EISCAT 3D Norway Meeting

May 10, 2022

Online on Zoom

Participants: Harri Hellgren (HH), Andres Spicher, Dag Lorentzen (DL), Inger Solheim (IS), Karl Magnus Laundal, Kjellmar Oksavik, Lasse Clausen, Martin Flügge (MF), Spencer Mark Hatch, Patrick Joseph Espy (PJE), Lisa Baddeley (LB), Ingrid Mann (IM), Devin Huyghebaert (DH)

Institutions: EISCAT (1), UiT (4), UNIS (2), UiB (3), UiO (1), ASC (1), NTNU (1)

(all member institutions present)

Agenda

09:00-09:15, Update on the Implementation of EISCAT_3D - Harri Hellgren

The plan is to have operations in 2023. The antennas should arrive at a port near Tromsø in the fall.

DH – would delays in shipping antennas result in setup being delayed to after winter?

HH - Snow would delay antenna installation if there are delays in antenna shipment.

DH – What is the status of the white rabbit procurement process?

HH – Bids have been received and the procurement of devices is on schedule.

IM – Regarding Installation of the test sub-array, will this provide valuable experience in the setup?

HH - The first test sub-array setup took approximately 2 days. The new sub-array design is simpler – 2 antenna sub-arrays per day is the plan.

09:15-09:30, EISCAT 3D Receiver Site at Andøya Space Center - Martin Flügge

Andøya Space Center is still interested in having an EISCAT_3D site located there.

IM – The Andøya EISCAT_3D site is still in the project plan for EISCAT 3D.

HH – We have antennas available to fill the initial remote sites in to the full configuration, but no extra containers. The present contractor will not build more containers due to the

cost. There is a possibility to use small receiver electronic units at each antenna in a mini enclosure without a large building at the receiver sites. This will be investigated in the future.

DH – Would it be worthwhile to deploy Andøya receiving array after the Finland and Sweden half-array receiving sites are completed?

HH – That is for council to decide. Ground plane blocks can be used to elevate planes to match existing arrays, so compatibility with existing structures should not be an issue.

IM – The present contractor would not offer more antenna elements in the future?

HH – Antenna elements they will do if requested. They will not do large steel work. Due to this, extending the EISCAT_3D arrays will require clever solutions at the receiver sites.

MF – The Andøya receiving array is a good opportunity to collaborate with IAP/Germany with their multiple instruments in the vicinity. The main focus should be getting the initial sites operational.

HH and MF – One benefit of Andøya is that it has all the existing infrastructure for future installation and operation (power, internet, land, etc.)

09:30-09:45, The Potential for an EISCAT 3D Norway Organizational Charter - Devin Huyghebaert

IS – There is potential to have a specifically appointed time allocation member. The RCN wants consortium to take more initiative in the administration of the group

LB – There is currently not a huge competition for time. There is an agreement with EISCAT that unused hours can be carried over to the first months of the next year. The different international EISCAT communities have different setups for time allocation. Different options need to be considered that balance ease of applying for radar time with the ability to determine good science and proposals.

IM – An option is to appoint 2 new members to time allocation? What would be a good way forward? What are the thoughts of joining with another country for time allocation and proposal review?

LB – Reluctant to join another country for time allocation. Reviewing proposals with small review panel can be time consuming. Setting deadlines for radar time applications would be

helpful. It would be helpful to include another person with expertise in the middle atmosphere for time allocation review. There are a wide range of science applications for the incoherent scatter radars that are difficult to cover with a single person.

LB – The suggestion is to keep time allocation within the Norwegian group and have 2 deadlines a year.

DL – There is already a consortium agreement in place – with universities as the main players. It is perhaps a bit early to be setting up the charter, but a charter will be good in the future. One example of charters used for a similar project is SuperDARN – There are charters for both the principal investigators and working groups. Why should we be looking into a charter now before the radar is constructed?

DH – It is good to start discussions early to ensure everyone is informed and has the opportunity to provide input. Discussions should be started now to notify the Norwegian EISCAT group that this is something that is being considered.

IS – The goal is to include the charter in part of proposal in future. There is a new proposal to be written in 2024.

IM – Many different institutions made contributions to the previous proposal, and determining how to organize the work in the future will help for writing proposal.

LB – There have been discussions about running a special workshop for tutorials regarding EISCAT_3D operations once the system is operational. As many people as possible should attend. This has been discussed in the EISCAT Science Advisory Committee. The workshop will include experiment design and signal analysis. More information on the workshop will be provided as plans are formalized.

09:45-10:00, Coffee Break

10:00-10:15, Updating the EISCAT 3D Norway Science Objectives – Devin Huyghebaert

With a new proposal to be written in 2024, and the first operations of EISCAT_3D occurring soon, do we need to re-consider the Science Objectives for EISCAT_3D Norway? Is there anything that is missed with the current objectives?

IM – We should emphasize the competence that EISCAT Norway has for addressing science objectives.

LB – Most science topics are covered by the broad topic existing questions, though radar technology could be added.

HH – The plan is for users to be able to collaborate and create software for experiment design and analysis within the EISCAT online framework that is being setup and tested.

PJE – There exist Intellectual Property (IP) clauses with universities that people need to be aware of when doing software development on external platforms. People should be careful when creating/sharing/providing software to external users when university may own IP.

10:15-10:30, Updating the EISCAT 3D Norway Key Performance Indicators - Inger Solheim

IS – Who, and how much data the user uses, are some aspects to consider for KPIs. One of the current methods is using the IP address.

LB – Important to reply to requests for details on contributions and work associated with EISCAT. These details are very important for funding agencies and for reporting. IPs are difficult to track, as one user at an institution will download the data and share among the members.

HH – IPs will not work on new EISCAT_3D data for access and tracking. The plan for EISCAT 3D is that all data will have identifications and will be referenced by publications. User groups will be created within the online EISCAT framework for different collaborations. The user groups will have group access to experiment data associated with their collaboration. No personal data will be stored and/or managed by EISCAT.

IM – It is important to acknowledge EISCAT_3D project number in publications with EISCAT data, even if using old EISCAT data. This will help for tracking activity for the funding agencies. The reviewing and changing of KPIs allows the Norwegian EISCAT group to set our own goals. The next funding proposal in 2024 provides an opportunity to do this. Some ideas for KPI tracking include student projects and international collaborations.

DH – What is the plan for DOIs for EISCAT data?

HH – It is currently being investigated how EISCAT will assign DOIs to data. It is also being determined how to manage multi-user experiments for data access and referencing.

DH – SuperDARN Canada is beginning to setup a service with DOIs for their data, as an example. (https://www.frdr-dfdr.ca/repo/collection/superdarn)

LB – Should there be an initial EISCAT 3D operations period where all Norwegian users get access to data without the one year embargo? What % of time should be assigned to this? This is something that should be considered.

IM – Is there satellite/special time for EISCAT operations, and is there a way to apply for time from common program time for EISCAT 3D?

LB – There typically needs to be a white paper for recurrent common time requests (ie. to cover a satellite conjunction). This is submitted to SAC. Also, the EISCAT data is expected to be open access for receiving common time allocations. There is also the peer review time option from EISCAT for obtaining more radar time. Norwegian users can apply through this channel, with deadlines occurring twice a year. The typical procedure for rocket experiments is that each participating member country contributes a number of hours to a common 'pot'- this can be from their country allocation budget or from other sources such as the PP time.