

## Integrating Activities for Advanced Communities



### D3.12 – Station Catalogue, 3<sup>rd</sup> edition

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<b>PU</b>	Public	X
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	
<b>RE</b>	Restricted to a group specified by the Consortium (including the Commission Services)	
<b>CO</b>	Confidential, only for members of the Consortium (including the Commission Services)	

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## Publishable Executive Summary

This is the third edition of the INTERACT Station catalogue. It has been developed and refined by station managers since the first edition in 2012. Due to a steadily increasing number of stations, the printed version of the catalogue has been reduced in size to allow room for all 86 stations included in the network. The full version of the catalogue is now available on an online platform called INTERACT GIS - <https://interact-gis.stage.its.umu.se/>.

The template for facts about the stations and surrounding environment have been developed further in cooperation with EU-PolarNet, EUROFLEETS and the Council of Managers of National Arctic Programmes - COMNAP to work towards common standards for infrastructure descriptions.

The online edition of the catalogue has search functions for climate and environmental features, research metadata, publications, and includes an online application system for some stations. The system will allow scientists to search for specific facilities, data (or data gaps) or environmental features of relevance to their study, and thus be a useful tool for everyone working out of research stations in the Arctic and neighbouring boreal and alpine regions.

As the lay-out version of the updated Station Catalogue is too big (500 GB) it is not included in this report but can be downloaded from the INTERACT's web site: <https://eu-interact.org/publication/>

## 1. The development of the INTERACT Station Catalogue

The INTERACT Station Catalogue was developed within the INTERACT Station Managers' Forum, a group of station managers, now representing 86 arctic and mountain research stations. The Station Managers' Forum provides a platform for exchange of information between stations in the network and between managers and other partners of INTERACT.

The INTERACT Station Catalogue demonstrates the unique characteristics of each station as well as the large diversity of stations in the entire network. We hope that the standardised data of station characteristics provides a helpful opportunity for researchers, institutions, organisations and other stakeholders to identify stations that suit their specific needs in terms of environmental conditions, facilities or services offered.

The INTERACT network includes stations in Scandinavia, Svalbard, Russia, the United States of America (Alaska), Canada, Greenland, Iceland, the Faroe Islands, the United Kingdom (Scotland), and stations in several mountain areas of Central Europe and Kyrgyz Republic (Figure 1). The stations are situated in different climatic zones, and as such they cover significant latitudinal and altitudinal gradients, as well as thresholds. They therefore provide access to a great variety of environmental and geophysical conditions.



*Figure 1. The 86 Stations included in the updated Station Catalogue are located in all Arctic countries and adjacent high alpine areas.*

The INTERACT stations include sites extending from extremely cold and dry high arctic sites to relatively warm and wet subarctic sites. Many stations are located where thresholds occur in the environmental space, e.g. infrastructures located near the zero- degree mean annual temperature isotherm can expect severe changes in the cryosphere with increasing temperatures. The main scientific disciplines practiced at the stations include climatology, geo-sciences, biology, ecology, cryology, and to some extent also anthropology.

The INTERACT stations range from simple city-based housing facilities with research instrumentation in the field, through small and remote cabins, to larger field-based research infrastructures housing up to more than 100 visitors at a time. Facilities and services offered at the stations vary considerably from station to station and are described for each station in this catalogue. The accessibility to the different stations in the network also varies greatly. Some stations can be reached by public transportation from a nearby town or airport. In contrast, the charter of a boat, an airplane, or a helicopter is required to reach others, or you have to endure a long and healthy hike.

## 2. The updated INTERACT Station Catalogue

The updated station catalogue that presents the INTERACT Terrestrial Research Infrastructures in arctic and mountain areas of the Northern Hemisphere and an associated INTERACT GIS system provides a one-stop shop for scientists and stakeholders looking for suitable terrestrial field bases for their research activities.

### 2.1. Printed version

Due to a steadily increasing number of stations, the printed version of the catalogue has been reduced in size to allow room for all 86 stations included in the network. The new slimmer version includes text sections and selected facts for each station as illustrated in Figure 2.

Stations presentations are grouped according to country, and the numbering starts at longitude 0, moving north to south through Europe and then eastwards country by country. This will ease identification of station locations when knowing the number of the station. Each station is presented on two pages including text and selected facts about the station as well as representative photos of the station and its surroundings.

The map (inside of cover) provides an overview of location and key climate and environmental conditions for all INTERACT stations. We hope that this will be a useful guide that will help the user

to identify potential suitable stations – to be explored in more detail by consulting the INTERACT GIS (see below) and stations’ websites.



Figure 2. An example of the updated presentations of the stations. Here a presentation of the Czech Arctic Research Station on Svalbard.

The printed version of the updated station catalogue will be available on INTERACT’s web site: <https://eu-interact.org/publication/>

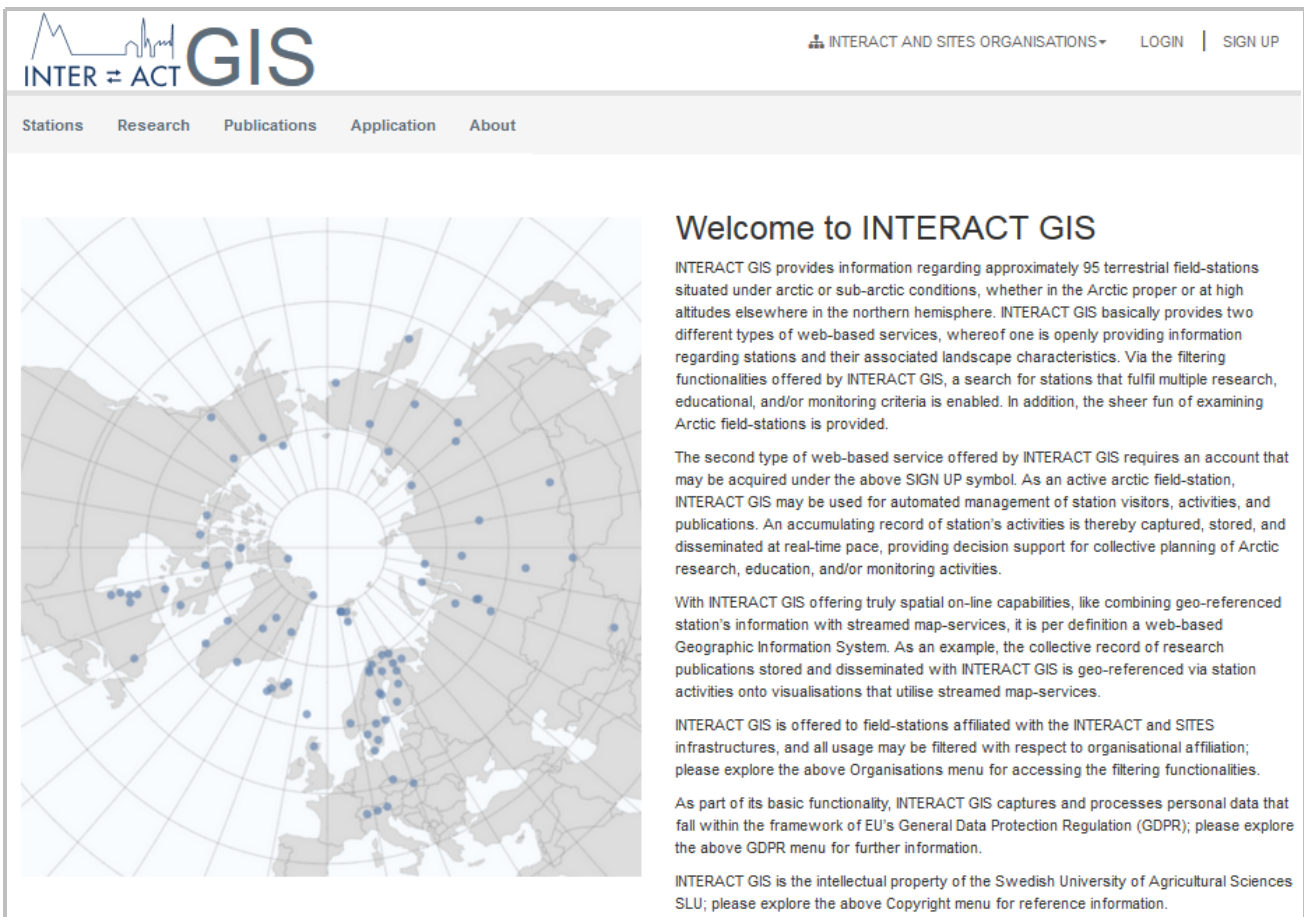
## 2.2. Online version – INTERACT GIS

The online edition of the INTERACT Station catalogue (<https://interact-gis.stage.its.umu.se/>) includes full text descriptions and all facts about the station, its facilities, monitoring efforts and natural environment. This system includes a search function allowing scientists to search for specific facilities, data (or data gaps) or environmental features of relevance to their study (Figure 3).

The online version of the catalogue allows station managers themselves to edit the information about their station. This means that the information will be updated regularly and thus always function as an up-to-date inspirational tool for scientists looking for the most appropriate station/stations for planning and designing proposed research or monitoring activities.

INTERACT GIS includes the following information:

- Station descriptions (texts)
- Facts about the station (ownership, contact details, facilities, etc.)
- Environmental conditions and natural features
- Scientific disciplines and monitored parameter groups
- Research projects, past and present
- Publications



**INTERACT GIS**

Stations Research Publications Application About

## Welcome to INTERACT GIS

INTERACT GIS provides information regarding approximately 95 terrestrial field-stations situated under arctic or sub-arctic conditions, whether in the Arctic proper or at high altitudes elsewhere in the northern hemisphere. INTERACT GIS basically provides two different types of web-based services, whereof one is openly providing information regarding stations and their associated landscape characteristics. Via the filtering functionalities offered by INTERACT GIS, a search for stations that fulfil multiple research, educational, and/or monitoring criteria is enabled. In addition, the sheer fun of examining Arctic field-stations is provided.

The second type of web-based service offered by INTERACT GIS requires an account that may be acquired under the above SIGN UP symbol. As an active arctic field-station, INTERACT GIS may be used for automated management of station visitors, activities, and publications. An accumulating record of station's activities is thereby captured, stored, and disseminated at real-time pace, providing decision support for collective planning of Arctic research, education, and/or monitoring activities.

With INTERACT GIS offering truly spatial on-line capabilities, like combining geo-referenced station's information with streamed map-services, it is per definition a web-based Geographic Information System. As an example, the collective record of research publications stored and disseminated with INTERACT GIS is geo-referenced via station activities onto visualisations that utilise streamed map-services.

INTERACT GIS is offered to field-stations affiliated with the INTERACT and SITES infrastructures, and all usage may be filtered with respect to organisational affiliation; please explore the above Organisations menu for accessing the filtering functionalities.

As part of its basic functionality, INTERACT GIS captures and processes personal data that fall within the framework of EU's General Data Protection Regulation (GDPR); please explore the above GDPR menu for further information.

INTERACT GIS is the intellectual property of the Swedish University of Agricultural Sciences SLU; please explore the above Copyright menu for reference information.

Figure 3. The updated Station Catalogue is also available online in INTERACT GIS with search functionalities to ensure that INTERACT's users can find the optimal research station to carry out their research.

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As part of the development effort, the operative platform has been changed into the latest available technology, facilitating INTERACT GIS to operate in accordance with EU's General Data Protection Regulation (GDPR) safety standards.

#### *Connecting with INTERACT GIS*

Anyone can use the system to explore stations in the network for fun or for identifying relevant stations for their work.

The INTERACT GIS also offers an application module for stations, where users can apply for access to the station directly. The number of stations using this feature will likely increase in the future, thus also making searchable project metadata part of the system. To apply for access online, you simply need to visit [www.interact-gis.org](http://www.interact-gis.org) as a public user and get an account using the Sign-up menu available at the upper-right corner of the user interface.

Until a proper management organisation has been developed for the system (an upcoming INTERACT Deliverable), the contact regarding system developments and management should be directed to: INTERACT GIS at [interact-gis@slu.se](mailto:interact-gis@slu.se).