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Evolution of scientific thinking and knowledge making

- How this process advances and how EOSC can support it?
How does synthesis among scientific disciplines (domains) happen?

- Simple (commonalities)
- Additive (building on existing knowledge)
- Multidimensional (network)
How can synthesis among scientific disciplines (domains) happen?

- Multidisciplinary / cross-domain (pattern/process comparison)
- Depend on FAIR-compliant processes: from data to results interpretation
EOSC Science Projects: creating the cross-domain interfaces (trading zones)
EOSC Exchange

Onboarding of external resources and providers
EOSC Portal Marketplace

Currently onboarded:
- 237 Providers
- 365 Resources
- 52 Communities and Infrastructures
- 17 defined target groups

Access to the OpenAIRE Research Graph
- 1.9million publications
- 1.2million datasets
- 170k software entries

Originally services, now far more
Data sources, catalogues, data products, training material, software, EOSC interoperability guidelines
Exchange and Core – Complementary capabilities

- **EOSC Core**
  AAI, Helpdesk, Monitoring, Accounting, Security coordination, ...

- **EOSC Exchange**
  Horizontal services, Thematic resources, SME services, ...

*Service Composability* - making use of EOSC services/resources together to solve a problem

E.g. running a *workflow* on a resource from *onboarded repository* on a *EGI Fedcloud VM*, storing on *EUDAT B2SAFE* and publishing on *OpenAIRE Zenodo*. Services discovered and ordered on the *EOSC Marketplace*, accessed over *EOSC AAI* with help provided via the *EOSC Helpdesk*.

*Horizontal Services* – subset of the *EOSC Exchange* which are *generic service or resource bringing significant value to multiple research infrastructures.*
Horizontal Resources – EGI-ACE

Readily available resources (via researcher easily joining vo.access.egi.eu VO)

- 4 cores/8 GB RAM/100 GB storage **VMs** for 6 months, renewable for other 6 months in the EGI Cloud Compute service

- **EGI Notebooks** service for running Jupyter notebooks with a default quota of 2 CPU 4GB RAM and 20GB of home storage

- **Cloud orchestration** via Infrastructure Manager

- **Registration of hostnames** in the Dynamic DNS

- Registration of software in **VM Ops AppDB**

- 100 GB of storage in **EGI DataHub**

Services accessible over EOSC AAI
No prior approval required:

- **20GBs per user to the** **sync and share B2DROP** service via B2ACCESS (EOSC AAI) - additional space can be granted but it would require some days for the configuration
- **Store and publish service B2SHARE** via B2ACCESS (EOSC AAI) with the limit to 20GB per each dataset uploaded

Readily provisioned (an email requesting access all that’s needed):

- **50TB of storage on B2SAFE** or online storage with no replication across sites and no customised data management policies with standard access (SSH/GridFtp/webdav)
- **PID registration services B2HANDLE**

Accessible over EOSC AAI
Horizontal Resources – OpenAIRE-Nexus

Readily available resources

- Zenodo.org enabling publishing of workflows
- ARGOS machine-readable data management plans
- episciences.org that offers "overlay journal editorial tooling" for researchers to create and operate an Open Access journal
- Amnesia.openaire.eu pseudo-anonymization and publishing of sensitive data

- OpenAIRE Research Graph supporting data aggregation/access:
  - OpenCitation APIs for article citation data
  - ScholeXplorer for article-data, article-software citation data
  - OpenAPC for Article Processing Charges data linked to DOI articles
  - UsageCounts providing usage data (downloads and views) for publications, data, software, etc.

Many services don't require registration. Others being integrated with EOSC AAI.
EOSC-Future Showcase Integration Stories (SISs)

Demonstrating to Scientists and Researchers how to use EOSC

The beginning…

1. Explain the issue to be resolved

Discovery of relevant (thematic) data

Discovery/provision of needed services/resources

Execution of workflow. Visualize the results

Publish the results onto the Research Graph

The end…

Summary of how EOSC helped

Supplementary demonstratable functionality: Helpdesk/Ordering
Thank you for your attention