issues. Below is a summary of identified needs that Europe should address, highlighting issues to be addressed at the onset of Horizon 2020.

- I. **Ships and deployed equipment:** Building on the EUROFLEETS 2 project, the ARICE initiative is addressing the need for **access to the High Arctic, using existing European heavy icebreakers**. With transnational access programmes, having ships in these remote areas will allow for important environmental monitoring, top-level basic research, deployment of equipment and surveying activities. When the mechanisms for such international coordination have been developed, they need to be **applied for similar purposes in the Antarctic**.





2. **Stations and vehicles:** Building on the successful INTERACT programme, Europe is well poised to spearhead the inclusion of all major Arctic research stations into a long-term circumpolar programme for research and environmental monitoring. A similar scheme should be created for the coordination of European research stations in Antarctica. This would provide transnational access, while creating synergies for cost-effective scientific exploration, transportation and resupply activities.



3. **Aircraft and helicopters:** There is considerable experience from operating the international DROMLAN air transport network in East Antarctica and those flight collaborations facilitating flight access through the Antarctic Peninsula and West Antarctica. In contrast there has been very little international flight coordination in the Arctic Region and a limited pool of pilots with experience of ice landings but there are many runways across the Arctic to facilitate a future network. Europe has invested in a fleet of research aircraft which could form the European contribution to significantly enhanced coordination with other polar nations and more transnational use of flight missions.

4. **Platforms for innovation and development:** Research infrastructures can provide stimulating settings to **drive forward innovation**, and can play an important role as **early adopters** of new technologies. Such technologies include for example miniaturized sensors, efficient small and large power supplies, secure communications, fuel-efficient vehicles, robotics and automated measuring equipment.



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