



Minutes of INTERACT II

Station Managers' Forum VI



Photo: Marie Frost Arndal

5-6 February 2020
Bäckaskog Castle, Sweden

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DAY 1, Wednesday, February 5

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 at Bäckaskog Castle in Sweden. After a short introduction to the agenda, all participants introduced themselves.

42 INTERACT stations were represented at the meeting along with representatives from a number of external partners and collaborators, e.g. AMAP, Iridium, ECMWF, T-MOSAiC, APECS, AECO, etc., 69 participants altogether.

All presentations from INTERACT II can be found online at <https://eu-interact.org/presentations-from-station-managers-forum-vi/>

Status of SMF in INTERACT II, by Elmer Topp-Jørgensen

Generally, tasks are developing according to the time plan and almost all deliverables and milestones have been met. The planned safety courses are a bit delayed due to change of staff at UNIS, but the deliverable (course materials for four courses) is expected to be submitted before the deadline (June 2020). In addition to the two remaining courses (one at this meeting, one at the last consortium meeting in September 2020) and course materials, the SMF WP have another deliverable – the INTERACT Research and Monitoring Report with a deadline in June 2020. For this report, station managers need to register or update monitored parameter groups, studied disciplines, and upload project metadata from 2000 until today through the INTERACT GIS system. By updating in the GIS system, it will be easy to extract the information needed for the report.

T- MOSAiC by Diogo Folhas

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.

A T-MOSAiC/INTERACT call will be advertised by end of February 2020, to enable T-MOSAiC researchers/thematic groups to request access to data from Arctic field stations during 2020. It has been agreed that the T-MOSAiC Secretariat will receive, organize, and manage the applications, and act as a bridge between the applicants and INTERACT station managers. Requests to INTERACT Station Managers will be for specific data, observations or samples. Station Managers reserve the right to reject any application and the submission of an application does not guarantee the acceptance of the request. The data archives will be published as individual station records that will have DOI's assigned and will be cited where used (only new DOI for those data that do not have it already).

In addition to providing data/samples (as described above), T-MOSAiC has specific requests for INTERACT stations contributions to a T-MOSAiC/INTERACT catalogue of Automated Weather Station (AWS), and air temperature data plus photographic landscape images (spring and summer). This goes for the T-MOSAiC / MOSAiC period 1 January 2019 to 31 December 2020, and for data from AWS stations that are currently 'invisible' in the WMO network.

It is also still possible for stations and their scientists to join thematic groups under T-MOSAiC, please visit the T-MOSAiC website to explore these groups.

Action > Basic metadata for all stations (station catalogue information) will be sent to Diogo.

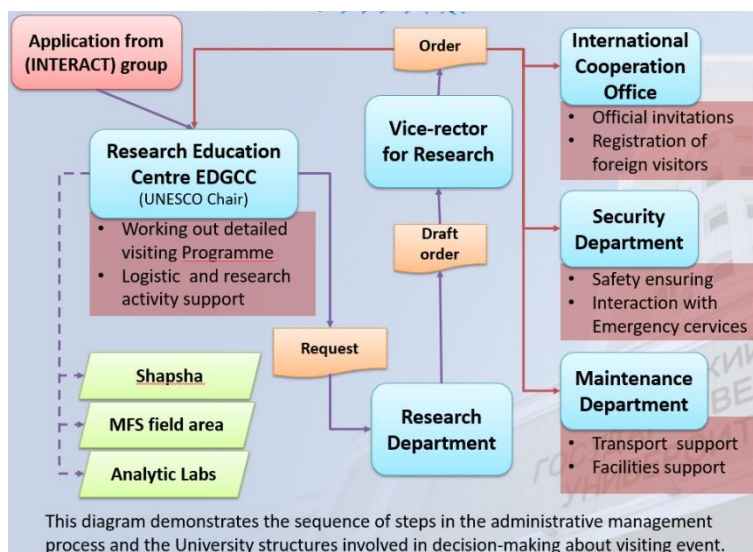
SMF Seminar

Best practices of organizing and financing research stations. Prospects and consequences of different administration and leadership models.

This seminar was brought up as a wish from station managers, and some stations were asked to give a presentation of their organisation and funding mechanisms for inspiration.

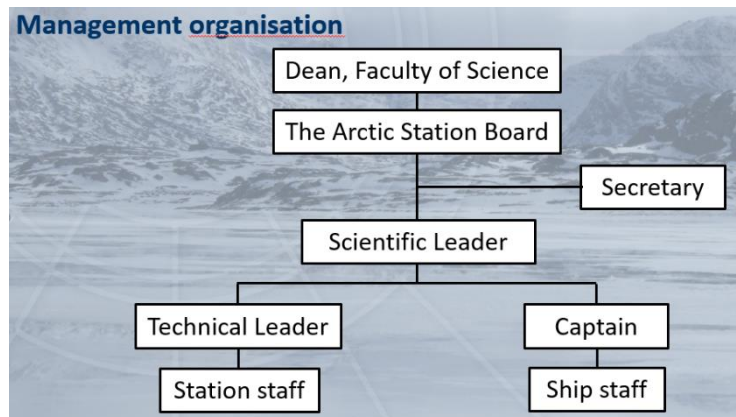
1. Mukhrino by Elena Lapshina

Mukhrino Field Station is owned and run by the Research Education Centre "EDGCC" (UNESCO Chair) of Yugra State University, Russia. The station was established in 2009 and has 6 employees. Funding: 90% of the money from INTERACT goes to visitors (flight tickets etc.). 5% is used for the run of the station. Government funds the rest. The university has no money to support the station. Indirect cost from grants can be used for technical support to the station.



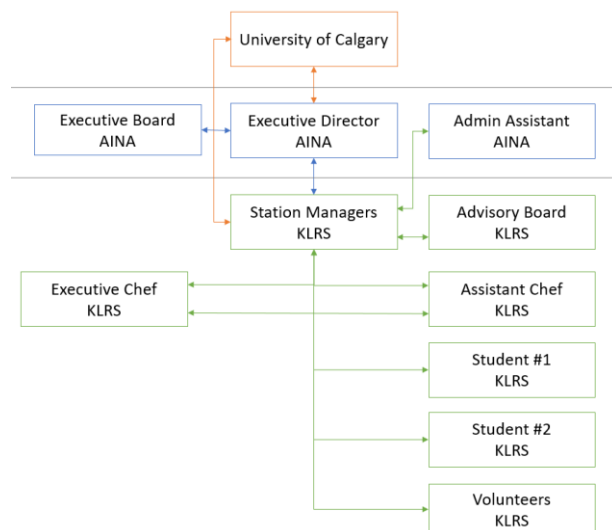
Arctic Station by Morten Rasch

The scientific leader of Arctic Station, Greenland, is in general an education position, i.e. a young scientific leader in a time limited position for example Ph.D or Post doc., ideally employed for 3 years. The station is owned by University of Copenhagen and has room for up to 26 scientists. Staff: 1 Scientific leader, 1 Technical leader, 1 Captain, 2-3 Logistics assistants. The Board is involved in the daily run of the station. The station receives an operating grant of 2.7 mio DKK from University of Copenhagen, and get income from user fees.



Kluane Lake by Harry Penn

Kluane Lake Research Station, Canada, is owned and managed by the Arctic Institute of North America (AINA), and can accommodate up to 42 persons. Two persons are sharing the Station manager position and spends 40% on research, 60% as station manager and vice versa (equals one full time position researcher). Costs are paid by users, governmental funds and scientific grants as well as paying field schools. Executive board consists of six people from industry and academia.



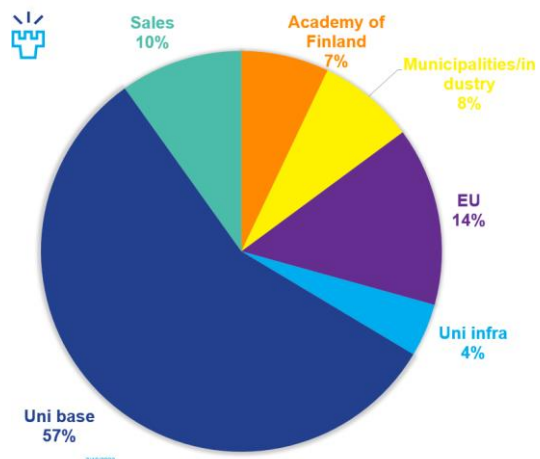
Oulanka by Rico Pavola

Oulanka Research Station in Finland is part of an Infrastructure unit at University of Oulo. As an infrastructure unit, staff are not expected to conduct research as PI.

Staff: 6 (technical staff). Number of beds: 72.

Organisation: Part of the Infrastructure unit – board only advisory. Directly under the vice-rector of research.

See diagram for funding:



Notes from the discussion in breakout groups:

1. Management of stations

Station head needs autonomy (as well as accountability). Short decision paths are important, otherwise it can be slow. If paths are long, people need to communicate and work together well. Very important for station manager to have control over his or her own budget and change expenditures to address things that come up.

Some kind of executive director is common, but can be challenging.

Advisory boards vary with some being more involved than others. Often they have some scientific advice functions.

Funding – stable, long term is advisable. Most stations are partly government or university funded. Important to have long term planning for infrastructure.

2. Financing models

All stations are different – some have 24/7 support while other stations are un-manned. Scientists need a safe platform to work from, and it is important to support science. Discussion on how to find the balance: How should technical and scientific issues be prioritised?

Concluding remarks: Could we make a comprehensive mapping of station management?

Action > Send out a questionnaire to all station managers. Make few slides to show policy makers and decision makers. Synthesize the discussion on financing by doing a survey.

Breather presentation – CIAO

China Iceland Arctic research Observatory by Halldór Johannsson

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

INTERACT GIS management organization by Morten Rasch

The INTERACT GIS system now includes the following modules:

- A station catalogue module
- A research project database
- A publication database
- An application module (for application for access to research stations)

Currently, apparently only two stations use the INTERACT GIS application module, and a major challenge is to get more stations to use the application module in the future.

Workpackage 2, Subtask 2.0.4 consists of the following tasks:

1) Develop INTERACT GIS to make it a leading international platform, 2) Consolidate the INTERACT GIS Management Organisation, and 3) Ensure an effective operation with an increasing number of stations involved (i.e. stations using the application module). 4) Integrate standard station descriptions and science metadata and data in formats developed in cooperation with relevant organisations/networks, and 5) Integrate thematic maps (climate zones, vegetation, permafrost etc.) in cooperation with relevant organisations/networks.

It was suggested that the possible establishment of a more permanent INTERACT GIS Management Organisation is postponed to the last few months of INTERACT III (i.e. the autumn of 2023). An interim management organization consisting of two representatives from SMF coordination (to represent the station managers and the INTERACT GIS Station Manager Forum perspectives) and two representatives from Umeå IT (representing the technical perspectives) was suggested and approved. A more detailed description of the new management organization can be found in the document 'suggestions concerning the formal framework for the run and development of INTERACT GIS during INTERACT III, by Morten Rasch (See Appendix 1)

INTERACT Station Managers Forum Website by Morten Rasch

The SMF website has not been updated for a long time and needs some re-structuring and new content. It will be placed under INTERACT main website under 'Managing stations' and new sub categories could be: 1) Station management, 2) INTERACT GIS, 3) Publications, 4) SMF meetings. A suggested sub-structure was presented to accommodate the need for making smart online versions of previous publications and new materials, and all agreed on the suggested new draft structure.

Action > The SMF secretariat will make a draft of a new website structure and send around to all station managers for input and comments. Will be ready for next Station Managers Forum in September 2020.

DAY 2, Thursday February 6

Breather presentation

North-East Scientific Station (NESS) by Nikita Zimov.

NESS is located in North-East Siberia. Originally, the station was founded in 1980 as the part of the Soviet Academy of Sciences, but since the 1990 NESS has been a private scientific organization. The presentation is available on the INTERACT website.

Open floor

Open floor is a session where station managers are encouraged to inform about recent developments at the station, new facilities/technologies, new outreach initiatives, etc. At this meeting six stations offered to present new developments. Presentations can be found on the INTERACT website <https://eu-interact.org/presentations-from-station-managers-forum-vi/> (item 20-24).

Arctic Research Station – Update on station facilities and instrumentation, by Aleksandr Sokolov

The station started in 1954 and is situated in the Yamal-Nenets Autonomous District in Russia. The presentation is available on the INTERACT website.

Oulanka Research Station – short movie, By Riku Pavola.

Video of Oulanka Research Station and it's 'EcoClimate' programme, which is a long-term manipulative natural experimental platform studying combined and separate effects of climate change and reindeer grazing. The video is available online at <https://youtu.be/vN3o3z1zwrU>.

Kluane Lake – Energy supply system and hydroponics, by Harry Penn

Kluane Lake Research Station recently installed a new energy supply system: 25 KW solar array and 80 kW carbon nano lead batteries for energy storage. In December-January, the diesel generators run at max to charge the batteries and are then turned off again for 3-4 days. Avoid the sound of generators during summer. The price for all this: around 200.000 Canadian dollars. Harry will send out information on the batteries, see appendix 2.

A hydroponic growing system will be installed to grow leafy greens, roots crops, etc. A 40 feet container with 18,000 LED lamps (production equal to 1 acre land), is planned to be up and running by June 2020. System has a water scrubber, to remove nutrients from wastewater. Crop box cost around 100.000 CA dollars. The presentation is available on the INTERACT website.

Sonnblick Observatory by Christian Maier

Update on station facilities and instrumentation.

Sonnblick Observatory is situated in the Austrian Alps. The presentation is available on the INTERACT website.

SakhaFluxNet by Trofim Maximov

Global, continental and regional observational networks of heat, water and carbon dioxide fluxes. The presentation is available on the INTERACT website.

Research Station Samoylov Island by Sofia Antonova

Update on station facilities and instrumentation.

High frequency Lena River water sampling based at the Research Station Samoylov Island. The station uses permanent staff, that lives at the station year-round and operates and supports the station, but are not scientifically trained. The presentation is available on the INTERACT website.

Safety Course by Sara Mollie Cohen

Sara gave a lecture on means of communication and positioning systems:

Pros and cons of different Satellite phones, Emergency Beacons, VHF radios, InReach, Maps and compasses, GPS, etc. The presentation is available on the INTERACT website and can be used as a guide, see

<https://eu-interact.org/presentations-from-station-managers-forum-vi/>.

INTERACT photo contest and Coffee table book by Morten Rasch

A coffee table book with pictures from a photo competition in the INTERACT community is planned for publication by the end of INTERACT II. Each chapter will be supplemented with a short text (one page) telling, in easy words, about the subject of the chapter. The primary purpose of this book is to illustrate the more adventurous aspects of arctic research stations and arctic research to attract an audience that is not being attracted by other INTERACT publications / outreach products. The photos will be evaluated by an evaluation committee. The winner under each theme will have a diploma and a small present. A number of pictures will be selected for the book by the evaluation panel.

Possible themes:

- The research Station
- Arctic Fieldwork
- Remote Field Camps
- Landscapes
- Wildlife and plants
- People
- Local communities

Photo competition: February – April 2020, and expected Publication in September 2020.

Action > send out info about the competition (requirements, photo resolution etc.) and timelines for the photo contest. Any suggestions for female photographers for the evaluation committee will be appreciated.

Closing of SMF

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

Station managers were reminded that:

- A number of 360-degree cameras are circulated to interested stations. The SMF keeps 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.
- New research and Monitoring report will soon be made. Important that all station managers upload their project metadata in INTERACT GIS. Guidelines for uploading excel files with project metadata will be circulated.

Action > Elmer will send out a template to all station managers to ease the uploading of metadata.

Action > Station managers remember to sign up for INTERACT GIS (register on website and use 'Contact' on the website to write note on which station you will be managing and if others need to have access to the station in INTERACT GIS)

Action > Next SMF meeting will be held back to back with the Annual meeting of INTERACT III, September 21-25 in North America.

Appendices 1- 2

1. INTERACT GIS management organization

See attached pdf

2. Data sheet and manual for the batteries - used at KLRS.

See attached pdf

Some extra notes from the SolVest Inc (www.solvest.ca) who installed the batteries at KLRS:

- The spec sheet shows the operating temperature of -35C, which means the batteries can be charged and discharged at that temperature. Page 4 of the user guide states that the freezing temperature of the fully charged battery is -69C.
- In terms of batteries that can sit all winter at temperatures below -20 ° C, hold a charge, and not be damaged, Lead-Acid Gel batteries are really the only option.
- Lithium Ion batteries are not designed to be exposed to cold temperatures (below -20 ° C), so unless the research stations are operated year round, they are not a good fit.