

Cataloguing in EISCAT-3D

The following relates mainly to cataloguing in EISCAT in general, with EISCAT_3D likely to make wider use of standard catalogue systems.

EISCAT has its own self-developed scheduling system for cataloguing the use of its observation systems. It also has its own self-developed SQL file system for cataloguing its data processing systems, observation events and data processing events. It uses Madrigal (<http://www.openmadrigal.org>) for dataset cataloguing and for services (<http://www.eiscat.se/madrigal>). For service cataloguing, there is also the ESPAS portal (<http://www.espas-fp7.eu/portal/>). No current mechanism exists for cataloguing papers or other reports, though data citation should be implemented in EISCAT_3D using persistent identifiers.

The EISCAT_3D data model, portal and catalogue implementation are all still under development, but will make use of a standard PID system in order to address the need for data citation and publication tracking. The current EISCAT system, upon which EISCAT_3D will be built and extended, provides metadata information for:

Location (URL), temporal coordinates, geospatial coordinates, originator (being EISCAT), project (being EISCAT), facility (where the data is generated), quality (addressing error limits), availability ('rules of the road' text and check of user affiliation).

Citations are not recorded except in annual reports of member organisations. Generally self-developed formats are used for metadata; metadata for analysed data products are provided to ESPAS according to their standard, which uses SKOS, parts of Dublin Core, some ISO standard elements, etc. Information on the ESPAS vocabulary can be found at <https://www.espas-fp7.eu/portal/browse.html#ontology>, and <https://www.espas-fp7.eu/portal/browse.html#supportingVocabularies>.

Cross/inter-links are not generally maintained between catalogue items – only individual time stamps, and some text descriptions.

Data transfer and cataloguing in own database (raw data catalogue) are inserted semi-automatically. Insertion of analysed products into Madrigal requires some manual manipulation using custom software. ESPAS XML metadata is generated by Madrigal and harvested by the ESPAS portal using CSW.

Madrigal is open – users are registered by email and affiliation. It provides APIs for Python, Matlab and others. The IP address of a user downloading raw data is checked in order to confirm that the user is within a country that is a member of EISCAT. ESPAS requests extraction of data via a subset of the Sensor Observations Service protocol; data is provided in SWE XML. Interfaces provided for EISCAT_3D are still to be determined, but will be based on existing standards.

The EISCAT_3D portal (under development) will implement certificate based authentication and provide multi-criteria search functionality. dCache and iRODS are being evaluated for use as the storage backend, while DIRAC, EGI and EUDAT services are being evaluated for implementing the portal service.

Go-between	Paul Martin
RI representative	Ingemar Häggström and Anders Tjulin