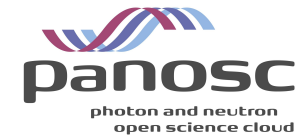


Science clusters contributions to a (minimally)  
viable  
European Open Science Cloud



# EOSC Core Functionalities

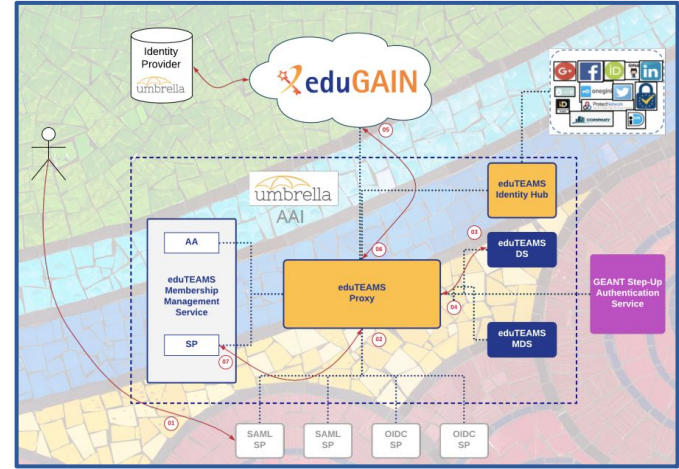
*example: AAI*

**LS LOGIN delivered in production by EOSC-Life**

- Connect existing LS RI AAI systems with EOSC AAI
- Security features for sensitive data (incl GA4GH standards)
- XX users; YY organisations

**ESCAPE AAI is federated with EOSC AAI**

- also shown to work with *EGI-checkin* & *FENIX HPC AAI*
- ESCAPE AAI is a hybrid allowing our "legacy" RIs to continue to use X.509 as well as tokens

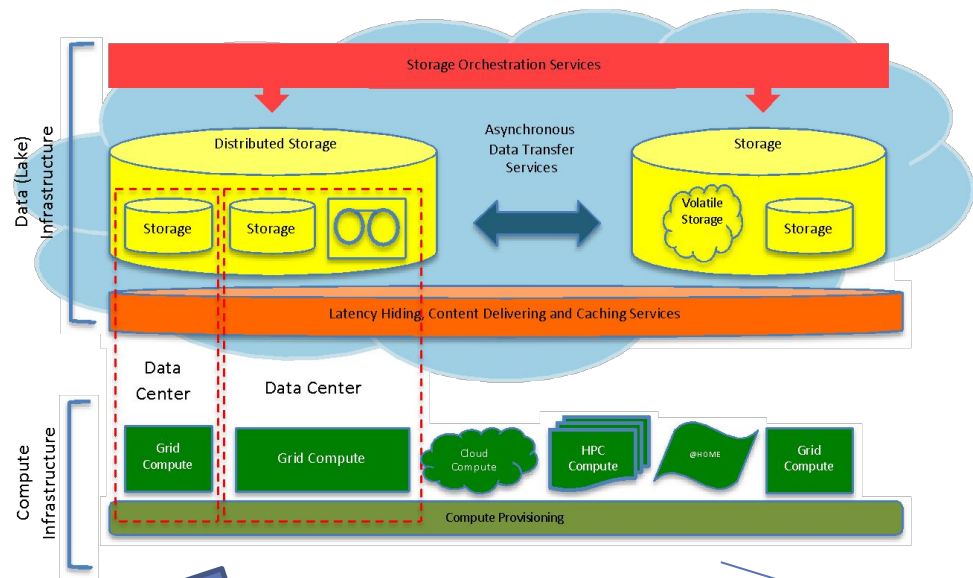


# Exchange : reusable services, data and scientific analysis tools

- ESCAPE data lake and virtual research environment
  - *Consistent toolset across experiments reduce complexity and drive long-term sustainability*
- EOSC-Life: reusable and extendable data, interoperability and analysis services
  - *Adopted for Horizon Europe / Pandemic preparedness and Cancer Mission*
- SSHOC Marketplace
  - *Catalog of reusable services for Social sciences and humanities*
- ENVRI-Hub
  - *Catalogue of services and collaboration platform for Environmental Sciences*



# ESCAPE tools and EOSC integration



**Data Lake:**

**VRE:**

**Software Repo:**

**ESCAPE Data Lake (Federated storage)**

Hosts/ingests open data sources into a common store; Includes EOSC Exchange provisioned storage

**EOSC Core:**  
+ Helpdesk as a service (+monitoring) (+accounting)

**ESCAPE AAI**

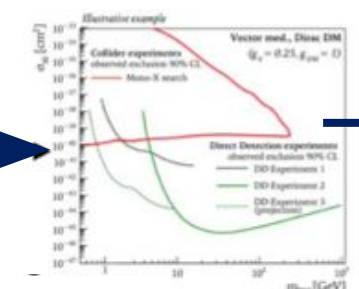
**EOSC Future**  
AAI Federated with EOSC

**Virtual Research Environment (VRE)**

Cloud computing using EOSC Exchange provisioned compute, & HPC

**Software Repository**


Archive of reusable pipelines: Onboarded to EOSC marketplace



Publish results to Zenodo



**FAIRsharing.org**  
standards, databases, policies

 **Bioschemas.org**

 **RO-Crate**

 **WorkflowHub**

 **LS LOGIN**

 **Galaxy Europe**



 **BY-COVID**

 **eosc**  
cancer

**EuroScienceGateway**





Re CoD ID

Contributors of European Social Science Data Archives



National Health Data Infrastructures



Hospitals



Consortia



Universities



Medical Centres



Research Centres



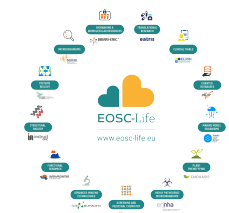
Public Health Laboratories

Mobilise

Connect

Standardise

Expose & analyse



FAIRsharing.org standards, databases, policies

Bioschemas.org

RO-Crate



Galaxy Europe

LS LOGIN



# Science clusters bring data to the EOSC

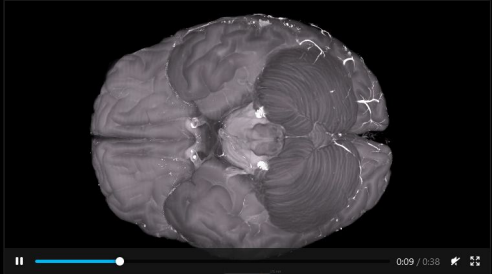
**Human Organ Atlas** EXPLORE SEARCH HELP

## Welcome to the Human Organ Atlas

The Human Organ Atlas uses **Hierarchical Phase-Contrast Tomography** to span a previously poorly explored scale in our understanding of human anatomy, the micron to whole intact organ scale.

Histology using optical and electron microscopy images cells and other structures with sub-micron accuracy but only on small biopsies of tissue from an organ, while clinical CT and MRI scans can image whole organs, but with a resolution only down to just below a millimetre. HIP-CT bridges these scales in 3D, imaging intact organs with ca. 20 micron voxels, and locally down to microns.

We hope this open access Atlas, enabled by the ESRF-EBS, will act as a reference to provide new insights into our biological makeup in health and disease. To stay up to date, follow [@HIP-CT](#)



0:09 / 0:38

*HIP-CT imaging and 3D reconstruction of a complete brain from the body donor LADAF-2020-31. More videos can be viewed on the HIP-CT YouTube channel.*

### Funding

This project has been made possible by funding from:

- The European Synchrotron Radiation Facility (ESRF) — funding proposal MD-1252
- The Chan Zuckerberg Initiative, a donor-advised fund of the Silicon Valley Community Foundation
- The German Registry of COVID-19 Autopsies (DeRegCOVID), supported by the German Federal Ministry of Health
- The Royal Academy of Engineering, UK
- The UK Medical Research Council
- The Wellcome Trust

### Collaborators


- UCL, London, England: Peter D Lee, Claire Walsh, Simon Walker-Samuel, Rebecca Shipley, Sebastian Marussi, Joseph Jacob, David Long, Daniyal Jafree, Ryo Torii, Charlotte Hagen
- ESRF, Grenoble, France: Paul Tafforeau, Elodie Boller
- Medizinische Hochschule Hannover, Germany: Danny D Jonigk, Christopher Werlein, Mark Kuehnel
- Universitätsmedizin der Johannes Gutenberg-Universität Mainz, Germany: M Ackermann
- University Hospital of Heidelberg, Germany: Willi Wagner
- Grenoble Alpes University, Department of Anatomy, French National Center for Scientific Research: A Bellier
- Diamond Light Source, Harwell, UK: Andy Bodey, Robert C Atwood
- Imperial College London, UK: JL Robertus

Ecole de Chimie **LADAF**

**panosc**  
photon and neutron open science cloud


### Reference

Walsh, C.L., Tafforeau, P., Wagner, W.L. et al. Imaging intact human organs with local resolution of cellular structures using hierarchical phase-contrast tomography. *Nat Methods* (2021). <https://doi.org/10.1038/s41592-021-01317-x>



## ParlaMint

ParlaMint – harmonised corpora of parliamentary records in around 20 languages available for the study of public debate about COVID



**COVID-19 Data Portal** About Tools FAQ Related Resources

Viral Sequences Host Sequences Expression Proteins Networks Cohorts More

## Social sciences & humanities

Accelerating research through data sharing

Search  Search

Examples: ... [Advanced search](#)

Showing 15 of 524 in All > Social sciences & humanities > CESSDA catalogue

Data types

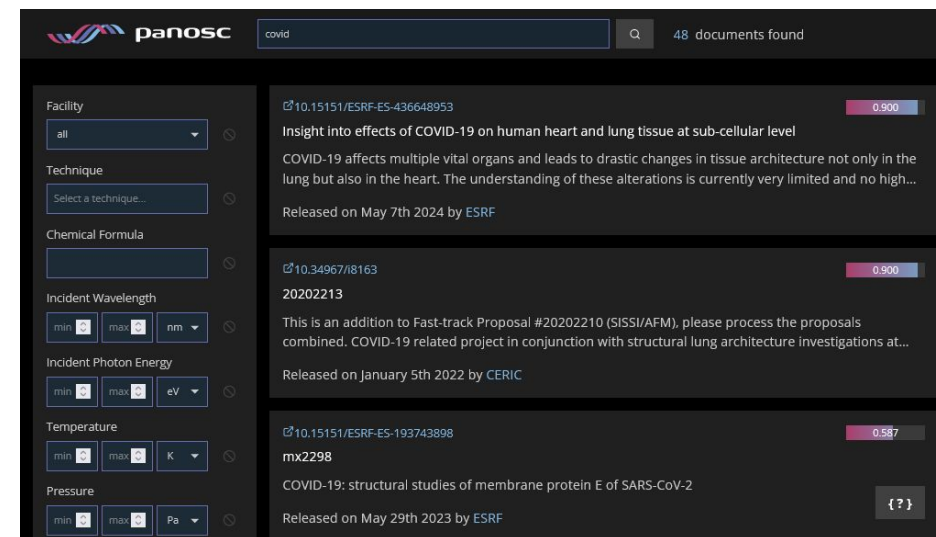
ID	Name
10.5255/UKDA-SN-855317	Facilitating the Public Response to COVID-19 by Harnessing Group Processes, 2020-2021
10.5255/UKDA-SN-855604	Multi-metric Evaluation of the Effectiveness of Remote Learning in Mechanical and Industrial Engineering
10.5255/UKDA-SN-8794-3	Quarterly Labour Force Survey, December 2020 - February 2021
10.5255/UKDA-SN-854795	Interviews with UK School Staff during the COVID-19 Pandemic, 2020
10.7802/2399	2020 ELWar Croatian and Serbian Election Survey



# PaN Search API with Federated Search Portal

Federated Data Search Service

PaN Search API

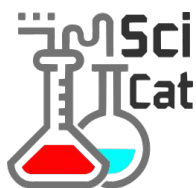


Adapter

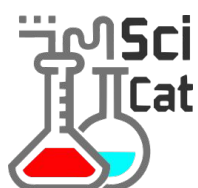
Proprietary  
Meta Data  
System



Adapter



Adapter



Adapter



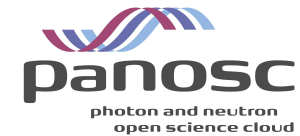
<https://data.panosc.eu>

Find data on: *covid, alzheimers, protein xyz, dinosaurs, batteries, ...*





Science clusters contribute users to the  
viable  
European Open Science Cloud





# Target Groups for ENVRI Products and Services



**Scientific  
Communities**

Experienced users of ENVRI products access data portals of RIs directly via RI portals or APIs

**Research  
Infrastructures**

RIs share knowledge and training resources across scientific domains and foster evolution of RIs

**EOSC**

EOSC users access ENVRI ecosystems through the platform ENVRI-Hub guided by rich metadata

# Users



**Project lead:** Emma Karoune, Historic England

<https://open-phytoliths.github.io/FAIR-phytoliths/>

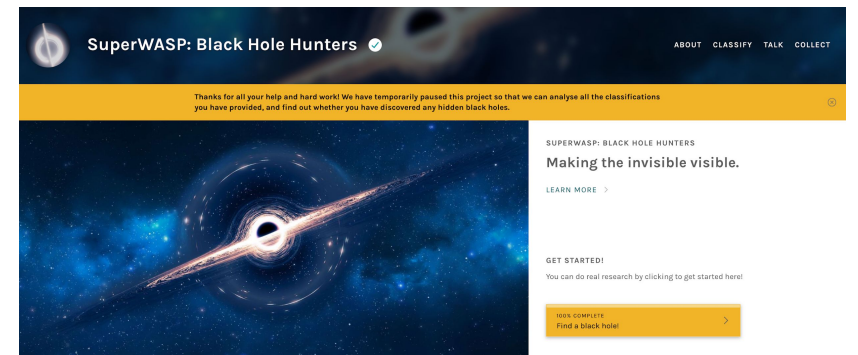


**Accessible and scalable detection and identification of foodborne pathogens**

**Team lead:** Bérénice Batut, University of Freiburg

**Industry partner:** Biolytix AG

**Project team:** Ralf Seyfarth, Anna Henger, Engy Nasr



<https://www.zooniverse.org/projects/hughdickinson/superwasp-black-hole-hunters>

Science clusters contributions to a (minimally)  
viable  
European Open Science Cloud

