

Minutes from EISCAT-3D Norway User Meeting

Date: Dec. 6, 2021 13:00-15:00

Place: on-line, zoom

Participants: 22 participants mainly from UiT, UNIS, UiO, UiB, Andøya Space Center, and EISCAT.

Chair and minutes by: Devin Huyghebaert

1. Welcome and opening of the meeting by Devin Huyghebaert
2. Status of EISCAT 3D by Anders Tjulin (AT), EISCAT scientific association.

The presentation covered the status of the EISCAT_3D project in terms of site preparation, antenna constructions, and production and delivery of the transmitter and receiver units.

Notes from the discussion:

- What's the plan for the originally planned receiving site at Andøya, and what can be done to get it back in the development plans?

AT responded that a receiver at Andøya is currently not in the project plan. First the other three stations will be fully completed. The meeting discussed the benefit of an Andøya receiver, and the science case – one key feature is better geometry for high altitude measurements.

A question on how the antenna arrays will deal with snow cover.

AT responded with that snow should fall between spaces in the array, and should not be an issue.

A question on if there have been any issues with the EISCAT 3D transmitter

AT responded with that he has not been directly involved, but nothing has been mentioned as being a problem.

3. Summary of Ongoing and Upcoming Activities with EISCAT 3D by Devin Huyghebaert (DH)
The presentation covered E3D test panel setup, sign in for scheduling and data access, Common Mode Programme development for E3D, Software packages by Lei Cai (U of Oulu) for obtaining data/data visualization, Software development for radar experiment design and testing by EISCAT.

Notes from the discussion:

A question on if there is a place with links for all the ongoing software activities?

DH replied that there could be a page on E3D Norway site with links to the software packages available on GitHub.

A question on if there are any limitations on changing common programs (CP) after operations begin? DH replied that CP implementation are flexible in hardware, depends on administration side.

A question on if the radar will run continuous for the common programs?

LB replied that there will likely not be CW radar ops

A question on if there be raw data stored?

DH replied that the raw data will likely not be available, there is too much data to store it all.

A question on if the EGI sign-in agreement with FEIDE will be created for all of Norway, or just UiT?

DH replied that the plan is the contract with FEIDE will be made for all Norway institutions

Comment from LB:

LB or DH will likely be in charge of administering EGI sign in groups for Norway. Being assigned to an EGI group will be a one-time operation, after which the login will automatically provide access for the groups you are assigned to.

4. Update from the "Science Advisory Committee" by Lisa Baddeley

The presentation gave an overview of the major topics discussed by the Science Advisory Committee over the previous year, as well as the purpose of the committee. There is the possibility of white papers for EISCAT ground support for new satellite missions (EZIE, SMILE, MATS). There is progress being made on a white paper for Svalbard radar operations in the future, as the lifespan is until ~ 2030. A summary of Norwegian EISCAT activity was provided, along with the notice that to request time you can request through EISCAT and/or LB which correspond to different operation hour sources (~250 hours Norwegian, ~200 hours EISCAT).

5. Project Overview and Science Objectives for EISCAT 3D by Ingrid Mann (IM)

IM presented an overview of the EISCAT Council and the Norwegian EISCAT Project Board. Discussed a need to prepare for funding applications for 2024. Asked if there a need to revisit and modify the EISCAT_3D Norway Science objectives that were previously posed. Previous Science Objectives:

Q1) How to proceed beyond the present simplistic, static, stationary and homogeneous analysis of upper atmospheric and ionospheric processes?

Q2) How does space weather affect ionospheric processes and how to support modeling and space weather services?

Q3) How to advance fundamental plasma physics by employing the ionosphere as a natural plasma physics laboratory?

Q4) How does the influx of extraterrestrial material interact with the upper atmosphere and where does the material originate from?

Q5) How does solar activity couple from geospace into the lower atmosphere and climate system, and does this energy change the wave forcing of geospace from below?

A question about the goal for unused time?

LB replied that it has been used for long term data for rocket launch baselines in the past. There is the potential to have unused time put towards a science goal.

Spencer Hatch from Bergen commented:

There is a golden opportunity with EISCAT 3D to investigate finer scale structures in the auroral electrojet

IM discussed having EISCAT 3D Norway meetings more often. The next meeting could be held in the spring to start discussing updating the science questions for EISCAT 3D Norway.

6. Key Performance Indicator (KPI) Discussion by Inger Solheim (IS)

The presentation covered examples of what KPIs can be, and what performance indicators are currently reported in EISCAT.

Notes from the discussion:

A question about the timeline for determining KPIs?

IS replied that AFC and SAC will discuss further this spring.

Some examples of EISCAT 3D Norway Goals were discussed, including international collaboration, public outreach, the involvement of students, and data for services directly relevant to society.

Some links to examples of KPI were provided:

IS: https://www.esfri.eu/sites/default/files/ESFRI_WG_Monitoring_Report.pdf

AT: <https://www.envriplus.eu/wp-content/uploads/2015/08/D10.3.pdf>

EISCAT Annual Report: <https://eiscat.se/scientist/document/annual-reports/>

7. General Discussion and closing of the meeting

Discussion on making a charter and statutes for EISCAT 3D Norway

Magnar Gullikstad Johnsen provided an update on optical plans at Skibotn from the Tromsø Geophysical Observatory perspective.

Colleagues in Japan likely want to move some optical instruments to Skibotn

Tromsø Geophysical Observatory is aiming to have 4-8 optical domes in Skibotn, 4 will potentially be installed this summer

The meeting closed with plans to have the next EISCAT 3D Norway meeting in the spring to discuss three key topics:

- 1) Charter for the EISCAT 3D Norway Group
- 2) Science objectives for EISCAT 3D Norway – Do they need to be updated?
- 3) What Key Performance Indicators should be used as we transition from the implementation to operations phase with EISCAT 3D?

Links from participants:

Anders: <https://www.pithia-nrf.eu/>

Kolbjørn: <https://www.grandchallenge.no/>