VRE Working Group Meeting

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General News

- Indico category: https://indico.cern.ch/category/17065/

- Rolling minutes: gdocs link

- Last meeting (5 Nov 2024): https://indico.cern.ch/event/1472833/

General News II

- **Proposal communication channel: Mattermost**
  - **Open Source**
  - Alternative channel to emails (quicker / less formal)
  - **Instance** needs **maintenance**
    - Any partner willing to host it ? (JIVE ?)
    - CERN mattermost could be used.
      - **External collaborators** can <u>easily join</u> thanks to the new CERN SSO (Accounts managed at team level)
      - <u>CERN Computing rules</u> must be accepted, though
  - Slack → **Proprietary code** + **messages** being **erased** after certain time

VRE Working Group context: OSCARS (and more!)

- **OSCARS in few words:**
  - **Consolidation** of cluster achievements into interdisciplinary **services.**
  - **Development** of new Open Science Projects.

- **VRE - WG:**
  - Maintain ESAP + VRE communities together - keep the expertise !
    - OSCARS-level: Plus any other a AFs community (physics and more...)
  - Build common roadmap
    - OSCARS-level: exchange with other clusters
  - Benefit from the community !

CLOCCs vs. CCCs

Cluster Open Science Competence Centres (CLOCCs)
Community-based Competence Centres (CCCs)

A CLOCC is a virtual hub dedicated to fostering research excellence through training and knowledge transfer.

The CCCs are community-based initiatives supported by a collaborative network of people in the context of the Science Clusters **providing expertise, best practices and services** in relation to Open Science, and the promotion of cross-disciplinary collaboration.

ESCAPE CCC operating - a roadmap

Strategy:

1. Establish an internal list of projects being developed within each cluster

2. Establish a consensus about synergies and compatibility among different projects
   a. Keep the straw-dogs as reference roadmap

3. Build a taskforce

4. Prepare a program of work and implement it

5. Engage with other clusters (that have done the same) and find similarities and/or composability potential to propose as "activities" in the events

ESCAPE's RIs play a critical role in ensuring that researchers are empowered to access, manage, and analyse vast amounts of scientific data, and to leverage the European Open Science Cloud (EOSC) for seamless data sharing and collaboration. The ESCAPE Competence Centre will focus on fostering cross-community engagement and promoting the use of ESCAPE's unique resources such as:

- **The ESCAPE Data Infrastructure for Open Science (DIOS)**: A federated data lake offering scalable storage and computational resources to manage the large data volumes generated by ESCAPE RIs.
- **The ESCAPE Open-source Scientific Software and Service Repository (OSSR)**: A curated platform for sharing scientific software and workflows that support Open Science practices.
- **Virtual Observatory and Science Platforms**: Promoting the use of open tools for accessing astronomical and multi-messenger data, enabling researchers to seamlessly explore and analyse multi-wavelength and multi-domain datasets.
- **Citizen Science Platforms**: Facilitating public engagement and crowd-sourced data analysis initiatives, connecting scientists with citizen scientists in a collaborative effort.

To achieve these goals, the ESCAPE Competence Centre will:

- Raise **awareness of funding opportunities** for Astronomy and Particle Physics facilities.
- Promote the use of **FAIR principles** (Findable, Accessible, Interoperable, Reusable) for data across ESCAPE RIs.
- Develop a shared, discipline-specific **vocabulary for Open Science**, enhancing interoperability across research domains.
- Expand the existing **ESCAPE OSSR** and **Data Lake** to foster widespread adoption of Open Science tools and services.
- Build **a network of experts** to assist and guide researchers in the adoption of Open Science and EOSC services.
- Enrich the **ESCAPE Training Catalogue** with new content focused on practical skills in data management, scientific software, and open research practices.
- Organize **events and training programs** aimed at supporting data-intensive research and enhancing collaboration within the ESCAPE community.

Are you part of the ESCAPE community? Would you like to collaborate with us?

Please contact us at: competence.centre@projectescape.eu

CONTACT THE ESCAPE COMPETENCE CENTRE

Communities Roadmap Round Table and next steps

On 5 November

- ET, PUNCH4NFDI and LAPP presented their plans / roadmaps

Today's meeting

- Many other communities presenting.

Next meeting: January

- Summary of all contributions: commonalities between all
- Proposal of Actions at VRE WG level

BackUp Slides

ETAP: Einstein Telescope Analysis Portal

PI: Paul Laycock (UniGe)

Team Members: Volodymyr Savchenko (UniGe), Hubert Degaudenzi (CERN), Federica Legger (INFN, cross-coordination with MADDEN)

Institutions: University of Geneva (UniGe)

ESCAPE WG link: DIOS (WG2), ESAP (WG5)

Keywords: gravitational waves, multi-messenger science, Einstein Telescope, data lake, VRE, metadata, monitoring, sustainability

Summary: The project will build on the ESCAPE Virtual Research Environment (VRE) to produce the Einstein Telescope Analysis Platform, ETAP, a common computing platform for both ET and citizen scientists. The portal will integrate data from multiple RIs and utilise advanced tools, supporting both simple jupyter notebooks and complex, reproducible analysis workflows in REANA. It aims to extend ESCAPE VRE's capabilities to work with multiple data lakes. It will build on previous solutions to provide FAIR metadata management for Open Science and grant experiment metadata access using a coherent interface for multiple RIs. Additionally, it will provide computing resource monitoring for Open Science sustainability.

COPLI: Creating a FAIR Open Science Pipeline for high-resolution LOFAR Imaging

PI: Reinout van Weeren (LU)
Team Members: Jurjen de Jong (LU)
Institutions: Leiden University (LU)
ESCAPE WG link: OSSR (WG3), ESAP (WG5)
Keywords: LOFAR radio telescope, high-resolution LOFAR imaging, automated pipelines
Summary: COPLI will develop an interoperable and sustainable processing pipeline for widefield high-resolution LOFAR imaging. The pipeline will be capable of running in a largely automated fashion on large-scale computing infrastructures. All science-ready data products will be ingested into a FAIR and trusted repository that is federated with EOSC to make them visible and accessible to the global astronomical community.

The Astronomy Dark Matter Test Science Project

PI: Stephen Sergeant
Team Members:
Institutions: The Open University
ESCAPE WG link: DIOS (WG2), ESAP (WG5)
Keywords: Dark Matter, astronomy, astronomical services, ESCAPE data lake, observational astronomy, experimental astronomy VRE, EUCLID, Vera Rubin, gravitational lensing

Summary: Astro-DM TSP will develop essential tools for analysing strong gravitational lensing, and provide insight into dark matter, by utilising existing services from the ESCAPE Science Cluster and ESA, such as the ESCAPE data lake and Virtual Research Environments. Tools developed will support future research across multiple major RIs (HST, JWST, and NASA's Roman space telescope).

FSD: Federation Of Solar Data

PI: Pavol Schwartz (AI SAS)

Team *Members*: Ján Rybák, (AI SAS), Robbe Vansintjan, (ROB), Ilaria Ermolli (INAF), Svetlana Berdyugina (IRSOL), Renzo Ramelli (IRSOL), Manuel Collados Vera (IAC), Jorge Quintero Nehrkorn (IAC), Nazaret Bello Gonzalez (KIS), Peter Caligari (KIS), Mats Löfdahl (SU), Mats Carlsson (UiO), Stein Vidar Hagfors Haugan (UiO)

Institutions: Astronomical Institute of Slovak Academy of Sciences (AI SAS), Royal Observatory of Belgium (ROB), Istituto Nazionale di Astrofisica (INAF), Istituto ricerche solari Aldo e Cele Daccò (IRSOL), Instituto de Astrofisica de Canarias (IAC), Leibniz-Institut für Sonnenphysik (KIS), Stockholm University (SU), University of Oslo (UiO),

ESCAPE WG link: VO (WG4), *ESAP* (WG5)

Keywords: Solar data, SOLARNET Virtual Observatory, IVOA standards, astrophysics, geophysics, space physics, meteorology, solar-energy technologies, space technology, VO, metadata

Summary: FSD will ensure accessibility, interoperability and reusability of existing solar datasets and archives from different facilities, integrating solar data into a shared framework accessible to the global astrophysical community, applying SOLARNET and IVOA standards and suitable network solutions to achieve FAIR-compliance. The SVO web client will allow users to easily search for and find data across datasets, and in the Heliophysics Event Knowledge Base (HEK). Web services and clients will also allow scientists in related fields (geophysics, space physics, meteorology, as well as in applied research such as solar-energy technologies, space technology) to search the resulting metadata, review results, and efficiently access solar data.