

argos

 OpenAIRE  
ResearchGraph

# FAIR ma-DMPs & Science Knowledge Graphs

The OpenAIRE services

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# Acknowledgements



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CNR & OpenAIRE CTO



George Kakaletis  
Cite SA

# DATA MANAGEMENT PLANS - TODAY

## Policy

- Public DMPs
- Rich content
- Support

## Technical

- Search & retrieve
- Interoperability
- Semantics

## Adoption

- FAIR practices
- Disciplines / Communities
- Data sharing

- 
- Not Open Access
  - Granularity of content
  - Unclear about the process, where to start, how to get input

- Resource type
- Reused datasets
- Qualified references

- Reproducibility
- Domain Data Protocols
- Input & Output Data

# SCIENCE KNOWLEDGE GRAPHS - TODAY

- **Quite a few exist already** - different use, formats, maturity
  - Scholarly Communication (OpenAIRE Graph, OpenAlex, +commercial ones)
  - National CRIS Systems (PT, FI, RS, EL, ...) - focus on monitoring
  - Domain disciplines ones (EBRAINS, ENVRI, ECRIN, ...) - focus on discovery
- **Challenges**
  - Most looking into publications
  - Some semantics in place, still to come
  - Partial coverage
  - No standards for access or exchange of information

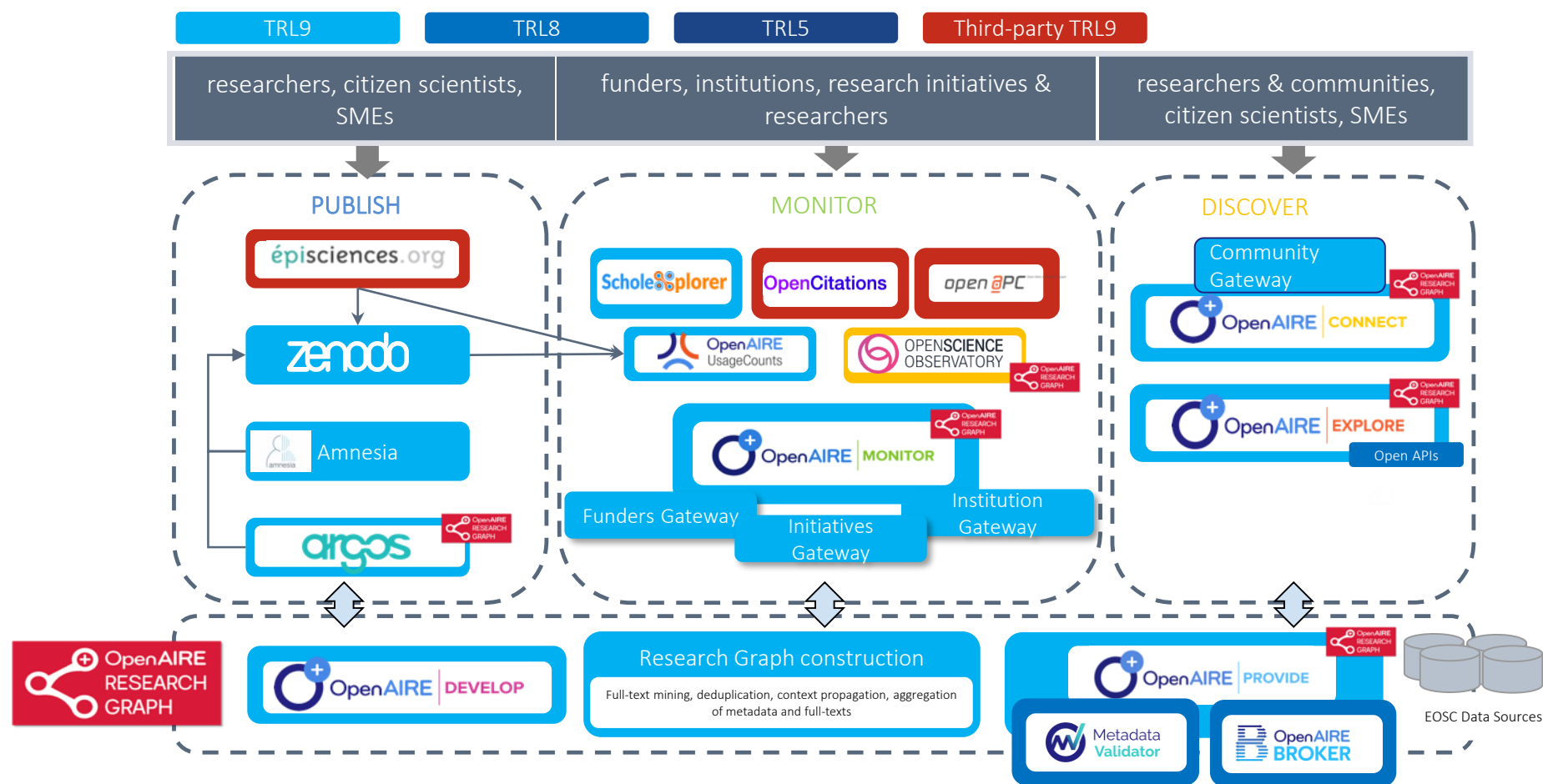
**Scilake**

Horizon Europe project starting in Jan 2023

# The OpenAIRE view

*end-to-end solutions*

# OPENAIRE SERVICES – ALL INTERCONNECTED

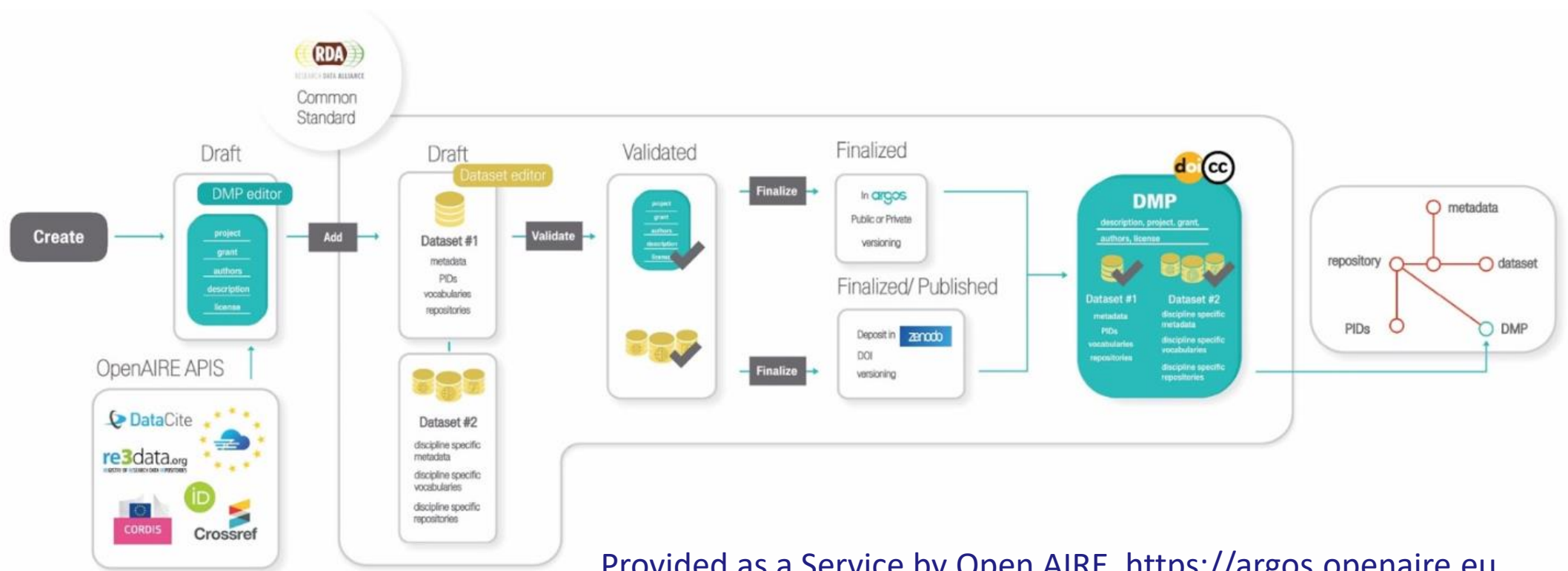


# DATA MANAGEMENT PLANS

## – IN / WITH ARGOS

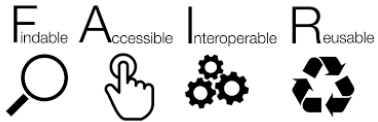
# argos – A GLIMPSE

ARGOS is an open source, configurable and extensible tool for planning Research Data Management (RDM) activities according to Open Access & FAIR data policies.





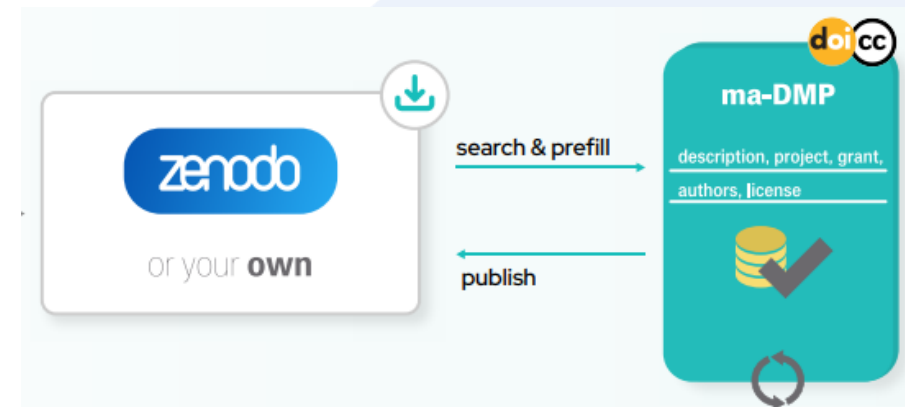
# argos – OUTPUTS & PROCESSES



- **Findable:** OpenAIRE EXPLORE
- **Accessible:** PIDs (ORCIDs & DOIs)
- **Interoperable:** RDA DMP Common Standard
- **Reusable:** Licenses
- **Versioned:** history/provenance
- **Published** and **preserved** in Zenodo

- **Automated**

- **Writing:** inferred content and **allocation** in Templates as answers
- **Searching:** Published Dataset / Software metadata
- **Publication:** DMP metadata and files in Zenodo



# UNLOCKS NEW POTENTIALS – NOT JUST A TOOL!



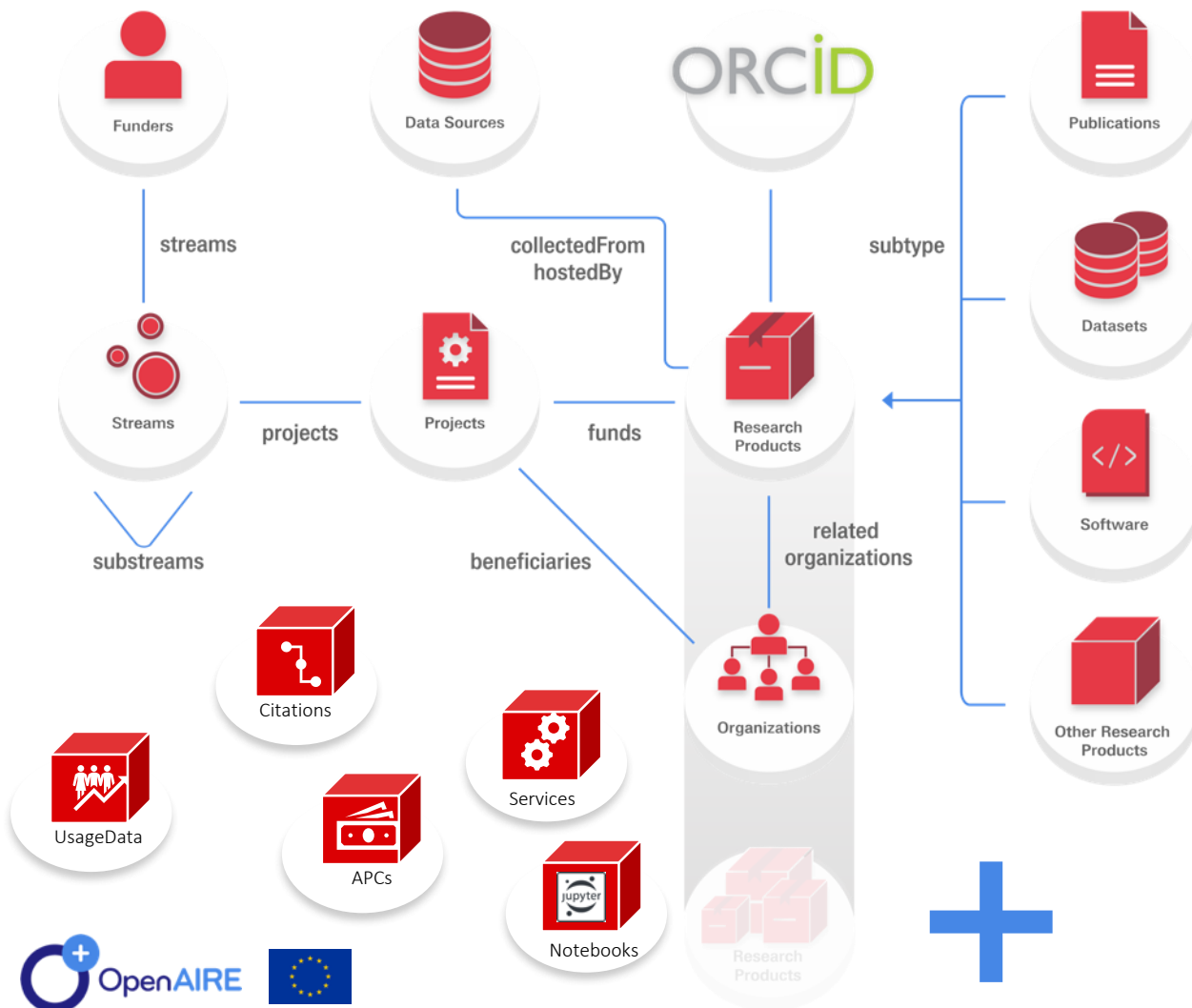
- **For all outputs**
  - Data, Software, Workflows, etc.
- **For all disciplines**
- **Connects data services and workflows**
  - Validation, Automation, Easy DMP publication with a click

# SCIENTIFIC KNOWLEDGE GRAPH

## – THE OPENAIRE GRAPH

# OPENAIRE **GRAPH** – KEY ASSET IN OPEN SCIENCE INFRASTRUCTURE

INCLUSIVE, TRANSPARENT, REPRODUCIBLE




- Based on **Open Science principles**: open & authoritative sources, open APIs, well established **metrics**
- **Global** coverage
- Enriched by **AI-processes** - citation, reproducibility, FOS, SDGs, domain specific
- Moving towards **smart discovery**
- High **relevance** to the research community

A comprehensive and open dataset of research information covering 145m publications, 18m research data, 305k research software items, from 110k data sources, linked to 3m grants and 178k organizations.  
All linked together through citations and semantics.



# OPENAIRE **GRAPH** DATA SOURCES



Tools & Software



Publishers



35 Funding databases



Research Graphs



Registries



Aggregators



Repositories / Pre-prints



RI Catalogues

# DATA WRANGLING CHALLENGES



## Heterogeneity

Standards, crosswalks,  
community and cross-  
community view

[GUIDELINES.openaire.eu](https://guidelines.openaire.eu)



## Quality and accuracy

Trust and stability of the  
data: researchers and  
operators in the loop

PROVIDE (validation, brokering), user  
feedback, PIDs

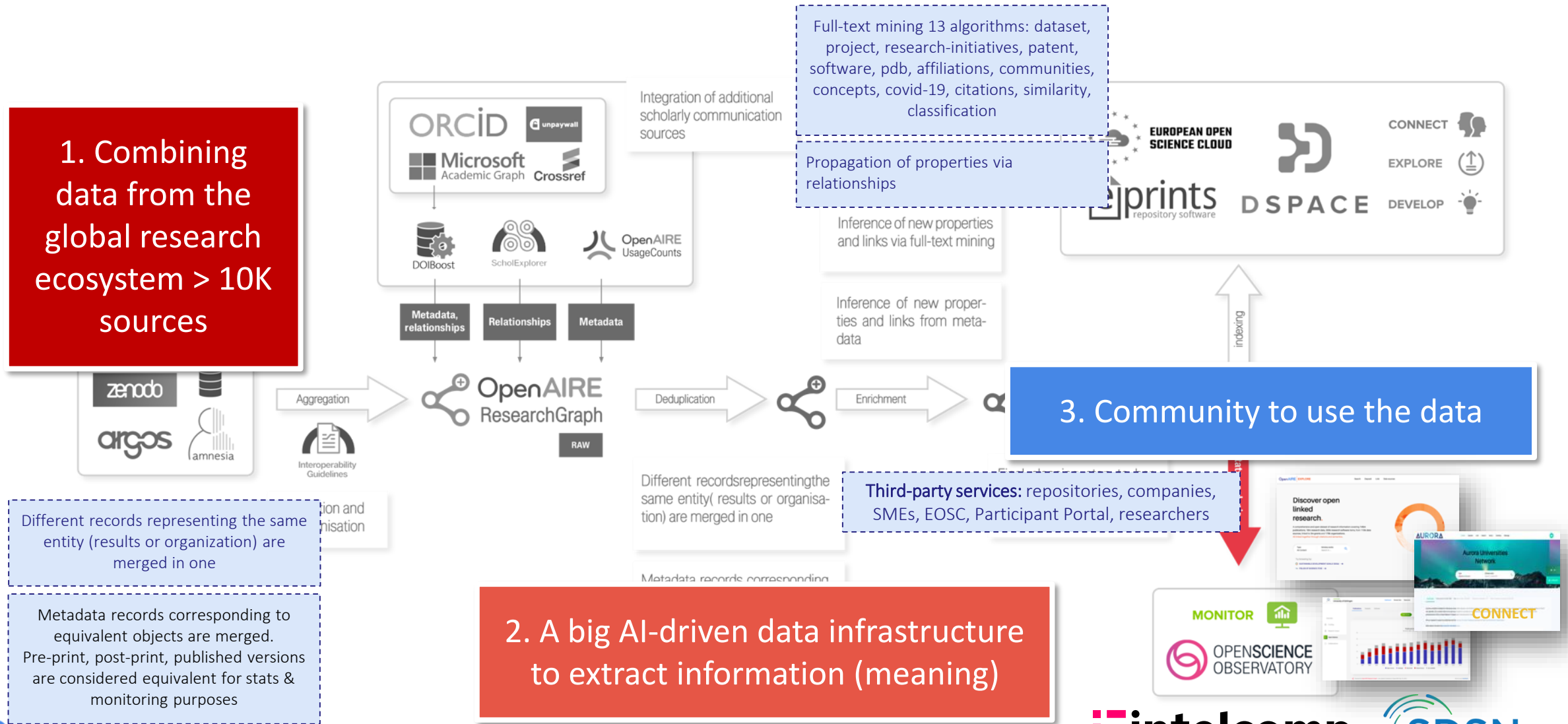


## Completeness

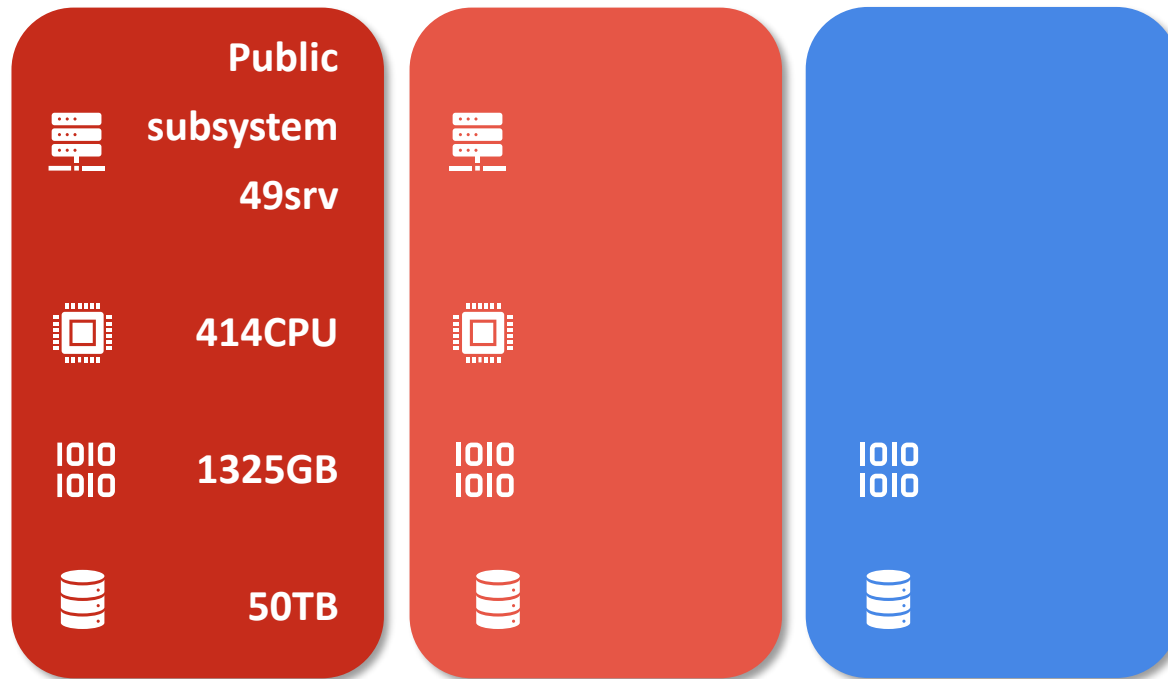
Practices, sharing of  
technology and data  
(Scientific Knowledge Graphs)

Open Science publishing workflows, RDA  
OSG interoperability

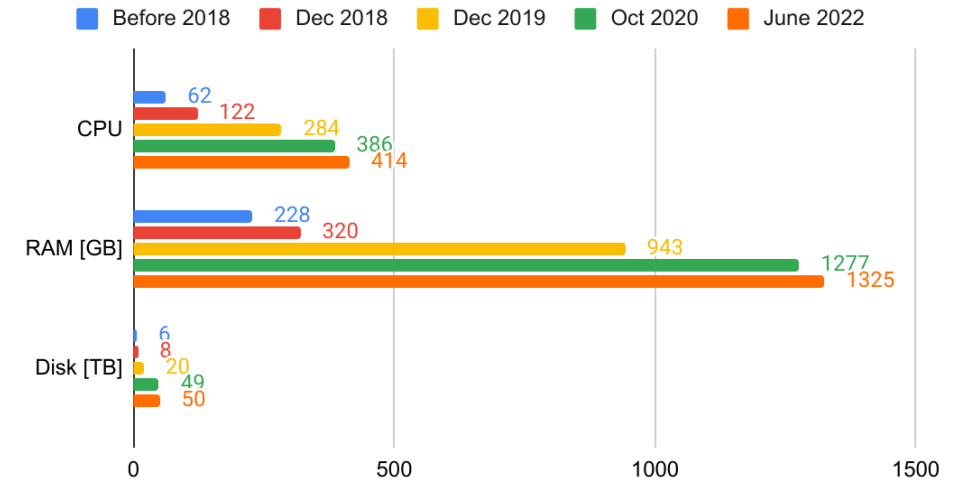
# OPENAIRE GRAPH: THE SUPPLY CHAIN



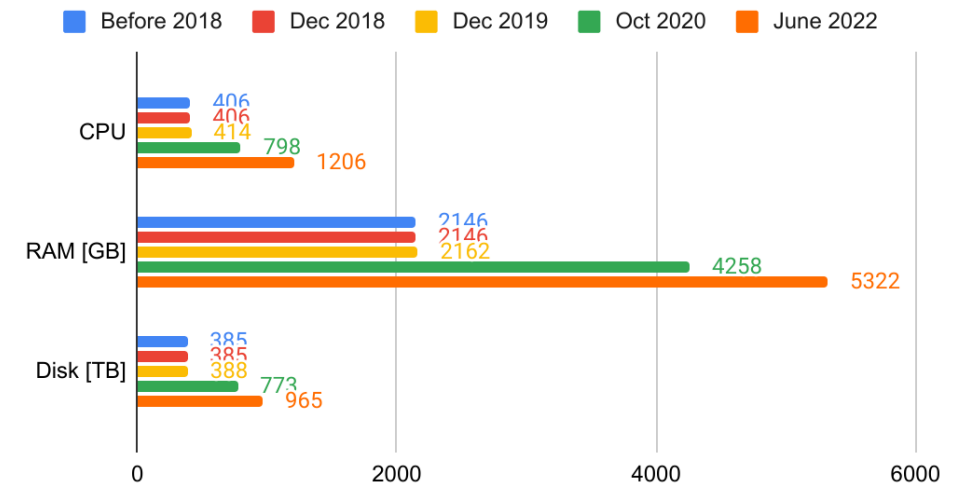
# PHYSICAL INFRASTRUCTURE



Public subsystem resources



Data mining and provision subsystem resources



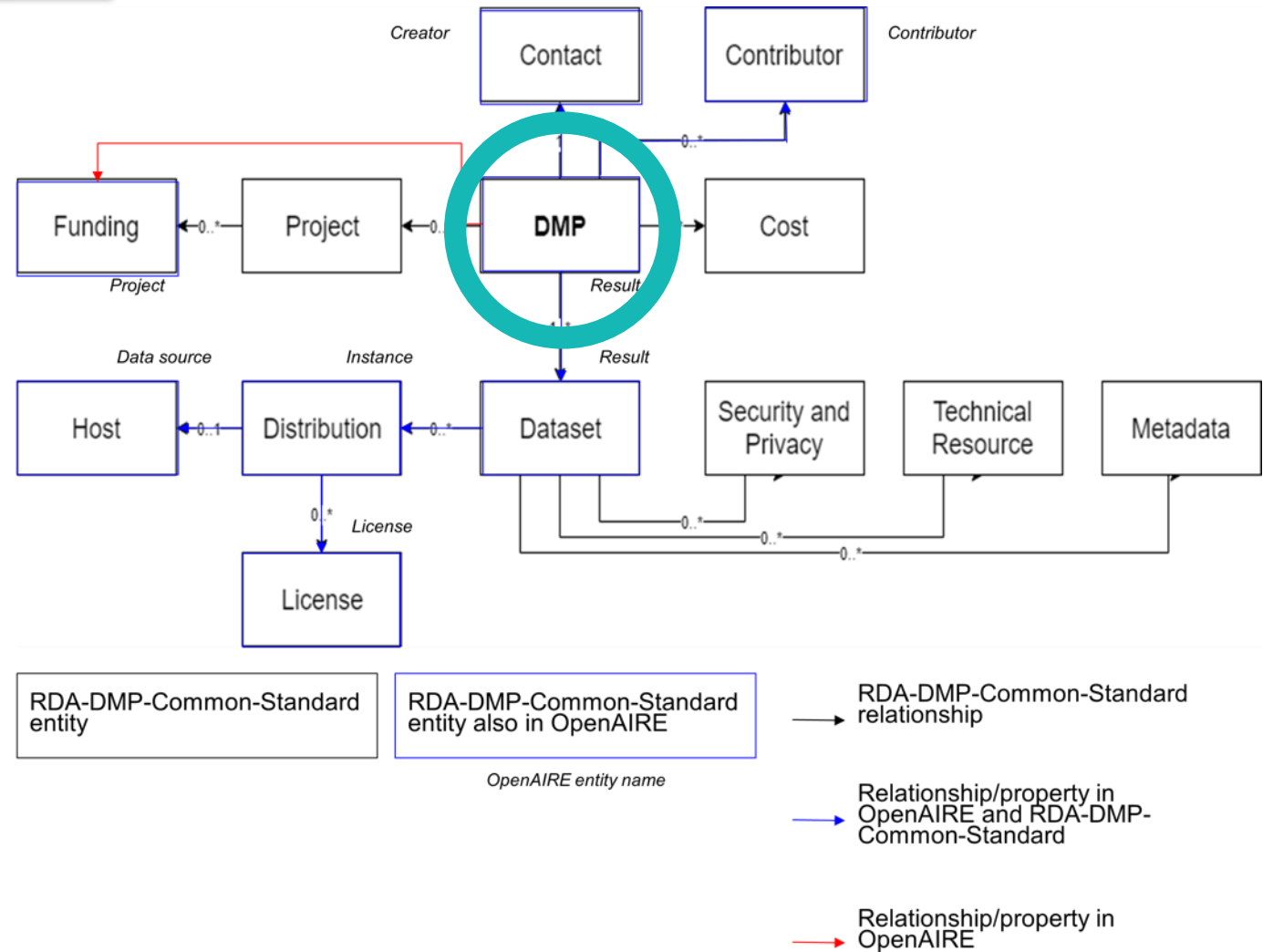


# INTEGRATIONS IN PRACTICE

1.Manghi, Paolo, Bardi, Alessia, Atzori, Claudio, Baglioni, Miriam, Manola, Natalia, Schirrwagen, Jochen, & Principe, Pedro. (2019, April 17). The OpenAIRE Research Graph Data Model (Version 1.3). Zenodo. <http://doi.org/10.5281/zenodo.2643199>

# MA-DMPS & OPENAIRE GRAPH

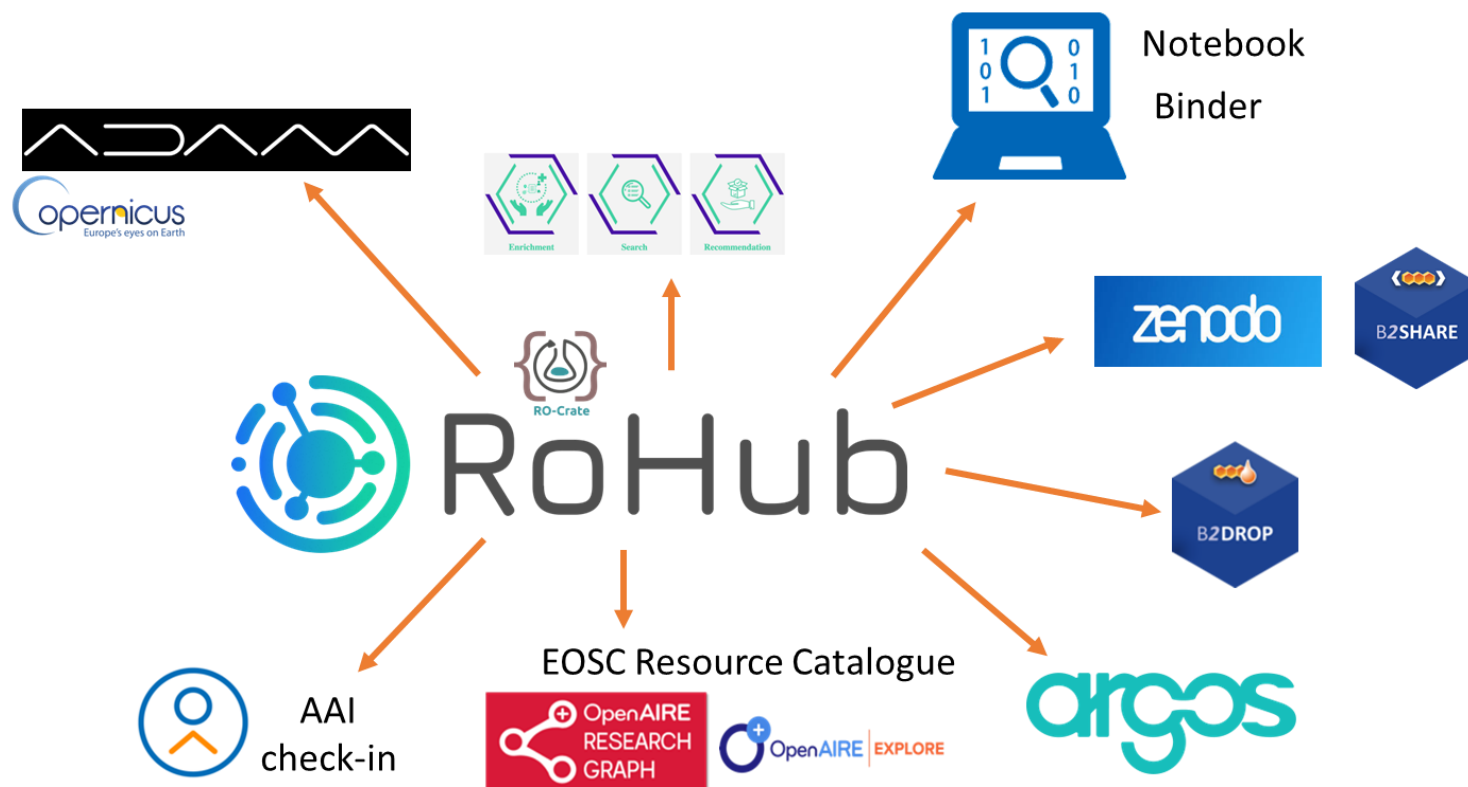
First integration



# INTEGRATION WITH RO-HUB

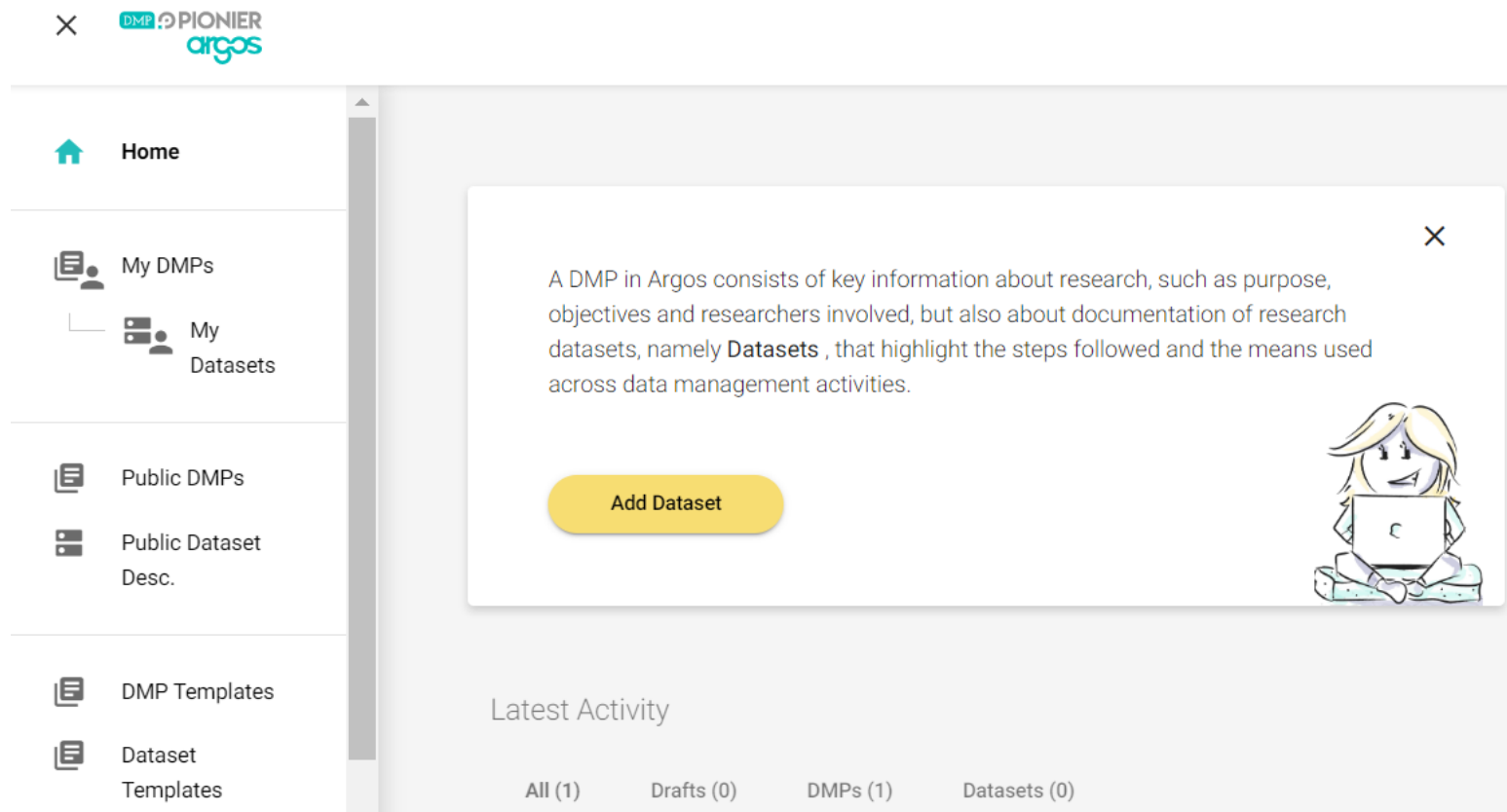


<https://reliance.rohub.org/>



NEW IN 2023: RSPACE  
integrations for prefilling,  
linking and publishing  
information between the  
platforms

# NATIONAL INSTANCES



Poznańskie Centrum Superkomputerowo-Sieciowe  
afiliowane przy Instytucie Chemii Bioorganicznej PAN

## Connected to RO-Hub

<https://mitraria.man.poznan.pl/home>



Universidade do Minho



## Connected to Dataverse institutional repositories



Change from other software: migration mechanism for DMPs, users & their connections

Integration with Dataverse repositories



in the pipeline

# THANKS



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