

# Future e-Infrastructure Requirements for the EISCAT facilities



## Future e-Infrastructure Requirements for the EISCAT facilities



**Speaker** [Ian McCrea](#)

**Track** Track 1

**Session** [Data Services and Technologies](#)

**Description** The EISCAT\_3D project:

Data and processing challenges and implications for Nordic e-infrastructure  
Ian McCrea: STFC Rutherford Appleton Laboratory, UK

The EISCAT\_3D project ([www.eiscat3d.se](http://www.eiscat3d.se)) will be a large, distributed research infrastructure located in the Nordic region, with facilities in Norway, Sweden and Finland. EISCAT\_3D will be a new type of radar facility for studies of the upper atmosphere and near-Earth space, replacing the current generation of dish-based EISCAT radars by a network of phased array antenna fields, offering considerably greater performance in terms of power, resolution and experimental flexibility. Realising such a system, however, presents several challenges, not least of which is the fact that the system will produce several orders of magnitude more data than the present radars. In order to extract the optimum performance, these data will need to be combined and processed in real-time, requiring the provision of significant computing and data transport capabilities to relatively

remote locations.

In this talk, we will briefly review the current design of the EISCAT\_3D system, with a particular emphasis on the computing and networking requirements at each data processing level and how the various challenges are likely to be resolved. In the light of this, we will consider the potential implications for e-infrastructure provision in the Nordic region, in particular with regard to networking and long-term data storage.

### Presentation documents

- [EISCAT\\_3D\\_abstract.doc](#)
- [2\\_Ian\\_McCrea.pdf](#)



## All talks

- [A Vision for Nordic e-Infrastructure Collaboration](#)
- [A national archive for digital research data](#)
- [ATLAS Computing: status and plans](#)
- [Advanced User Support in the Swedish National HPC Infrastructure](#)
- [BBMRI requirements and use of the e-Infrastructure](#)
- [Bioinformatics](#)
- [Building and maintaining services for Sensitive Data](#)
- [Closing Keynote](#)
- [Co-chair for WS Security I](#)
- [Co-chair for WS Security II](#)
- [Co-chair for WS Security III](#)
- [Co-chair for WS Security IV](#)
- [Conference conclusions and closing](#)
- [Design and implementation of an energy efficient high density data center](#)
- [Developing Global Data Infrastructures: Trends and Requirements](#)
- [EGI: Going beyond support for WLCG](#)
- [EISCAT requirements and use of the e-Infrastructure](#)
- [EUDAT - Towards a Collaborative Data Infrastructure - A Nordic Perspective?](#)
- [EUDAT: Towards a European Collaborative Data Infrastructure](#)
- [Enabling excellent science through High-Performance Computing](#)
- [Fido - Providing a secure and convenient gateway to packaged HPC jobs](#)
- [From Old-School to New-School Operation of HPC](#)
- [Future e-Infrastructure Requirements for the EISCAT facilities](#)
- [Kajaani Data Center - case study](#)
- [Meteorological Co-operation on Operational NWP \(Numerical weather prediction\) between Sweden and Norway](#)
- [NorStore – Managing Digital Research Data in Norway](#)
- [Nordic Contributions to Developing a European Digital Services Infrastructure for Social Sciences and Humanities](#)
- [Nordic Opportunities for Cloud Software Collaboration](#)
- [Nordic Opportunities for Digital Humanities](#)
- [Nordic Storage Opportunities](#)
- [Official opening](#)
- [Panel discussion](#)
- [Panel discussion](#)
- [Panel discussion](#)
- [Panel discussion](#)
- [Plans for the Large Hadron Collider](#)
- [Reproduce and share: the key to the new generation scientific portal at UiO based on the Galaxy framework](#)
- [Research Data Initiatives in Sweden](#)
- [ScalaLife Competence Center - Providing tailored made support to the computational Life Science communities](#)
- [Science Gateways and their enabling technologies from EGI and SCI-BUS](#)
- [Science Gateways in climate research](#)
- [TTA – National Research Data Project in Finland](#)
- [The energy cost of compressing sparse matrices for performance](#)
- [Tidying up the Basement: A Tale of Large-Scale Parsing on National eInfrastructure](#)
- [Towards the clouds, together. Collaboration on cloud services in research and education](#)
- [WS Analysis and Actions](#)
- [Welcome](#)
- [Welcome from NTNU](#)
- [What business are we in? Data-centric research, service requirements and national responses](#)



NDGF - lessons learned

Ws Introduction to IaaS in Life Science in the Nordics

~oceanos and Synnefo: The public cloud service and the open source software that powers it