

General requirements for INTERACT

Context of general requirements in INTERACT

INTERACT is a circumpolar network of 76 terrestrial field bases in northern Europe, Russia, USA, Canada, Greenland, Iceland, the Faroe Islands and Scotland. INTERACT's main objective is to build capacity for identifying, understanding, predicting and responding to diverse environmental changes throughout the wide environmental and land-use envelopes of the Arctic. Together, the INTERACT stations host many thousands of scientists from around the world working in multiple disciplines, and INTERACT collaborates with many research consortia and international research and monitoring networks.

See <http://www.eu-interact.org>

The main information provided is the metadata of projects at the stations. Monitoring data is so far not accessible to the public. The data owner is the principal investigator (PI). It is a platform for 67 research stations, a network of the 67 managers to discuss best practices, provide transnational access to the research, metadata catalogue, metadatabases concerning the practice and the monitoring. 80% of the information is kept at the station level.

The software and computational environments are located at the University of Uppsala.

NORDGIS (<http://www.nordgis.org/sites>) is a geographic metadata information system at the moment holding information for nine SITES stations including three of the INTERACT community – its basic functionality is to collect metadata regarding the activities performed at a selection of Nordic field-stations, and to disseminate the information for station administration, public outreach, and inclusion in other metadata repositories. Its current focus is set on research and monitoring regarding high-latitude environments. NordGIS duplicates station information kept at various websites, but intends to keep this information far beyond the lifespan of individual projects and project websites. The unique constituent of NordGIS is not station information but its ability to provide basic support in the management of field-stations while harvesting, storing, and sharing stations activities metadata. It is planned to extend NordGIS to all INTERACT stations within INTERACT II (starting from 2017).

It is a system with considerable depth, offering extensive tools for station administration including applications for permission to visit stations and management of publication records. It is a truly networked system, allowing the public to query research and monitoring activities across any selection of stations and disciplines. It is due to vivid development, and will be equipped with extensive support for disseminating monitoring data products, sharing material resources across stations, and pointing from metadata towards repositories of actual research data. The number of stations expected to join the system is large, beginning with the nine Swedish field-stations that constitute the SITES consortium (www.fieldsites.se/en/), and continuing with an offer to all the stations associated with the INTERACT infrastructure project (www.eu-interact.org). The scientific aim of NordGIS is to offer information regarding activities at stations for station managers to consider as decision support when new activities are planned.

Projects apply to use the infrastructure of INTERACT at the stations, we catch that information and integrate it in the platform. The responsibility of the users is to provide information about the station and the project. As a PI one has to apply for activities prior before performing them. Once accepted you have to adhere to the standards implemented. There is a hierarchical system administration policy where the super-system administrator can add station and provides the privileges.

Metadata about research projects and monitoring project are freely available.

All the equipment is owned by the stations. They are already providing instrumentation to ENVRIPlus, many of them are involved in other RI. INTERACT scientists are involved in many international initiatives. There is a combination of programming platforms in use: Open layers java script libraries, PostGreSQL with PostGIS and at the server side UMNmapserver engine, apache webserver and a linux server with unlimited server resources and professional server hall. There is a high level of security of personal data. There is open access to everyone but if you register at the PI-level you can access much more - read the entire database and generate lists (freely compile a set of data from the database and save it).

INTERACT is keen on working on homogenization with other infrastructures. The most important bilateral benefit of NordGIS vs ENVRIPLUS are the broad European standards exposed to NordGIS, as well as the grass-root requirements exposed to ENVRIPLUS.

INTERACT is open for new solutions if there is any advantage.

Standards on how to turn primary data into data products have to be adopted. Sharing actual data needs in a first step metadata about them. The station management compiles all the publications produced annually, links them to the project and georeferences them in NordGIS. A challenge is to connect this publication database with the central publication repositories by bibliographic standards.

Summary of INTERACT general requirements

Detailed requirements

A. Generic questions (for all topics)

1. What is the basic purpose of your RI, technically speaking?

- a. Could you describe a basic use-case involving interaction with the RI?

Network of research stations in the Arctic, mission: will be sent

- b. Could you describe how data is acquired, curated and made available to users?

The main data metadata of projects at the stations. Not possible to access the monitoring data. Monitoring data of research PI data owner, platform 67 research stations, network of the 67 managers of the research stations, discuss best practices provide transnational access to the research, metadata catalogue, metadatabases, concerning the practice and the monitoring. Homepage www.euinteract.org. Org, left side different publication, interact station catalogue, metadata. Estimate of 80% at the station.

c. Could you describe the software and computational environments involved?

University in Upsala, projects apply to come to the stations, we catch that information and integrate it in the platform. Contact by Morton

d. What are the responsibilities of the users who are involved in this use case?

Information about the station and the project,

2. What datasets are available for sharing with other RIs as part of ENVRIplus? Under what conditions are they available? Metadata about research projects and monitoring project, freely available.

3. Apart from datasets, does your RI also bring to ENVRIplus:

- a. Software? In this case, is it open source?
- b. Computing resources (for running datasets through your software or software on your datasets)?
- c. Access to instrumentation/detectors or lab equipment? If so, what are the open-access conditions? Are there any bilateral agreements?

All the equipment is owned by the stations. They are already providing instrumentation to ENVRIPlus, many of them are involved in other RI

d. Users/expertise to provide advice on various topics?

A large number of international – involved in a lot of international initiatives

e. Access to related scholarly publications?

Publishing story of arctic science...: send the title, interactive film

f. Access to related grey literature (e.g. technical reports)? On the homepage

4. What plans does your RI already have for data, its management and exploitation?

a. Are you using any particular standard(s)?

i. Strengths and weaknesses

b. Are you using any particular software(s)?

i. Strengths and weaknesses

c. Are you considering changing the current:

i. standard(s)

ii. software

iii. working practices

as part of a future plan?

Please provide documentation/links for all the above which apply.

5. What part of your RI needs to be improved in order:

a. For the RI to achieve its operational goals?

For automatically collecting metadata, it is not of all of the stations yet, make sure that all station have the system

b. For you to be able to do your work

6. Do topics [1-6] cross-link with your data management plan

b. If so please provide the documentation/link

7. Does your RI have non-functional constraints for data handling and exploitation? For example: we don't, each station have their own system

- i. Capital costs
- ii. Maintenance costs
- iii. Operational costs
- iv. Security
- v. Privacy
- vi. Computational environment in which your software runs
- vii. Access for scrutiny and public review

If so please provide the documentation/links

8. Do you have an overall approach to security and access? no

9. Are your data, software and computational environment subject to an open-access policy? Metadata are completely open access
10. What are the big open problems for your RI pertinent to handling and exploiting your data? Matter of time, before a half a year, 2 years, ready half a year ago
11. Are you interested in any particular topic [1-6] to discuss in more detail?
- a. If so, would you like us to arrange a follow up interview with more detail questions about any particular topic to be discussed?
12. Optional: If you are not the right person to reply to some questions from the above, please suggest the right person to contact from your RI for those questions.

Formalities (who & when)

Go-between	@Barbara Magagna
RI representative	@Morten Rasch
Period of requirements collection	@201510
Status	gathered