The EISCAT_3D data portal in the EOSC Marketplace

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The design of the next generation incoherent scatter radar system to be constructed in northern Scandinavia, EISCAT_3D, opens up opportunities for physicists to explore new facets of the interaction between the Earth and space as well as studies of climate change, space weather plasma physics, space debris and near-Earth objects. EISCAT_3D is planned to be operational in 2022 and will have a lifetime of more than 30 years. This system will introduce significant challenges in the handling of experimental data, which will be generated at very high rates (Velocity), Volumes and Variety. These are typically referred to as big data problems (the 3V plus the Value) and require solutions beyond the capabilities of conventional database technologies and local computing facilities. The long timescale also demands stable but flexible methods for curation and provenance tracking and a plan for data migration.

EISCAT_3D was included 2018 on the ESFRI Landmark list for large scale European research infrastructures. The overall ambition is to provide the research community with tools that improve opportunities for scientific discovery and to attract new users to the versatile technique of three-dimensional radar observations.

EOSC-hub was a 33 M€ H2020 project that ended 1 April 2021 with the involvement of over 100 institutes. The project established the first elements of the European Open Science Cloud (EOSC) – the infrastructure aimed to accelerate and support the current transition to more effective Open Science and Open Innovation in the Digital Single Market.

The EISCAT_3D Competence Centre within EOSC-hub deployed and integrated necessary tools, services and infrastructures. For the data management and processing, the DIRAC interware is used as an integration component providing a single access point towards e-Infrastructures. The EUDAT's B2 services is used to unify the data management and discovery across different storages. The EGI and INDIGO services deploying the software stack on HPC/HTC systems including release management provide secondary services for production operation and user authentication and access control.

We present an overview of the latest development sof the data portal and job submission system. Test users are welcome to try the data portal and job submission.