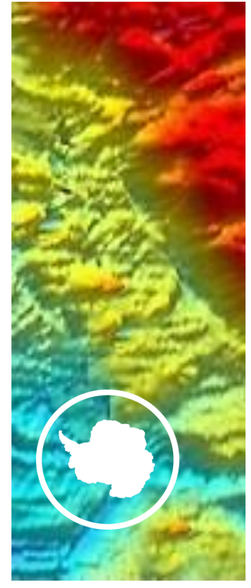
Towards a data commons:

Imagery and derived data from Uncrewed Aerial System (UAS)



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Abstract

The use of Uncrewed Aerial Vehicles (UAV) for scientific purposes has significantly increased in the last 10 years and opens the doors to new scientific discoveries. It is now a cost-effective way to collect data that are used in a large range of environmental research studies. However, the lack of UAV data management best practices, and the lack of open hardware and software tools, limits the full potential reuse of these data.

The NERC Environmental Data Service (EDS), a trusted UK facility providing data stewardship services ensuring environmental data of long-term value are findable, accessible, interoperable and reusable (FAIR), is developing recommendations on how to best collect and manage UAV data to reach their full reuse potential.

In this poster, we showcase the challenges and opportunities that exist with regards to the stewardship aspects of UAV data and invite users to take part in a survey to better understand their usage and requirements for managing UAV data.

UAS data characteristics

- Main output of UAS survey
- Imagery and sensor data
- Used by a wide range of scientific domains
- High volume
- No standards
- Different type of platforms and sensors

Expertise from the NERC EDS

Airborne data management | Domain expertise | Marine autonomy | International involvement

British Oceanographic Data Centre	Centre for Environmental Data Analysis	Environmental Information Data Centre	National Geoscience Data Centre	UK Polar Data Centre
Discipline: Marine	Discipline: Atmospheric, Earth Observation, and Solar and space physics	Discipline: Terrestrial and freshwater	Discipline: Geoscience	Discipline: Polar and cryosphere

UAS metadata principles

Findable Accessible Interoperable Reusable

UK Gemini metadata standard

UAV metadata

Common UAV metadata

including information about the platforms (payload, stability), the sensors, the calibration parameters, the project so the community can assess the quality, and understand the potential bias of the data.

Image metadata

Image type, processing, resolution, etc

Sensor metadata

Variable, processing, etc

Domain specific recommendations

Domain specific recommendations

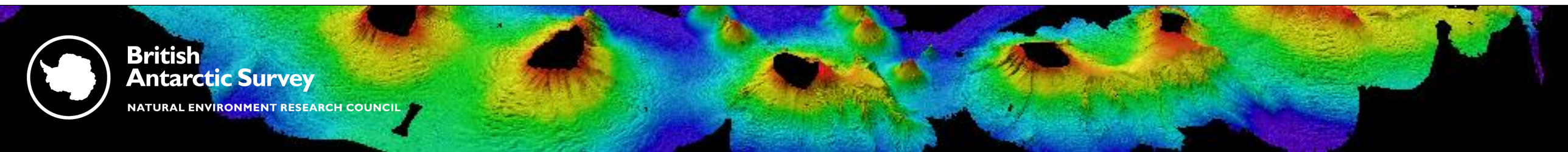
Towards a UAS data commons

- Integrated computational facilities
- 1 common data portal for discovery
- Privacy, licensing, security
- **UAS data**
- Controlled vocabularies and PID
- NetZero consideration and storage
- Training

Interested in UAS data, take part in our survey:

The survey will help identify the key metadata for describing UAS data.

https://forms.office.com/e/w3RUXtgZ40



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