Integrating the VO framework in the EOSC

Marco Molinaro[1], Mark Allen[2], Sara Bertocco[1], Catherine Boisson[3], François Bonnarel[2], Margarida Castro Neves[4], Markus Demleitner[4], Françoise Genova[2], Dave Morris[5], André Schaaff[2], Giuliano Taffoni[1], Stelios Voutsinas[5]

The European Open Science Cloud (EOSC) is starting to build up, from its portal with metadata catalogues to higher level structures. In the astrophysical domain already exists an open approach to science data: the Virtual Observatory view put in place by the International Virtual Observatory Alliance (IVOA) architecture of standards.
The ESCAPE (European Science Cluster of Astronomy & Particle physics ESFRI research infrastructures) project has, among its tasks, to demonstrate that the VO architecture can be integrated within the EOSC building one and to provide guidelines to ESFRI partners (European Strategy Forum on Research Infrastructures) in doing this.
This contribution reports on the progress of this integration after the first months of work inside ESCAPE.

EUROPEAN OPEN SCIENCE CLOUD

a. Architecture	Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.
b. Data	FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.
c. Services	Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.
d. Access & Interface	Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.
e. Rules	Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust.
f. Governance	Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.

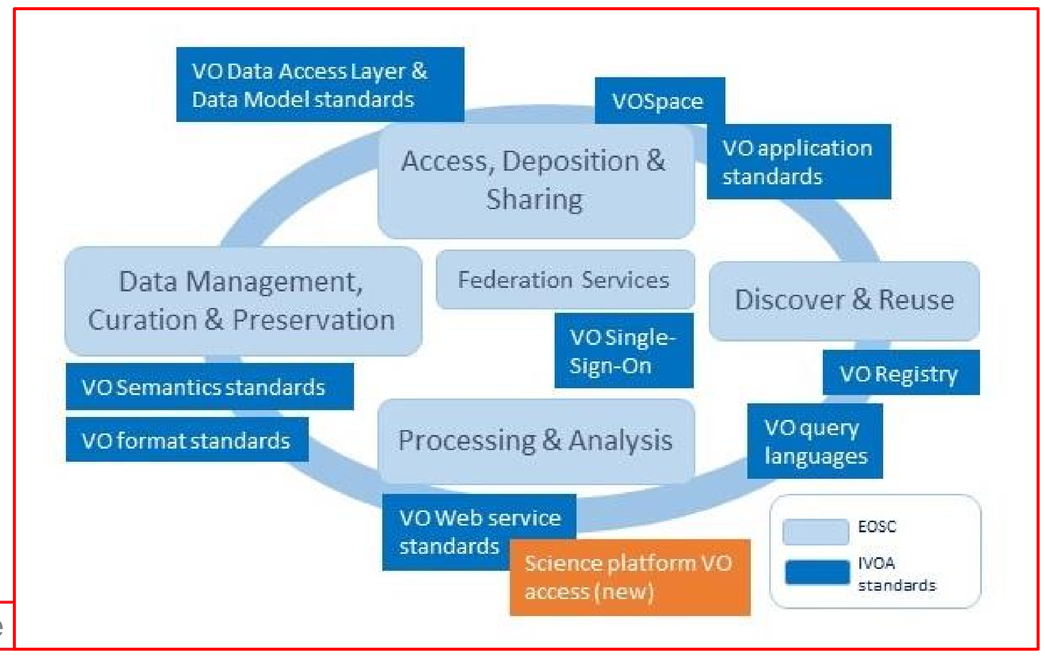
EOSC roadmap

Over the past years, numerous policy makers from around the world have articulated a clear and consistent vision of global **Open Science as a driver for enabling a new paradigm of transparent, data-driven science.**
In Europe, this vision is being realised through the **European Open Science Cloud (EOSC)**.
The EOSC will offer a virtual environment with open and seamless services for storage, management, analysis and re-use of research data, across borders and scientific disciplines **by federating existing scientific data infrastructures**, currently dispersed across disciplines and the EU Member States.

ESCAPE – CEVO – Task 4.1

ESCAPE WP4 CEVO (Connecting ESFRI projects to EOSC through VO framework) in its Task 4.1 has the goal to assess and implement the connection of the ESFRI and other astronomy Research Infrastructures to the EOSC through the Virtual Observatory framework. It will do so by:

- interfacing the VO framework with the EOSC;
- build an Astronomy portfolio of VO services;
- contributing to the EOSC Hybrid Cloud;
- containerising domain-specific services.



VO mapping onto the EOSC data lifecycle

ACTIVITIES

Planning

- Inclusion of the VO Registry into the EOSC service catalogues;
- assessment of the methods for contributing an Astronomy Portfolio to the EOSC Marketplace;
- study of accessing VO-compliant data and services using science analysis platforms (in coordination with WP5);
- Assessment of the possibility to bring existing VO standards for data sharing (VOSpace) within the EOSC services;
- Identification of existing VO services or tools to serve as test-cases for containerization.

Ongoing

- VO Resource mapping against EUDAT B2-FIND metadata has been proven possible, first step on Registry inclusion in EOSC (try “IVOA” in the B2-FIND search at http://b2find.eudat.eu/);
- contact points have been identified for catalogue integration and service portfolio;
- first steps in identifying a VOSpace backend storage solution to allow VO standard data sharing;
- preliminary identification of the services and tools to be used in containerization tests.

1. INAF – Osservatorio Astronomico di Trieste
2. Centre de Données astronomiques de Strasbourg (CDS)
3. Observatoire de Paris - Meudon
4. Universität Heidelberg, Astronomisches Rechen-Institut
5. University of Edinburgh

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