OSCARS

Open Science Clusters' Action for Research & Society

Astro-CC Pilot Project

Community Engagement meeting, on-line, 26 February 2025

Funded by the European Union

Astro-CC Pilot

- A pilot project for an *Astronomy Open Science Competence Centre.*
- *Enable astronomy research communities to accelerate their use of Open Science by supporting the implementation of FAIR principles.*
- ***'Competence Centre events'*** will provide training on:
  I. Implementation of interoperable services.
  II. Development of the underlying "Virtual Observatory" data sharing framework and its integration in EOSC.
  III. Exploitation of the system for scientific research – *Schools.*

- Funded by a “cascading grant’ of the OSCARS project (250 k€).
- Astro-CC is a 2yr project: 2025 – 2027.
- *Coordinator:* Mark Allen (Strasbourg astronomical Data centre, CDS)
- *Partners: CDS, INAF, INTA, UHEI, Obs Paris*

- *Team:*

  Manon Marchand (CDS), André Schaaff (CDS), Ada Nebot (CDS), Sébastien Derriere (CDS), Marco Molinaro (INAF), Enrique Solano (INTA), Joachim Wambsganns (UHEI),Markus Demleitner (UHEI), Margarida Castro Neves (UHEI), Baptist Cecconi (ObsParis), +

- *A project structured around community events:*

1 Data-Provider Forum

2 Technology Forums

2 Scientific Training events

- *The goal of this **“engagement meeting”** is to get your input about what you’d like to see in these events.*

Astro-CC Pilot

- Builds on the experience of past projects.
- Widens the scope to all astronomy-related communities.
- Is done in the context of OSCARS and the development of the European Open Science Cloud (EOSC).

Asterics
Astronomy ESFRI & Research Infrastructure Cluster

ESCAPE
European Science Cluster of Astronomy & Particle physics ESFRI research Infrastructures

IVOA

eurPLANET 2024 Research Infrastructure

EURO VO

eosc

ABOUT OSCARS

OSCARS is a four-year Horizon Europe project that will foster the uptake of Open Science in Europe by consolidating the achievements of world-class European RIs in the ESFRI roadmap and beyond into lasting interdisciplinary FAIR data services and working practices.

Fostering the uptake of Open Science in Europe

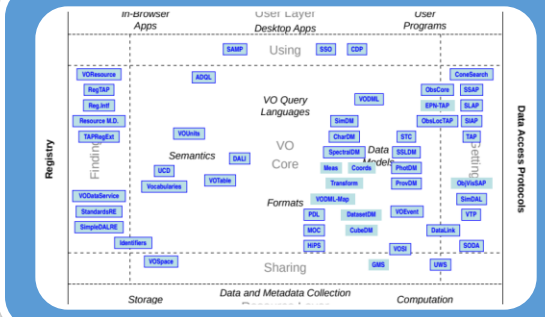
OSCARS will strengthen the role of the Science Clusters (SCs) in the European Research Area (ERA) by developing **Community-based Competence Centres (CCCs)** and **Composable Open Data and Analysis Services (CODAS)**, and by fostering the implementation of **Open Science projects and services** funded through a cascading-grant mechanism.

Led by:

SCIENCE-CLUSTERS.eu
Research Infrastructures for Open Science

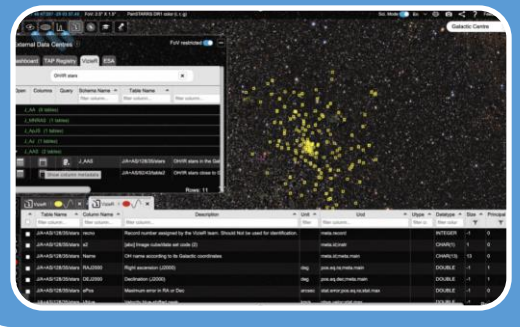
eosc

Vision of the International Virtual Observatory Alliance



Develop a **FAIR** data framework for astronomy

- Interoperability standards (VO framework) amongst astronomical (ground and space based) archives
- Publishing tools for data centres



Enable new science through the VO

- Multi-wavelength -messenger science, combining datasets from multiple sources
- Data discovery and data access tools
- Data analysis and visualization tools

World wide collaboration amongst astronomical VO projects

- Created in 2002, 22 projects today
- An alliance of national and international projects
- Diversity makes IVOA's richness

ESCAPE - European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures

VO activity in ESCAPE (WP4/CEVO)

- Helped ESFR/RI to adopt/use VO standards
- Software/Tools development
- **Tech Forums**
- **Data Provider forum**
- **VO School "Scientific training events"**

The Data Provider Forum

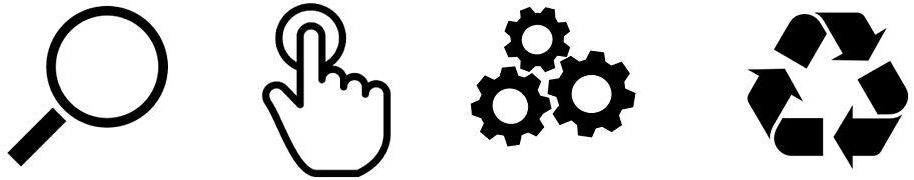
- Aimed at people/projects/IRs running archives, services
- Sharing expertise on implementation of standardised services.
- Examples of operational services at Research Infrastructures.
- Training tutorials on how to publish data services
- Specific examples:
  - Training on how to connect services to the VO Registry and how this relates to the on-boarding of services to the EOSC.
  - Publication of very large survey data in the standardised HiPS format, making these data available in the interactive visualisation tools (Aladin Lite) that were supported in the ESCAPE project.

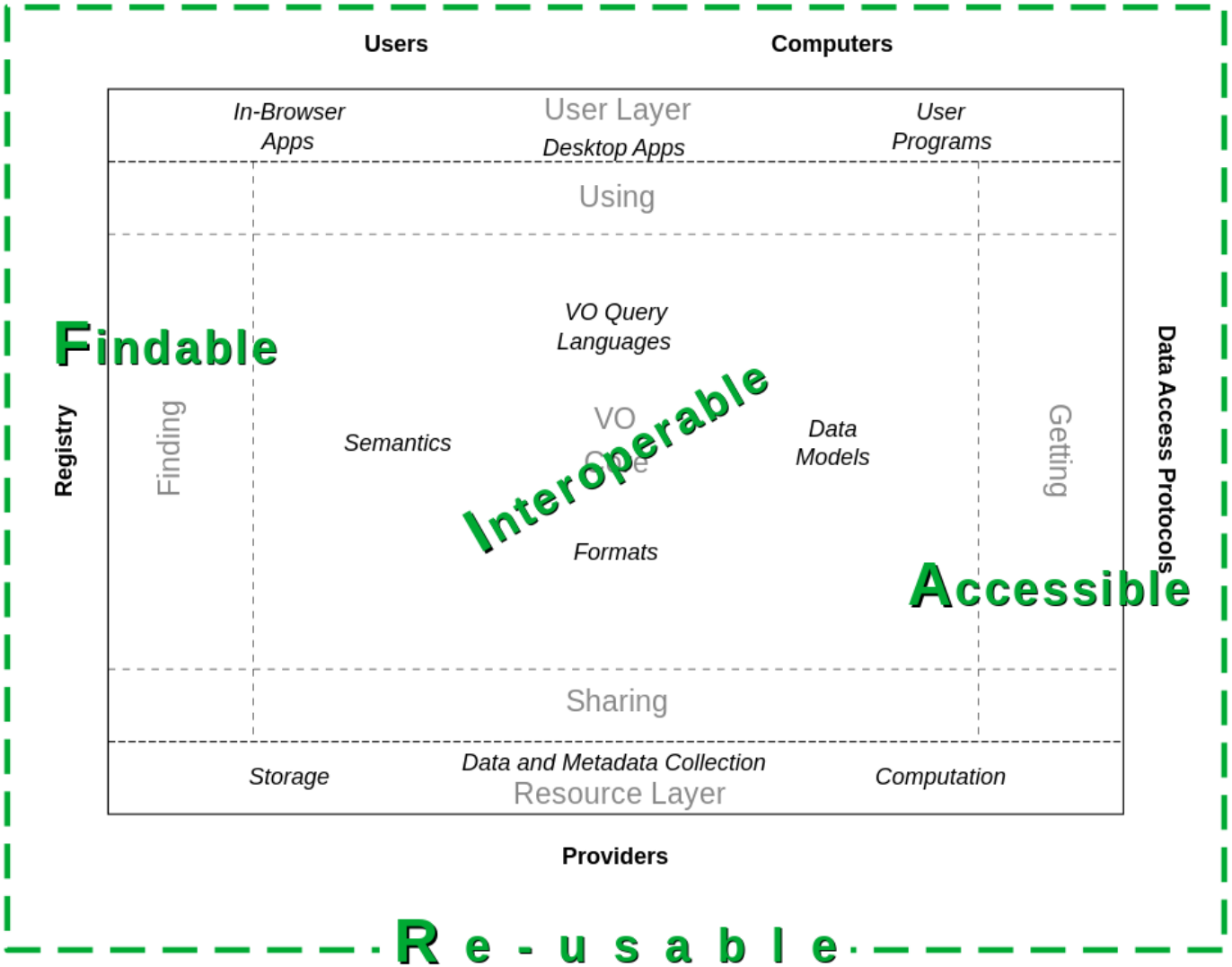
The Technology Forums

- Engage with engineers/researchers who contribute to open astronomical tools/services and who also contribute to the development of interoperability standards.
- **Share expertise – hands-on hackathons**
- Identify the needs of RIs for standardisation.
- Preparation of European input for IVOA interoperability meetings.
- Share experience about using EOSC systems.

IVOA Architecture

Findable Accessible Interoperable Reusable

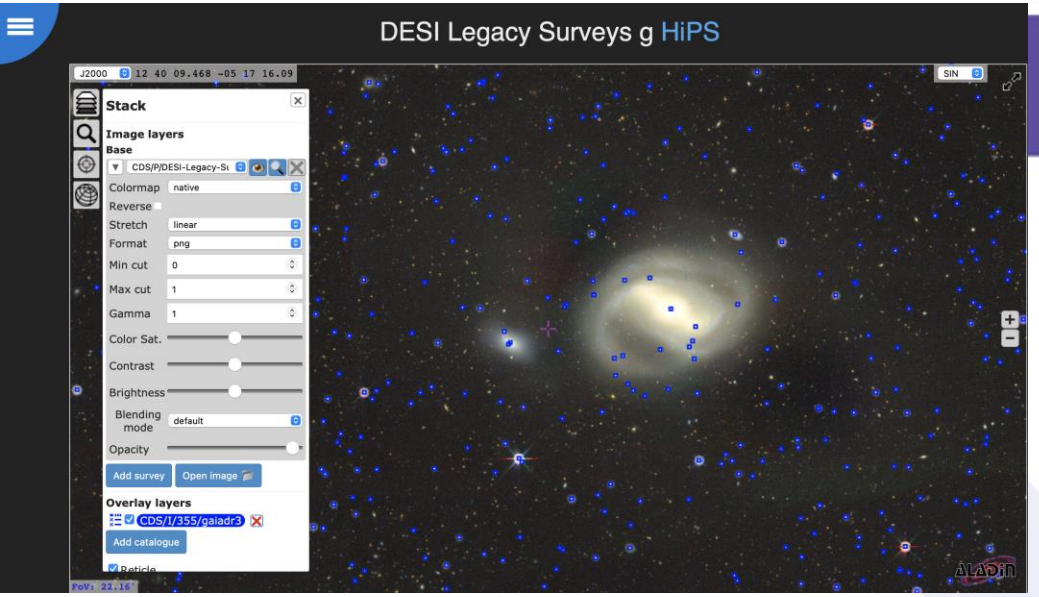


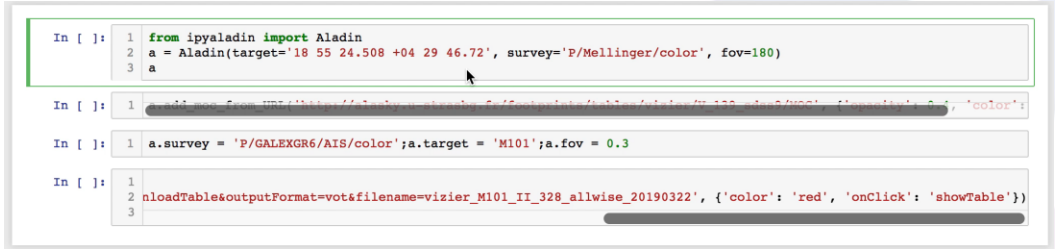


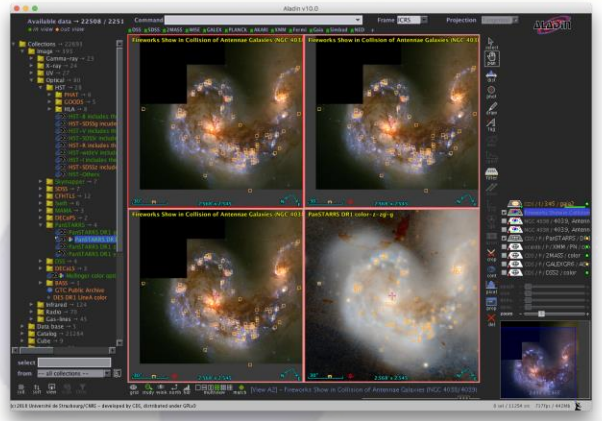
The Scientific Training events

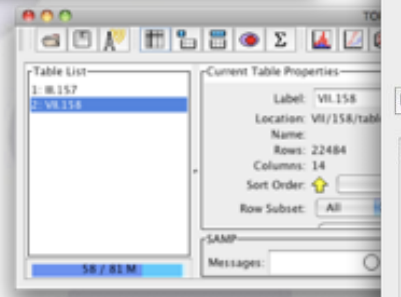
- Intended audience is Ph.D students and early-career researchers.
- Tools and services are presented using science-case tutorials.
- Expert support is provided for the use of the tools and services for the participants' own science projects.

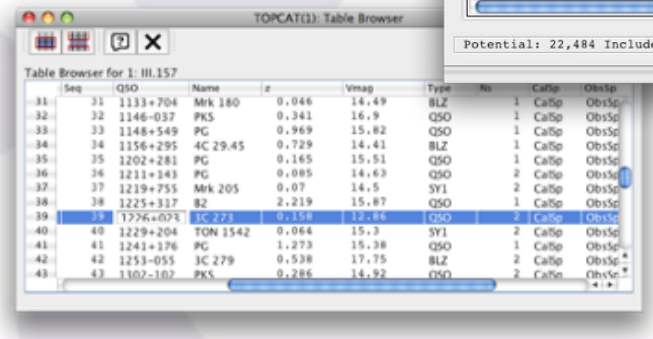
VO interoperability

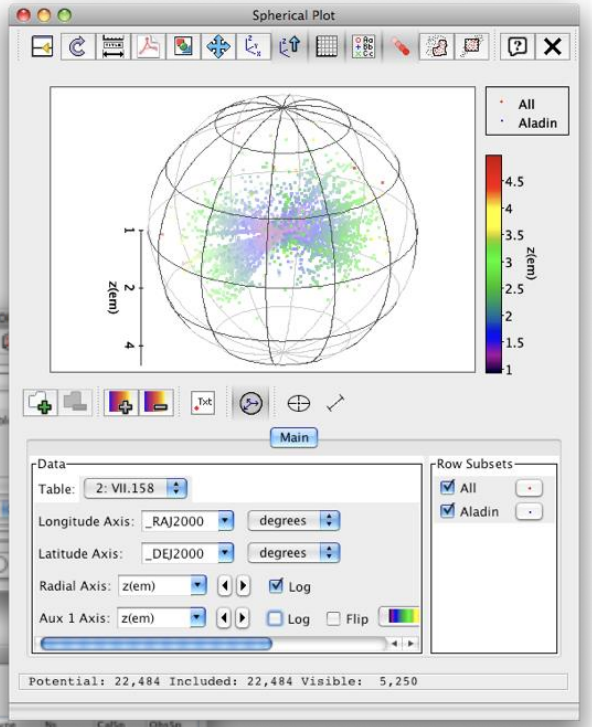












Broadcast

Virtual Research Environment of:
Services, apps, notebooks, APIs etc.

Timeline

Year 1:

- **Technology Forum event 1** (Trieste)
- *(Input to IVOA, June 2025) (Presence at EAS June 2025)*
- **Scientific Training workshop/school event 1** (Madrid)
- **Data Provider event** (Heidelberg)
- *(EOSC symposium)*

Year 2:

- **Technology Forum event 2** (Paris)
- *(Input to IVOA, ~May 2026) (Presence at EAS ~July 2026)*
- **Scientific Training workshop event 2** (Strasbourg)
- Final report, feedback to OSCARS / EOSC.