

EOSC-Pillar

Coordination and Harmonisation of National & Thematic Initiatives to support EOSC

Solving the service findability and the analytics problem

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Virtual Research Environments

- * Researchers need a **working environment** making available:
 - * the **data** they are willing to use
 - * the **computing capacity** they need
 - * the **services** they are willing to use
- * Every working environment should serve **many users (a community of practice)** rather than a single user:
 - * enact the **collaborative working**
 - * facilitate **co-creation** and **Open Science**, by early sharing new data, results, pipelines / workflows
- * **Velocity** and **multi-tenancy** make traditional approaches in “application” development not viable
 - * **as-a-Service** delivery mode
- * **Open Science** calls for “**sharing** * as convenient/early as possible”
 - * **provider** and **consumer** perspectives

The EOSC-Pillar Way

- * An approach the develop an **interoperable [National/Thematic] Service Catalogue** supporting Service publishing & discovery
- * An approach (catalogue driven) supporting **[Data] discovery** and facilitating early **sharing & publishing**
- * An approach providing communities of practices with **Virtual Research Environments** (by D4Science) and ready-to-use services

<https://eosc-pillar.d4science.org/>

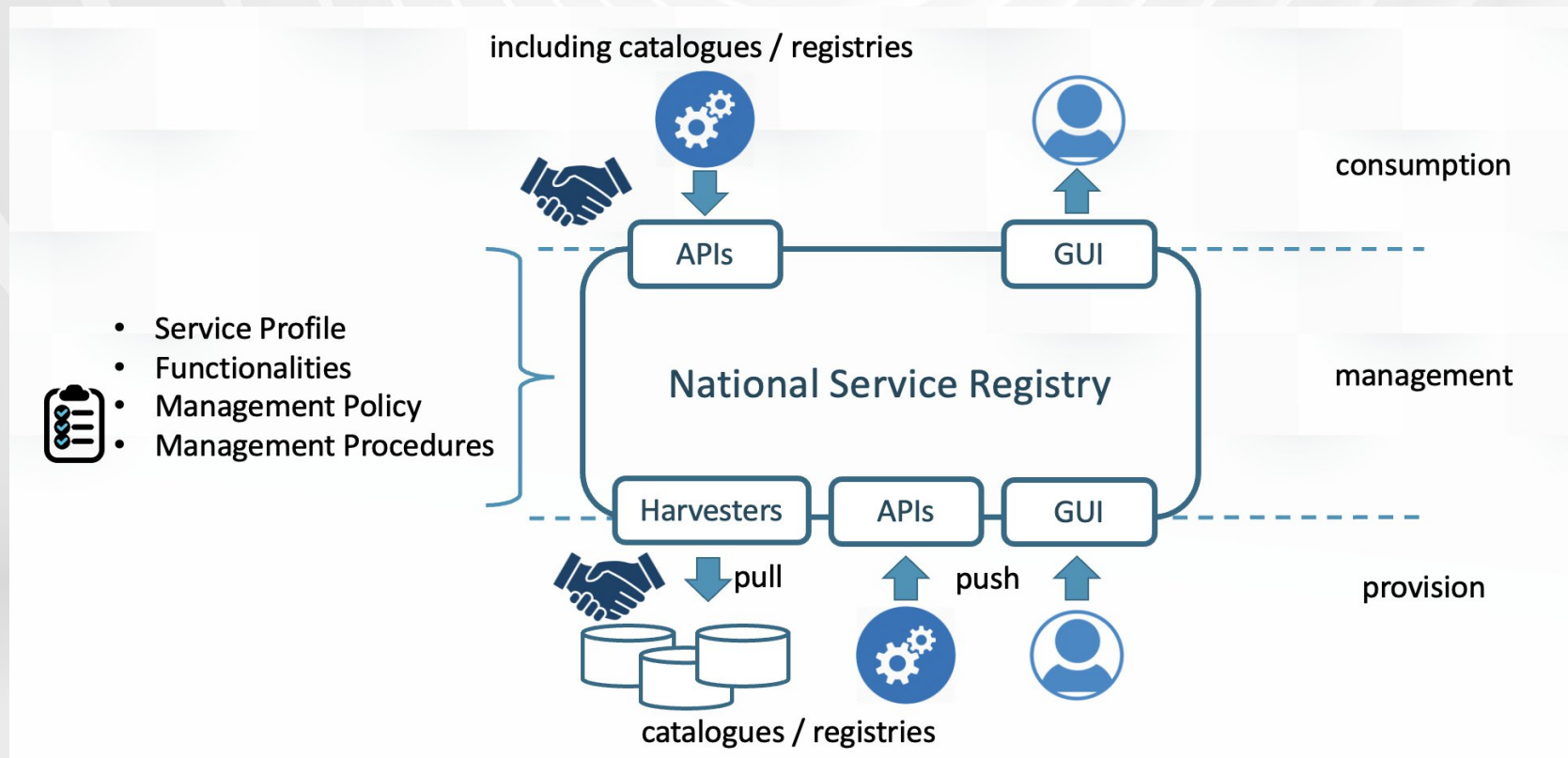
The image shows two screenshots of the EOSC-Pillar Gateway. The top screenshot is the public-facing website, featuring a blue header with navigation links (Home, Explore, Catalogue, Sign In) and a main heading 'EOSC-Pillar | Gateway'. Below the heading is a welcome message and a 'Sign In' / 'Register' button. A footer contains legal notices and funding information from the European Union's Horizon 2020 programme.

The bottom screenshot is an internal dashboard for a user named Leonardo Cardella. It displays a 'Statistics' section with a profile card for 'ACTIVITY GOT' and 'SPACE USED PROFILE STRENGTH'. A 'Catalogue' section shows search results for '253 items', '7 organisation', '48 groups', and '14 types'. A 'News feed' section lists recent updates from the 'EOSC-Pillar Training & Support' team. On the right, there are 'Use Case Environments' and 'Virtual Laboratories' sections, each listing specific services like 'EOSC-Pillar 4 AgriFood', 'EOSC-Pillar 4 COVID-19', 'EOSC-Pillar 4 Earth Science', and 'EOSC-Pillar VLab'.

Below the dashboard is a grid of 16 service icons, each representing a different EOSC-Pillar service. The icons are arranged in a 3x4 grid and include labels such as 'EOSCPillar4Ag.', 'EOSCPillar4Ea.', 'EOSCPillarTS.', 'EOSCPillarOS4.', 'EOSCPillarOSLF', 'EOSCPillarOSTA', 'EOSCPillarRes.', 'EOSCPillarSer.', 'EOSCPillarTra.', 'EOSCPillar_CO.', 'EOSCPillar_Lab', and 'PhDUnipi_OS21..'. Each icon features a unique graphic and the EOSC-Pillar logo.

Developing Interoperable [National / Thematic] Service Catalogues

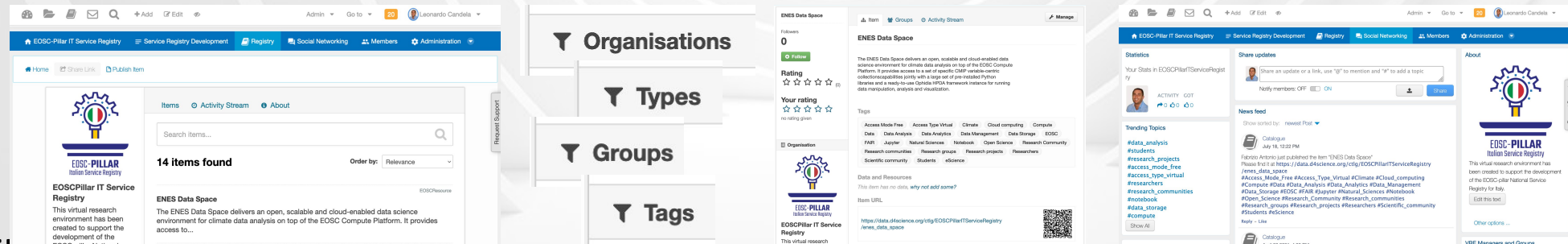
- * Yet another catalogue?
 - * no global catalogue will match the needs of a specific community
 - * Do not start from scratch and cater for interoperability



Developing Interoperable [National / Thematic] Service Catalogues [cont.]

The working environment for the Italian prototype is operational

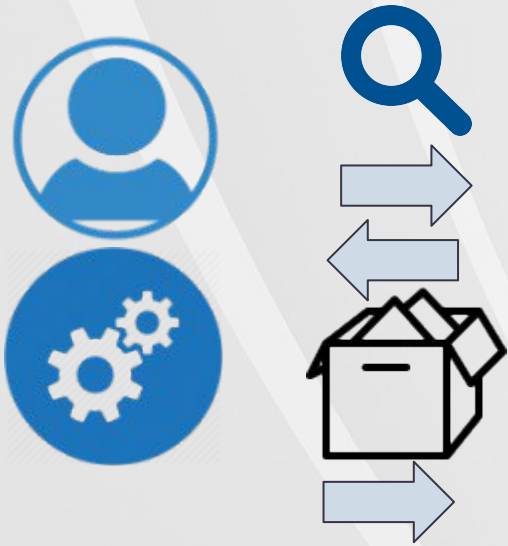
- * <https://eosc-pillar.d4science.org/web/eoscpillaritserviceregistry>
- * Configured with latest EOSC Provider and Resource Profiles
- * Embedded into a VRE for collaborative development
- * Populated with selected services from CNR, GARR, CINECA, CMCC



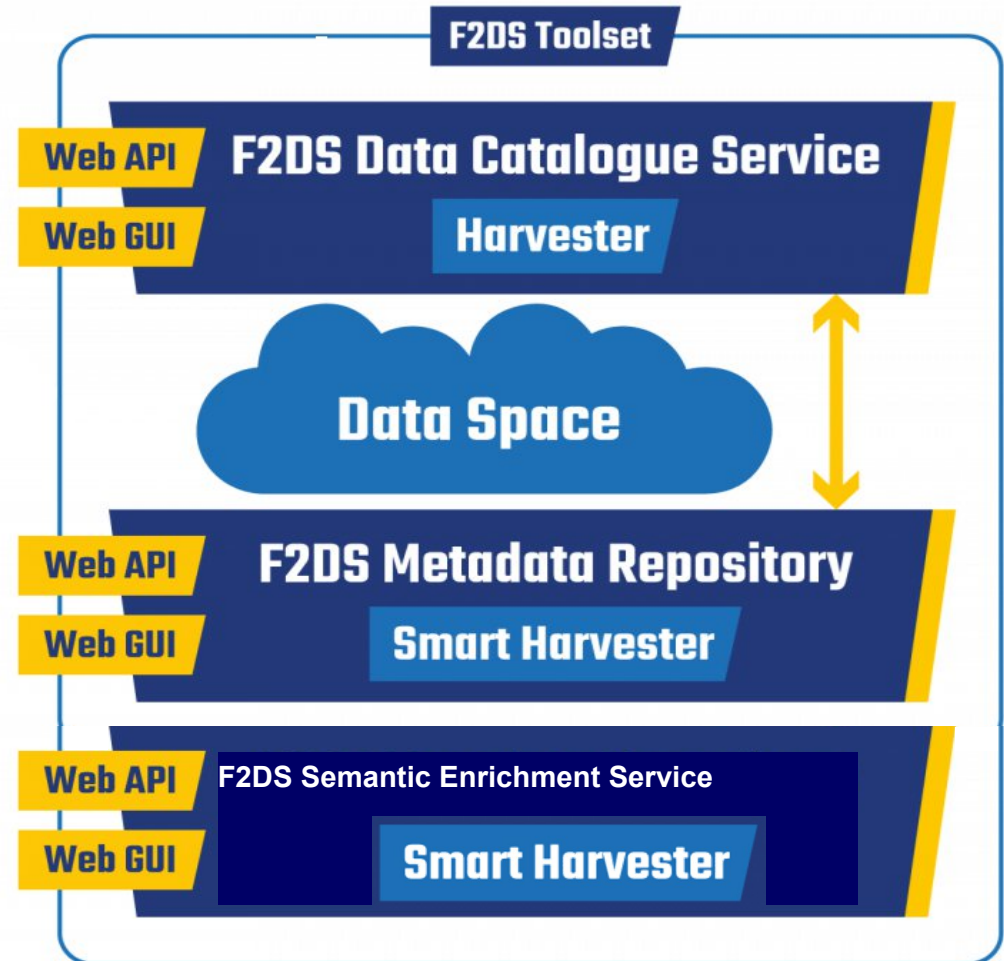
Future works.

- * Reinforce the liaison with the ICDI community
- * Test EOSC Onboarding
- * Sum up the model (technical and organizational), the issues faced, and the lesson learned into a white paper

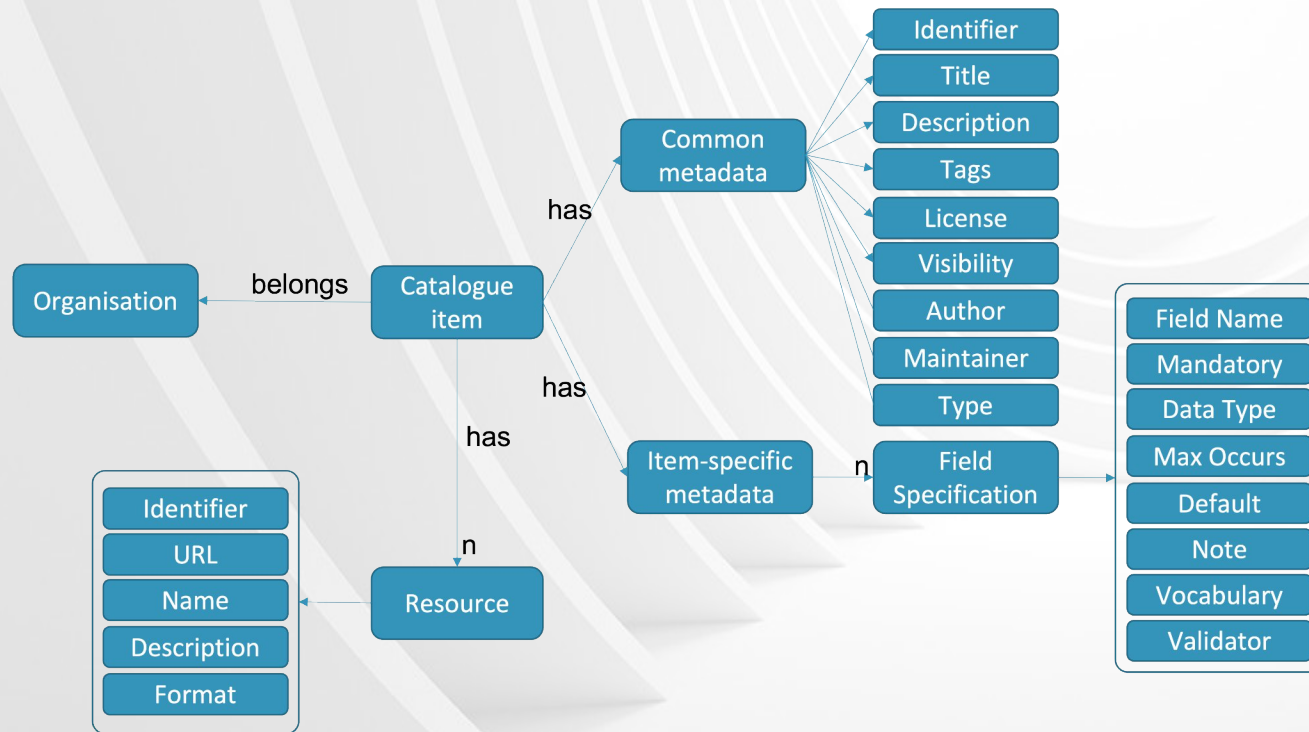
Developing a Catalogue for Data Discovery and Publishing



The screenshot shows the EOSC-PILLAR Research Data Catalogue interface. At the top, it says "Items Activity Stream About" and "Search items...". Below that, it displays "81 items found" and "Order by: Relevance". There are filters for "Organisation", "Group", "Type", and "Tags". The main content area shows a list of items, including "Somatic variant calling" and "SLGFSK-N_231335_r2_undefined". On the right, there is a "Manage" panel with various actions like "GET", "POST", "DELETE", and "PUT". At the bottom, there is a "Raw" view showing XML data.



Developing a Catalogue for Data Discovery and Publishing [cont.]



Rich and Flexible Metadata + As many resources as needed



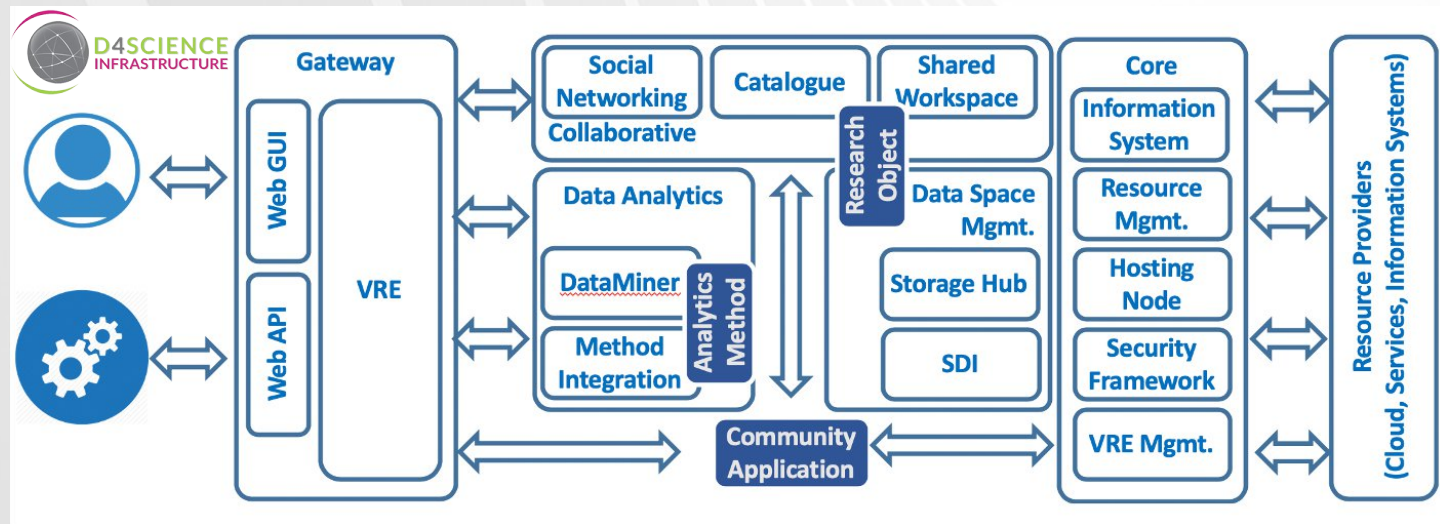
A dataset for analysing the genetic progress in maize: yield in multi site fi...

Breeding and improved agronomic practices increased maize yields with the genetic component evaluated in panels of varieties released over decades. We performed a comprehensive...

TSV PDF TSV TSV TSV PDF TSV TSV TSV TSV TSV PDF PDF TSV TSV TSV TSV PDF TSV
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Virtual Research Environments and Ready-to-use Services

A VRE is an innovative, web-based, community-oriented, comprehensive, flexible, and secure working environments conceived to serve the needs of “modern” science delivered as-a-Service and catering for co-creation*



VRE Definition Wizard

VRE Information

Basic functionalities

Data Analytics

Data Discovery and Access

Summary

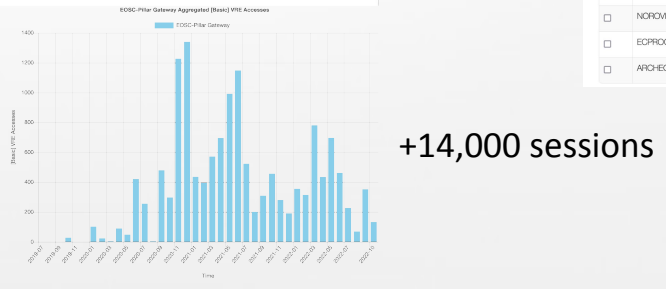
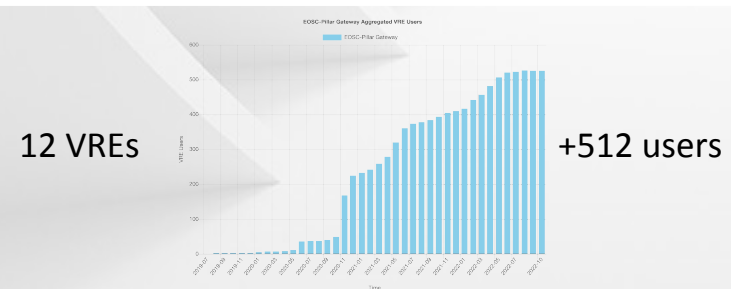
VRE Information

Name:

Designer:

Filter by name

Select	Name	Description
<input type="checkbox"/>	LISTDENAMES	Algorithm that allows to view the available database resources names in the Infrastructure
<input type="checkbox"/>	NCOUTPUTS2CSV_VPA_UCAT_BFT_E	nOutputS2csv: ICCAT (Eastern) Bluefin Tuna Stock Assessment. This set of R and Fortran code have been provided by ICCAT...See more
<input type="checkbox"/>	ICHTHOP_MODEL_MULTIPLE_RUNS	This R code enables to extract multiple observed trajectories from data sources (FADs or Drifters) and to run for each ...See more
<input type="checkbox"/>	FIN_TAXA_MATCH	An algorithm for Taxa Matching with respect to the Fishbase database
<input type="checkbox"/>	TWITTER_OPINION_MINING_ENGLISH	GATE-Cloud Twitter Opinion Mining (English)
<input type="checkbox"/>	STEP_1_VPA_UCAT_BFT_E_RETROS	STEP 1: ICCAT (Eastern) Bluefin Tuna Stock Assessment. This set of R and Fortran code have been provided by ICCAT and F...See more
<input type="checkbox"/>	SCATTERPLOT_DIAGRAM	mathematical diagram using Cartesian coordinates to display values for typically two variables for a set of data
<input type="checkbox"/>	NOROVIRUS_GFA_ALGORITHM	Norovirus GFA Algorithm
<input type="checkbox"/>	ECPROOC	Eddy Covariance Raw Data Processing Tool (Published by Domenico Vitale (domvit) on 2018/09/28 12:06 GMT)
<input type="checkbox"/>	ARCH-ECONOTE_ANNOTATOR_ITALIAN	Annotator of archeology-relevant entities in text. Model for text in Italian (Published by Andrea Esuli (andrea.esuli) o...See more



* M. Assante et al (2019) [Enacting Open Science by D4Science](https://doi.org/10.1016/j.future.2019.05.063) Future Generation Computer Systems [10.1016/j.future.2019.05.063](https://doi.org/10.1016/j.future.2019.05.063)

M. Assante et al (2022) [Virtual Research Environments co-creation: the D4Science experience](https://doi.org/10.1002/cpe.6925) Concurrency Computat Pract Exper [10.1002/cpe.6925](https://doi.org/10.1002/cpe.6925)

Virtual Research Environments and Ready-to-use Services [cont.]

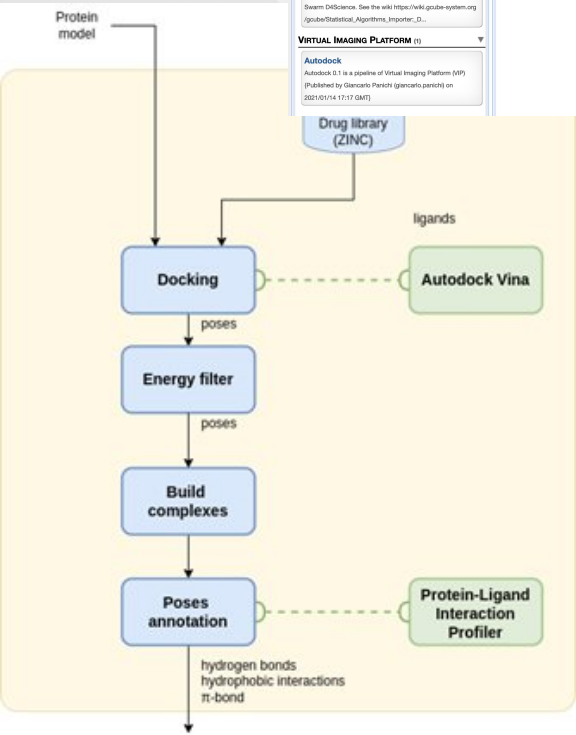
Ready to use services (proposal)	Ready to use services provided as In-kind by the partners	Services from the WP6 call* <small>* presentation in a previous session</small>
<ul style="list-style-type: none"> • The use of acceleration resources (GPU, FPGA) • Galaxy as a service platform - Laniakea@ReCaS service & contribution to Galaxy-E • Virtual Laboratories / Virtual Research Environments • Virtual Research Environment based service for research data publishing • PICO2 • Materials Modelling Market OIE 	<ul style="list-style-type: none"> • Indigo- IAM by INFN-CNAF • FG-iRODS by France Grilles • VIP (Virtual Imaging Platform) by France Grilles • HPC resources by • Cloud computing resources by GARR • Storage services based on iRODS by CINES, KIT and CINECA • VM service by KIT 	<ul style="list-style-type: none"> • ... • ... • AstroODA (MMODA) <p>Service coming from WP5</p> <ul style="list-style-type: none"> • F2DS <p>Services provided by WP6 use cases</p> <ul style="list-style-type: none"> • Software Heritage • Datainrae • Simbad • VITAM

Rich array of services ... more today @ 17:00 - 18:00 Sustainability Track: Sustainability and business models

The COVID-19 VRE




Name	Owner	Type	Last Update	Size
1-s2.0-S0167739X1831464X-main.pdf	Alessandro Orro	application/pdf	11 Dec 04:58 PM 2020	2.5 MB
esempio.docx	Alessandro Orro	application/vnd.openxml...	11 Dec 04:59 PM 2020	4 kB
stat_algo.project	Alessandro Orro	application/xml	11 Dec 05:43 PM 2020	4.4 kB
sample data	Leonardo Candela	Folder	20 Dec 11:44 AM 2020	
dataset-demo	Alessandro Orro	Folder	07 May 09:09 AM 2021	
dataset-demo.zip	Leonardo Candela	application/zip	11 May 04:40 PM 2021	193.8 kB
inputData.zip	Leonardo Candela	application/zip	18 Oct 07:17 AM 2021	51.8 kB



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Thank you!

Get in touch with us!



www.eosc-pillar.eu



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[/company/eosc-pillar](https://www.linkedin.com/company/eosc-pillar)



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