



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

CEVO Task 4.1 Progress Report

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WP4 Technology Forum 2
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OUTLINE

- Task activities progress
- D-4.4 overview
- Working plan schematic progress
- Plans for the remain of the project



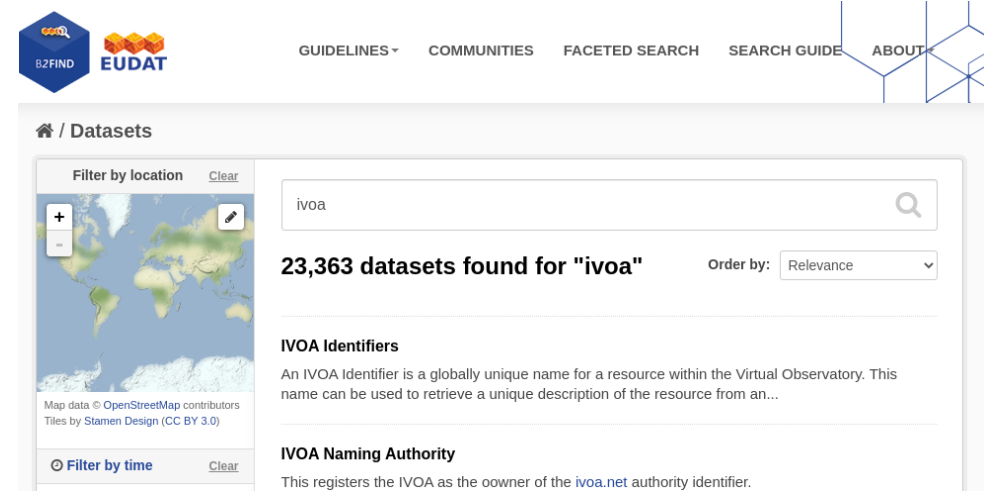
Task 4.1 – VO EOSC integration

Integration of astronomy VO data and services into the EOSC

- Assess and implement the connection of the ESFRI and other astronomy Research Infrastructures to the EOSC through the Virtual Observatory framework
- Activities involved
 - interfacing the VO framework with the EOSC
 - build an Astronomy portfolio of VO services
 - contributing to the EOSC Hybrid Cloud
 - containerising domain-specific services



- Registry of Resources
 - IVOA Registry, DataCite extension, OAI-PMH & RegTAP
 - GAVO (UHEI) managed full registry harvested by EUDAT B2FIND
- Technical alignment: fine
- Content representation: more complex
 - Machine-actionability
 - Specific to generic research domain requirements mapping
- see: M. Demleitner (Wed. 14 @ 11:00)
 - Using semantics to give B2Find better metadata



The screenshot shows the EUDAT B2FIND search interface. At the top, there are logos for B2FIND and EUDAT, and navigation links for GUIDELINES, COMMUNITIES, FACETED SEARCH, SEARCH GUIDE, and ABOUT. The main content area is titled "Datasets" and features a search bar with the query "ivoa". Below the search bar, it displays "23,363 datasets found for 'ivoa'" and an "Order by: Relevance" dropdown menu. There are two sections: "IVOA Identifiers" with a description: "An IVOA Identifier is a globally unique name for a resource within the Virtual Observatory. This name can be used to retrieve a unique description of the resource from an..." and "IVOA Naming Authority" with a description: "This registers the IVOA as the owner of the ivoa.net authority identifier." On the left side of the search results, there is a map interface with "Filter by location" and "Filter by time" options.



ONGOING

- Service on-boarding
 - Initial test from CNRS-ObAs
 - Identified an INAF-based set of resources
 - working on Provider (political hurdles)
 - granularity looks the challenge
 - H2020 NEANIAS collaboration

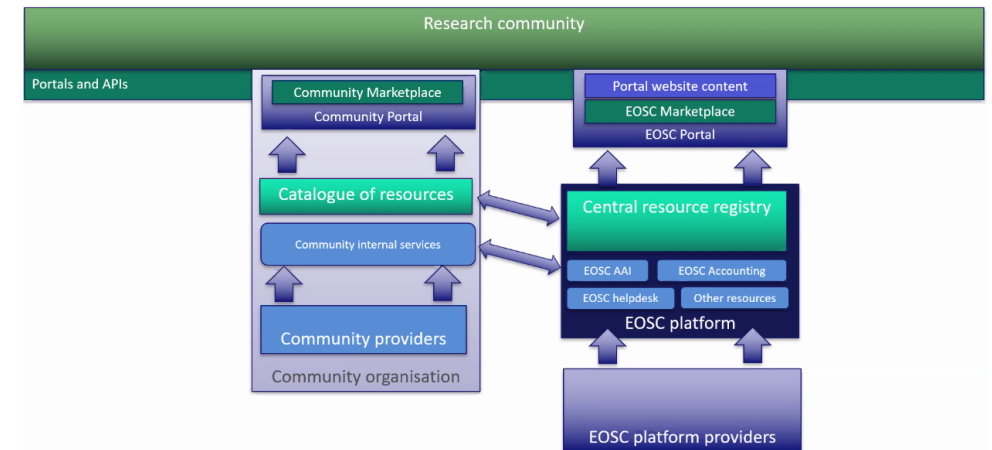
STARTING

- Semantics
 - Semantic interoperability in EOSC: starting
 - Will vocabularies be used as direct resources/services?



- EOSC architecture maturity
 - Inclusion plan for national, cluster, domain, project, ... specific repositories
- Possibly needs connection to WP3 (OSSR) if a custom marketplace for astronomy is pursued
- see B. Cecconi (Wed. 14 @11:20)
 - VESPA-cloud

**EARLY
STAGE**



ONGOING

- Progressed in connection with WP5 (ESAP)
- UEDIN: development of use cases, notebooks and containers for the ESAP platform
 - see Session on Thursday morning
- VOspace with RUCIO backend (INAF & UEDIN)
 - to be discussed with WP2 (DIOS)
 - idea to contribute a service to the ESCAPE/EOSC Cloud solution



~ stalled ~

- Initial containerisation tests with common VO tools were provided at last Tech Forum
- Need to restart the activity, better if connecting with WP3



D-4.4 - Integration Intermediate Analysis

- Deliverable 4.4 “Intermediate analysis report on integration of VO data and services into EOSC”
 - <https://projectescape.eu/deliverables-and-reports/d44-intermediate-analysis-report-in-tegration-vo-data-and-services-eosc>
 - scheduled for KO+18, delayed to KO+22
- Reports the progress (seen in previous slides)
- Adds details on
 - WP4 interaction with other ESCAPE WPs (related to the EOSC integration topic)
 - interaction with other EOSC-related projects
 - FREYA, FAIRsFAIR
 - RDA FAIR Data Maturity IG contribution
 - EOSC FAIR Metrics connected



D-4.4 - Integration Intermediate Analysis (results)

- “...the integration of the IVOA-based open architecture of standards for astronomy into the connected ecosystem of data resources and services in the EOSC is identified as being mostly feasible, but there are still challenges that need to be tackled to actually bring this integration to a mature level.”
- Data and service integration rely on similar, mature standards; machine-actionability, semantic annotations and domain specific standards (e.g. tessellation) are more challenging.
- AAI solutions and requirements start from different approaches. Technical solutions might be the same, credential delegation looks more important to IVOA, licensing and policies more to EOSC.
- Provision of collections and services; granularity differs, IVOA resource additions to the Registry are more automated than the providing steps required by EOSC (and maybe less verified).
- FAIR-ness of the two repositories/systems comes from different considerations; testing of (historical) VO FAIR-ness w.r.t. EOSC FAIR Metrics is needed.



Status Mapping on Deliverable Plan

4.1.a - Interfacing the VO framework with the EOSC.

Inclusion of the VO registry into the EOSC service catalogues to allow EOSC users to identify Astronomy-specific services.

	Feb.'20	Mar.'21
Identify the relevant contacts for EOSC service catalogues and registry related aspects (including B2FIND).	✓	✓
Assess information provided by EOSC to identify the possible pathways for service providers to enter their services into the EOSC service catalogue and determine an approach to include the VO registry.	ONGOING	ONGOING
Participate in the IVOA Registry WG to inform the global IVOA community about EOSC catalogues, and to identify technical aspects of IVOA registry operations relevant to their inclusion in EOSC.	ONGOING	✓
Identify the VO Registry test-bed systems to be used in preparation for inclusion in EOSC.	✓	✓
Establish a timeline for the inclusion of the VO registry into EOSC.	✓	✓
Assess the use of EOSC vocabulary services for the inclusion of established astronomy vocabularies (<i>dependent on EOSC development</i>) for use in cross-disciplinary discovery services.	?	START?
Participate in all relevant EOSC project events (EOSC-Hub, FREYA, OpenAIRE-Advance, FAIRsFAIR)	ONGOING	ONGOING

Might need some rewording



Status Mapping on Deliverable Plan

4.1.b - Build an Astronomy Portfolio of VO services to be contributed to the EOSC Marketplace

	Feb.'20	Mar.'21
Assess the methods for contributing VO services as an Astronomy Portfolio to the EOSC Marketplace.	ONGOING	ONGOING
Analyse the possibilities for operating a customized marketplace for astronomical VO services.	?	START?
Establish a test plan for contributing selected VO services to the EOSC Marketplace (<i>dependent on the results of the above steps</i>).	TODO	?



4.1.c - Contribution to EOSC Hybrid Cloud by federating astronomy data centres.

	Feb.'20	Mar.'21
Assess the available solutions for federating data and computing infrastructures for compute- and data-intensive applications (for computing close to the data), e.g. DataHub.	?	START?
Perform a study of accessing VO-compliant data and services using science analysis platforms (<i>in coordination with WP5</i>).	ONGOING	ONGOING
Assess the possible implementation of existing VO standards for data sharing (VOSpace) within the EOSC services.	ONGOING	ONGOING



4.1.d - Containerised domain-specific services

Web-based remote analysis tools will be tested on the EOSC Cloud and if possible contributed to the EOSC applications and services database.

	Feb.'20	Mar.'21
Identify existing VO services or tools to serve as test-cases for containerization.	ONGOING	~ stalled ~
Establish a timeline for the contribution of successfully tested services to be contributed to the EOSC applications and services database.	TODO	(restart)
Test the harmonisation of the above mechanisms with the design and implementation of a "data lake" (<i>in coordination with WP2</i>).	?	?



Related Deliverables and Milestones for Task 4.1:

D4.4 Intermediate analysis report on integration of VO data and services into EOSC (Report).	Month 18 July 2020
D4.7 Final analysis report on integration of VO data and services into the EOSC (Report).	Month 38 March 2022

**Month 22
November 2020**

D-4.4 reports also (Appendix) the relevant meetings participated by Task partners.

Reasearch Data Alliance Plenary 15	(online)	18 March-10 April 2020
FAIRsFAIR Second Synchronisation Force Workshop	(online)	Series of workshops April-June 2020
EOSC-hub Week 2020	(online)	18-20 May 2020
FREYA Workshop "Persistent identifiers in Research Disciplines"	(online)	5 August 2020
FAIRsFAIR Workshop "Metadata catalogues integration for Interdisciplinary Research"	(online)	11 September 2020
Second ESFRI RIs-EOSC Workshop "Research Infrastructures shaping EOSC"	(online)	6-7 October 2020
FAIRsFAIR Workshop "Metadata Catalogue Integration	(online)	9 October 2020
EOSC Governance Symposium	(online)	19-22 October 2020
Research Data Alliance Plenary 16	(online)	9-12 November 2020
DDI-CODATA Workshop	(online)	20 November 2020



From here to projects' closure

- Attach data holdings to resource descriptions (not only PIDs for metadata)
- Provide relationships among data resources and attached services
- Test, and make easier, the integration of VO-enabled data providers managed resources in the portal
- Deal with current AAI services and solution without preventing public content access
- Work at providing actionability for domain specific services and annotations through the EOSC portal
- Evaluate the position of VO-enabled data with respect to EOSC FAIR Metrics



Thank you!

