ESCAPE

European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures

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Bringing astronomy, astroparticle & particle physics into the European Open Science Cloud:
Findable, Accessible, Interoperable, Reusable

Why combine multi-messenger astronomy and accelerator-driven particle physics?

A deluge of data is expected in the next years by the next generation facilities prioritised in the European Strategy Forum on Research Infrastructures (ESFRI), and other world-class projects. Common problems invite common solutions. ESCAPE provides a framework for the FAIRness of data and software interoperability: an easy access to data registry and shared software, training for open science and the virtual observatory, a common science analysis platform, a data lake cloud services, and citizen science experiments.

ASTRONOMY & ASTROPARTICLE PHYSICS — PARTICLE PHYSICS

Investigating the two extremes, from the largest-scale structures in the observable Universe to the most fundamental particles, the astronomy-related projects and the accelerator-based particle physics facilities will together open new paths towards the understanding of the Universe. ESCAPE leverages astronomy and particle physics aligned challenges of data-driven research as well as shared long-standing expertise in large-scale computing and data management services.

Who does ESCAPE involve?

- e-infrastructures
- European Open Science Cloud Governance
- ESFRI Projects
- Policy Bodies
- Industry, namely Small and Medium Enterprises
- Pan-European Research Organisations

What will ESCAPE produce?

- **ESCAPE CS** | Citizen Science
- **ESCAPE DIOS** | Data Infrastructure for Open Science
- **ESCAPE OSSR** | OS Scientific Software and Service Repository
- **ESCAPE ESAP** | Science Analysis Platform
- **ESCAPE VO** | Virtual Observatory

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ESCAPE Main Goals

- Establish a single scientific cluster of astronomy ESFRI and particle physics communities.

- Design, implement, and operate a prototype data lake -a federated data infrastructure as an open access data service for the ESFRI projects.

- Extend astronomical Virtual Observatory standard into the domains of solar physics, particle physics and astroparticle physics.

- Support community-foundation approach for continuous scientific data/software/tools/services development.

- Training ESFRI facilities staff to develop skills for data stewardships and data FAIRness.

ESCAPE Main Impacts

- **Improve access to data and tools** to unlock innovation for the society at large.

- **Facilitate interoperability in research** between different sciences, through to increase researchers' efficiency.

- **Foster the establishment of global standards, ontologies and interoperability** for scientific data.

- **Provide data with FAIR (Findable, Accessible, Interoperable and Reusable) principles** to increase researchers' efficiency.

- **Create of economies of scale**, through the adoption of common approaches for data management.

- **Build a European cross-border and multi-disciplinary open innovation environment** for research data, knowledge and services.

Facilitating interoperability in research

Join the community & get updates from ESCAPE

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