



Minutes of INTERACT

# Station Managers' Forum V

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Photo: Marie Frost Arndal

**10-11 September 2019**  
**Svartberget Research Station, Vindeln, Sweden**

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## Executive summary

The 5<sup>th</sup> Station Managers' Forum (SMF) meeting in INTERACT II was held in Vindeln, Sweden, next to Svartberget Research Station. 42 INTERACT stations were represented at the meeting along with one Antarctic station and representatives from a number of external partners and collaborators: CAFF, GTN-P, IPA/TSP/CALM, GCW, WGMS, T-MOSAic, NEON and Batelle. 47 participants altogether.

The INTERACT SMF is a platform for dialogue for internal knowledge exchange between station managers, and SMF tasks and other workpackages. The meeting included sessions on SMF workpackage tasks, sessions where other WPs requested input from station managers, station presentations and an open floor for sharing of information and experiences of research station management between SMF participants.

Generally, tasks are developing according to the time plan and all deliverables of the second reporting period has been met.

## Welcome and introduction

By Morten Rasch, Chair of INTERACT Station Managers' Forum, University of Copenhagen

The chair of INTERACT Station Managers' Forum, Morten Rasch, welcomed all participants to the meeting in Vindeln (near Svartberget Research Station). After a short introduction to the agenda, all participants introduced themselves.

Morten gave a short description of the Station Managers' Forum in the new INTERACT III application with 54 partners and nine work packages addressing six societal changes.

## Task 3.5 Reducing environmental impact of station management and field activities

By Robert Henry, International Polar Foundation/Princess Elisabeth Antarctic Station

Robert Henri introduced the new report on reducing environmental impacts at Arctic and northern Alpine research stations. The International Polar Foundation operates the Antarctic Research Station 'Princess Elisabeth'. The station was built in 2007-2008 and can accommodate up to 50 people. The station was the first zero emission station in Antarctica (station operations, not counting transport), building on e.g. passive energy, reduce, reuse and automated system principles. The report gives recommendations and tools on how to minimize a research station's environmental footprint with examples from "Princess Elizabeth", including sustainable energy solutions, water treatment and garbage and waste handling. Next phase will be to set up an online INTERACT platform to share ideas, new technologies, funding opportunities and experiences from the INTERACT stations for knowledge exchange.

Link to report: <https://eu-interact.org/app/uploads/2019/07/D3-11.pdf>

## Task 3.2 Awareness of the scene - Cryosphere theme

Permafrost by Margareta Johansson

Margareta Johansson introduced different permafrost networks:

- International Permafrost Association (IPA) - <https://ipa.arcticportal.org/>
- Global Terrestrial Network of Permafrost (GTN-P) – <https://gtnp.arcticportal.org/>

- Thermal State of Permafrost (TSP) - <https://ipa.arcticportal.org/activities/gtn-p/tsp/15-tsp.html>
- Circumarctic Active Layer Monitoring Network (CALM) - <https://www2.gwu.edu/~calm/>

All stations in permafrost areas were encouraged to add data from their stations to open access database of the networks. The CALM data are relatively cheap to get (metal probe to measure thaw depths), while the TSP permafrost boreholes require some equipment to drill and install temperature loggers.

Margareta Johansson is the permafrost network ambassador to INTERACT and station managers are welcome to get in touch to explore potential for contributing to above organisations/networks.

### Glaciology by Per Holmlund

Per presented the World Glacier Monitoring Service (WGMS - <https://wgms.ch/>) and Global Cryosphere Watch (GCW - <https://globalcryospherewatch.org/>). Glacier science has been internationally coordinated for 125 years, gradually leading to a more formalized cooperation on glacier extent and mass balance measurements. Recent years has seen a small dip in the number of monitored glaciers, but still it is clear that glacier retreat and mass balance decrease has been the name of the game for the past 50 years. WGMS hosts glacier data from all over the world and welcomes glacier data from INTERACT stations. GCW also monitor snow and ice extent. Stations with nearby glaciers, snow cover and sea ice are therefore encouraged to contact WGMS/GCW to learn how stations can contribute and learn what methodological standards are used, required resources and associated workload.

### T- MOSAiC

By Diogo Folhas, T-MOSAiC Secretariat, University of Lisbon

The T-MOSAiC secretary, Diogo Folhas, introduced the T-MOSAiC programme. T-MOSAiC is the “Terrestrial Multidisciplinary distributed Observatories for the Study of Arctic Connections” that will study the terrestrial consequences of Arctic sea ice reduction and climate change. This will be done simultaneously with the MOSAiC expedition (2019-2020) that will study arctic oceanographic and climate change issues. T-MOSAiC has more than ten different Action Groups that currently are developing tasks and discussing outputs. See more at <https://www.t-mosaic.com/action-groups.html>

T-MOSAiC is based on existing data and scientific networks, and stations interested in contributing or joining T-MOSAiC should contact the T-MOSAiC Secretariat. There is a great potential for the stations to play a key role in this collaboration by sharing existing data, contribute with key measurements during 2020, collaborative sampling, etc.

Diogo also mentioned an upcoming call – a new ESA proposal is looking for collaborators/partners within remote sensing (see slide).

INTERACT is represented in the Steering committee (Margareta Johansson) of T-MOSAiC, and several INTERACT persons are involved. Station managers are encouraged to contact the T-MOSAiC Secretariat (Diogo: [diogo.folhas@tecnico.ulisboa.pt](mailto:diogo.folhas@tecnico.ulisboa.pt)) to explore the potential for contributing to this initiative.

### Network Survey

By Terry Callaghan, Elmer Topp-Jørgensen, Jannik Hansen and Olga Morozowa

a) Elmer Topp-Jørgensen (with assistance of Jannik Hansen) introduced the Network survey, where websites of more than 170 networks/organisations (with INTERACT station participation) was thoroughly studied to determine the type of scientific network, if it has a data repository, if it uses standard methodology, what the membership level is, what disciplines and topics they cover, and the geographical coverage.

Network categories were presented and it was agreed that INTERACT should seek to make this an online tool that can show station membership of networks. Scientists working out of a station can represent a station in a network - it need not be the station itself that is a member.

It has been problematic to gather relevant information due to lack of structure/information on network websites see bullet b) below.

A number of network ambassadors were identified at the 2018 Annual Meeting in Russia. Station managers are encouraged to use these ambassadors to explore the potential for contributing to the specific networks before contacting the networks themselves. Furthermore, all stations managers were encouraged to sign up to be an ambassador for a network – a way to help INTERACT colleagues, if someone needs more information about a network. Network ambassadors and their contact details will soon be available on the INTERACT website.

b) Terry Callaghan and Olga Morozowa and other colleagues from the Tomsk State University team have selected random networks and scored them according to how many pages and clicks that were needed to retrieve the relevant information, how long time it took and when the information was last updated. A group of six people categorized the networks, and the recommendations from the team was:

- Basic information needed; contact info, goal, membership
- Design of website should be logical to find relevant information
- Search string may help find relevant information
- Cater for outreach to global community

Websites should also work on mobile phones. Avoid websites with apps as these can take a long time to load in remote areas (for example google maps). A good example of a well-structured website is that of ITEX - <https://www.gvsu.edu/itex/>.

Terry suggested publishing the recommendations, to help networks improve information sharing and outreach.

SMF should continue the efforts to identify network ambassadors and introductions to different networks during the SMF meetings.

### Breather presentation – Uapishka Research Station, Canada, Guillaume Proulx

The presentation is available on the INTERACT website <https://eu-interact.org/presentations-from-station-managers-forum-v/>

### INTERACT GIS

By Tomas Thierfelder (Swedish Agricultural University – SLU), Britta Löfvenberg and Anders Printz (Umeå University)

Thomas Thierfelder introduced the INTERACT GIS – a digital infrastructure to connect stations and scientists. Before the meeting, approximately 20 stations had signed up to use the system. Much work has been done to implement GDPR (EU General Data Protection Regulation) in the system. All stations should use the system in ‘catalogue’ mode that is fully editable for all stations.

Two possible modes to use the system in: 1) Catalogue mode (station catalogue and monitored parameter groups information only) and 2) GDPR mode (project metadata and application module). As the data processor is situated in EU, all stations (represented by the station manager) need to sign a Data Processing Agreement (DPA).

The data processor (The Agricultural University of Sweden – SLU) will pass over the processor role of INTERACT GIS to UMEÅ ITS who will operate the system. A management organization is being developed to take over the management and further development of INTERACT GIS, and SLU/Thomas Thierfelder will act as a consultant as needed in a transition period and maintain the intellectual property rights (but with no influence over system development once the management organization has been implemented).

The total current cost of running the system is 1,600 Euros per year, which should be divided by all the stations in the future - INTERACT will pay the cost for 2019 and the next 4 years (during remaining INTERACT II and during INTERACT III).

Stations that have their own application system should just continue using that, and use INTERACT GIS for station catalogue, research and monitoring information and sharing of project metadata. INTERACT GIS will include a link to stations own application system if they prefer to use this to handle applications.

It was suggested to include national station representatives in the management board due to different national legislative frameworks of relevance to the run of research stations and access to these. The TA has a management board, and it was suggested to look at this board, so there will be coordination between the TA board and the INTERACT GIS board.

It was concluded that the daily management board will come up with a suggestion for a management organisation and related Terms of References. The board must include a representative from the system operator UMEÅ ITS. Management organisation and Terms of References is to be presented at the kick-off meeting for INTERACT III in early 2020, and to be implemented before the end of INTERACT II (September 2020).

Finally, all the station managers had the opportunity to sign up with INTERACT GIS.

### Breather presentation – Sermilik Research Station, Greenland, Morten Rasch

The presentation is available on the INTERACT website <https://eu-interact.org/presentations-from-station-managers-forum-v/>

### WP7 – Implementation of CBMP at INTERACT stations

By Kári Fannar Lárusson, Hólmgímur (Hóddi) Helgason (CAFF/CBMP), Jónína Sigríður Þorlákssdóttir (RIF Field Station)

Kári presented CAFF, the biodiversity working group of the Arctic Council.

The Circumpolar Biodiversity Monitoring Programme (CBMP) is made up of a number of expert groups that have produced monitoring plans for terrestrial, freshwater, coastal and marine ecosystem compartments. In WP7 CAFF/CBMP test the implementation of terrestrial and freshwater monitoring plans at a research station to gain experiences with site based implementation of plans and provide recommendations for INTERACT Stations by describing a stepwise approach to implementation.

CAFF/CBMP sees a huge potential for INTERACT stations to contribute to the implementation of CBMP protocols for components that are of relevance to site based research and monitoring.

Jónína presented the work on implementing an ecosystem monitoring programme at RIF Field Station (Iceland) based on the CBMP monitoring plans. Zackenberg Research Station (Greenland) and CHARS (Canada) guided the process. Not all recommended monitoring elements are implemented fully at RIF due to environmental relevance, available funding and staff capacity. It is important to be pragmatic and adapt implementation to each station and use CBMP plans only as guiding documents.

The work package will over the coming months develop a user manual for CBMP implementation at INTERACT Stations. It will be published online to allow for regular updates.

### Task 3.3 First Class Science Support - Best Practices across domains

By Elmer Topp-Jørgensen, Aarhus University

Elmer presented a brief overview of networks with 'best practices' of infrastructure management of relevance to INTERACT and collaborations between infrastructure networks and organisations to develop and share best practices.

This information is presented in a deliverable report with:

- Descriptions of relevant infrastructure networks and linkages to their 'best practices'.
- Joint working groups/action groups related to infrastructure management, where INTERACT is represented
- Collaborations to develop standards for infrastructure descriptions using INTERACT products as a paradigm.

This information will be made available on the INTEACT website to allow station managers and others to explore best practices across domains.

### WP4 - Data documentation and dissemination supporting services, some standards and tools that might help

Øystein Godøy, Norwegian Meteorological Institute (INTERACT Data Management WP lead)

Øystein stressed that data tend to disappear over time and hence data publication is essential. He described the FAIR principles (Findable, Accessible, Interoperable and reusable) and encouraged data publication using DOI (a unique identifier) that allows citation of datasets and tracking of their use.

The importance of describing methodologies in the metadata was highlighted to allow users of data to explore sampling methods of different data sets.

Sharing of data between station databases and international repositories is developing rapidly and interoperability and semantics are important in relation to sharing of metadata and data. Øystein presented a tool that can be used to transform station data to the desired format of the international repository by one click on the computer, once it is adapted to the station database and intended repository for sharing the data,.

Above elements should be an integral part of station data management plans (see WP4 presentation during annual meeting 2019).

## Open floor

Included presentations on (See presentations on the INTERACT website):

- Global Biodiversity Information facility (GBIF), Kári Fannar Larusson and Elmer Topp-Jørgensen on behalf of Dmitry Schigel/GBIF.  
Global repository for stations' biodiversity related data. Stations can sign up as a data publisher themselves or via CBMP (where they can get technical help). Easy to get started via GBIF web portal and several INTERACT Stations already provide data.
- Kluane Lake Research Station experiences with visiting school kids, Henry Penn.  
Showed movie by visiting student sparking discussions on attracting students with an interest in the north as an outreach, capacity building and revenue generating tool.
- Web-based researchers guide for Ny-Ålesund Research Station, Svalbard, Helge T. Markussen.  
Guide describing the process and regulations for conducting research in Svalbard - <https://www.researchinsvalbard.no/>. All applications to do research in Svalbard must be made through this system, including work at research stations. An example of an application system that will be linked to in INTERACT GIS – to direct scientists to stations application systems outside of INTERACT GIS.
- New research cabin in Kobbefjord, Greenland Institute of Natural Resources, Katrine Raundrup  
The planned construction of a new research hut in Kobbefjord and efforts to reduce emissions and environmental impacts were presented. Construction work started around the time of the meeting.
- Demonstration of drone mapping exercise, Sermilik Research Station, Greenland, Morten Rasch  
Morten Rasch presented a drone mapping exercise from Sermilik Research Station in Greenland, where a few hours work resulted in a high-resolution digital elevation model at a modest cost (if using the online platform for a month). Results can be seen in the presentation – found on the INTERACT website.



## SMF product updates

### INTERACT Street View – 360 camera status, feedback from stations, Elmer Topp-Jørgensen

About ten stations have made street view of the facilities and surrounding environment using the INTERACT Street View kit and Mapillary mapping tool. The street view allows scientists to take a virtual tour of the station and potential field sites, thus adding to securing a good match between scientists and stations. A number of 360-degree cameras are circulated to interested stations. The SMF keep track of cameras and ensure these are circulated. Stations were reminded to use the equipment and to report to the SMF once done, to discuss where to send the kit.

### INTERACT Station Catalogue, 3<sup>rd</sup> edition layout, Marie F. Arndal

Marie presented a suggestion for reducing the catalogue to one spread per station (instead of two) as the catalogue was becoming too big to carry. The new catalogue is supplemented by an online station catalogue available through INTERACT GIS. A draft layout was presented and participants had a chance to comment before a final version is sent for comments in the autumn of 2019.

## Lessons learned from INTERACT II

By Morten Rasch (University of Copenhagen) and Elmer Topp-Jørgensen (Aarhus University)

Participants were asked to comment on the structure and content of the SMF meetings to provide input on what to do better or different at future Station Manager Forum meetings:

- The range of topics on agenda are good.
- Open floor sessions are good.
- More safety courses.
- INTERACT website should include courses at the stations and information on how infrastructures are used in an educational context in Arctic science. Important that this is different to UArctic to avoid redundancies. There could also be a need for a 'marketplace' for students to connect with ongoing/proposed science projects. Thematic sessions where stations share experiences and knowledge. Suggested topics were mentioned:
  - o Drone use and sensors
  - o How to work towards 0-emission and reduce impact of research in the Arctic
  - o Experiences with field courses and webinars
  - o Examples of collaborations with e.g. scientific networks, consortia, industry, local communities, tourists, etc.
  - o Revenue generation and diversification of income generating activities (e.g. visiting schools, tourists, test platform for industry, etc.)
  - o Data management and sharing
  - o Added value from TA – show examples of spin offs from TA projects

## Summary of upcoming tasks and closing of SMF

By Morten Rasch (University of Copenhagen) and Elmer Topp-Jørgensen (Aarhus University)

The SMF coordinators asked for volunteer stations that would help develop the agenda for the next SMF meeting and help to develop relevant themes. Following persons volunteered: Sydonia Bret-Harte (Toolik), Andrea Schneider (APECS), Harry Penn (Kluane Lake), Christopher Andrews (Cairngorms), Olga Morozowa and Sergey Kirpotin (Aktru, Khanymey and Kajbasovo).

Station managers were reminded that:

- They will have a chance to comment on the 3<sup>rd</sup> edition of the station catalogue (autumn 2019)
- That they are expected to contribute to an update of the INTERACT Research and Monitoring report using the INTERACT GIS system.
- That the stations with INTERACT Street View kits should put them to use and afterwards send them on to the next station on the scheme. SMF staff is happy to help if needed.

Next SMF meeting will be held back to back with the kick off meeting of INTEACT III (early 2020).