ESCAPE to the Future
25-26 October 2022
Brussels, Belgium

ESCAPE
European Science Cluster of Astronomy & Particle physics ESFRI research Infrastructures

# ESCAPE to the Future: OSSR – Open Software in the EOSC

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for the OSSR Team

ESCAPE to the Future, Brussels, 25-26th of Oct. 2022

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# ESCAPE EOSC cell

ESCAPE OSSR

Catalogue & Repository of resources

Datasets
Software & services
Tutorials
Training
Publications

TSP's

RI-Specific Science Platforms

ESCAPE SAP Science Platforms

Workflows, notebooks, deployment platforms, packaging

ESCAPE VO Virtual Observatory

Astronomy Data centres

VO Registry

VO Registry
Analysis Tools
VO Services

ESCAPE CS Citizen Science

ESCAPE DIOS Data Lake

FAIR data management
Content discovery and delivery

HPC

PRACE

EuroHPC Joint Undertaking

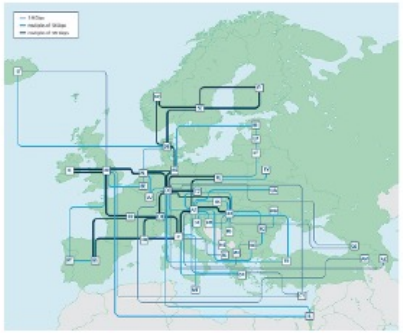
HTC

Grid clusters, etc

Private/public clouds

Commercial clouds

GÉANT



# Status before ESCAPE and OSSR Vision

- Software second to data in the EOSC scheme
- Diverse status of (open) scientific software within the community
- Cross-experiment analysis via MoUs with minimal exchange of data and software
- Modern approaches individually handled, no extensive cross-fertilisation
- No standard for metadata and archival, no link (of community software) to EOSC
- ...

The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a reliable, sustainable open-access repository to share scientific software and services to the science community and enable open science.
It houses astro-particle-physics-related scientific software and services for data processing and analysis, as well as test data sets, user-support documentation, tutorials, presentations and training activities.

# OSSR Aims and Objectives

ESCAPE OSSR
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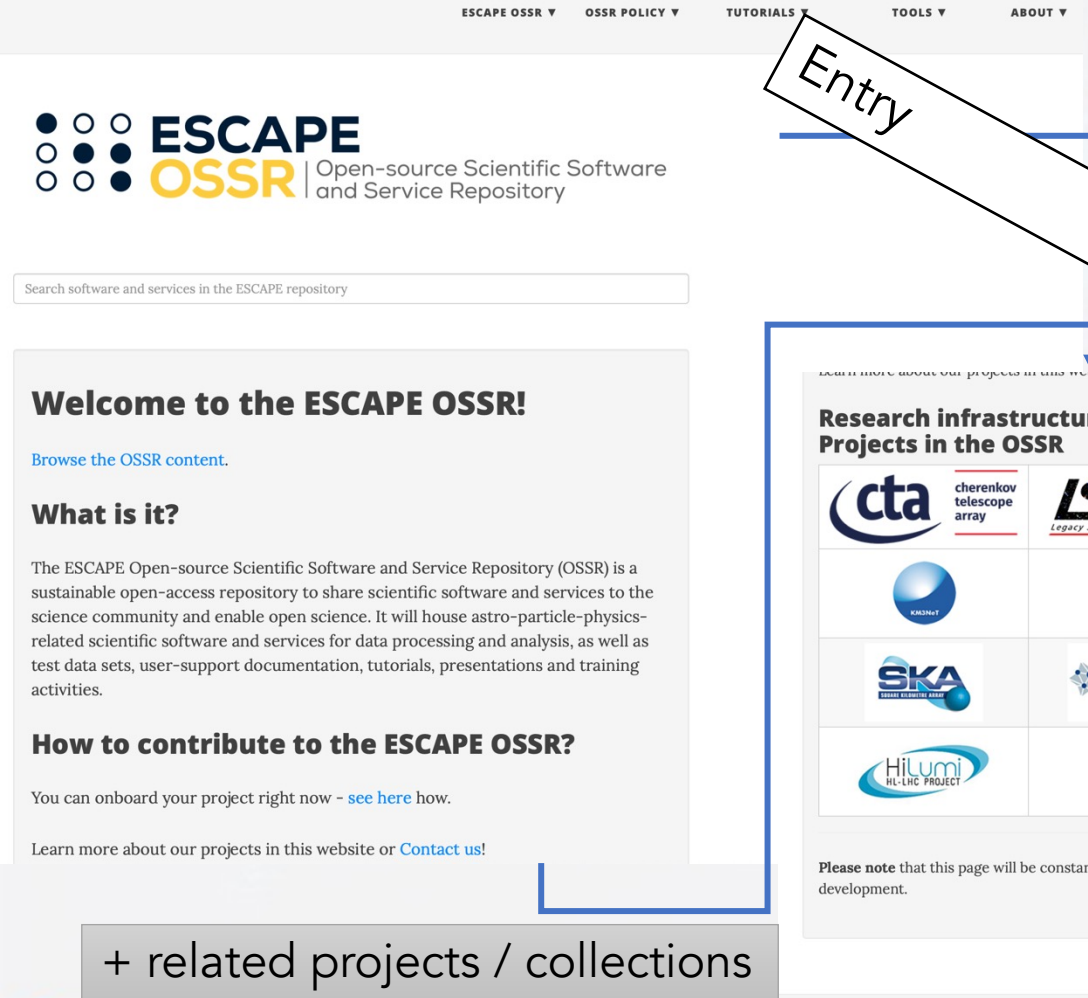
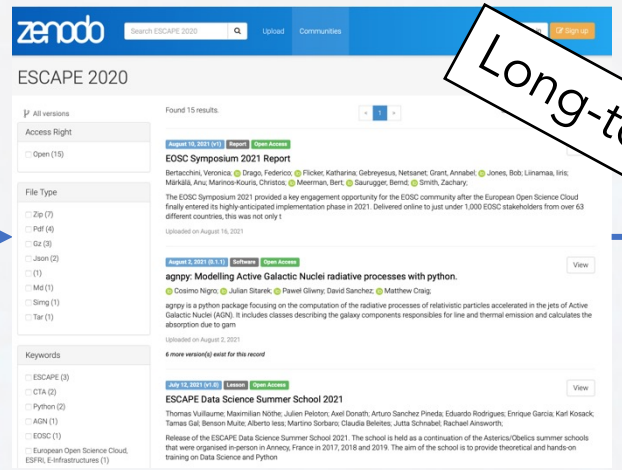
- Objectives:
  - Facilitate and support continuous **development, deployment, exposure and preservation** of partners' software/tools/services
  - Foster **interoperability, software re-use and cross-fertilisation** between ESFRIs (e.g. simulation)
  - Offer an **open innovation environment for open standards** (e.g. workflows, data-formats), **common regulations** and **shared (novel) software** for multi-messenger & multi-probe data
  - Establish the link of the **community to the EOSC** and vice-versa.
  - **Training** of experiences code custodians to create and maintain high-quality, open software and **raise their visibility**
- All objectives follow:
  - Paradigm of **enabling open science** – with **software as "first class citizen"**
  - a **community-based and inclusive** approach
  - the **FAIR principles** for open science resources – software and derivatives
  - **Federation** of available resources

# OSSR – User's View

http://purl.org/escape/ossr




Entry

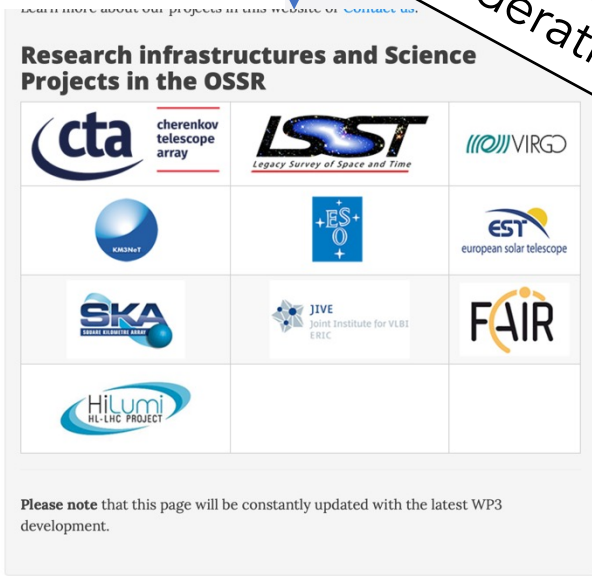



Long-term

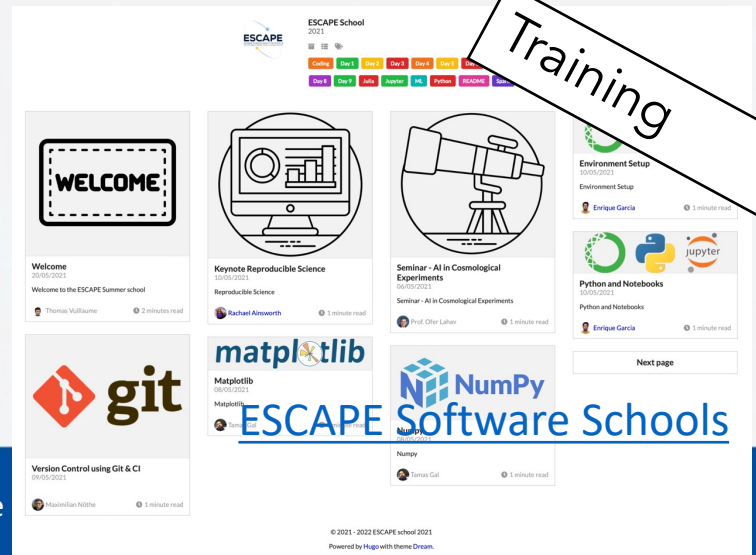
EOSC Integration

openAIRE

Federation




Training




ESCAPE Software Schools

+ related projects / collections

# OSSR – Provider Workflow

FAIR Open-source

- publishes source code (updates your existing record with new versions)

GitLab

- develop/maintain software
- tag a version(release)
- add metadata
- let the CI do the rest

- builds a container image

Reprocessing

- publishes image
- registers image

Long-term

zenodo

- long term archived
- findable
- citable

Integration

ESCAPE

- integrates into ESCAPE EOSC cell

docker hub

GitLab Container Registry

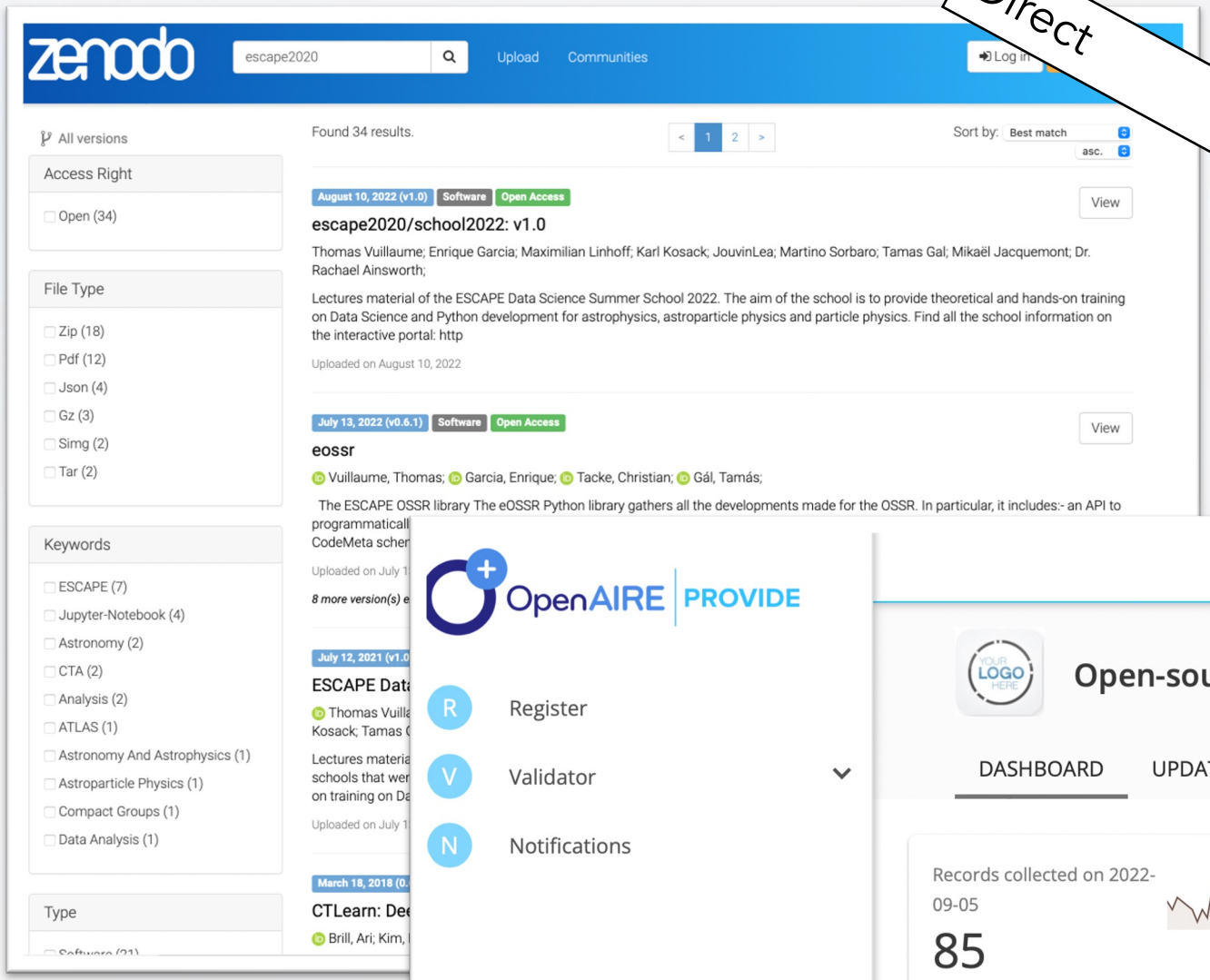
implemented in *eOSSR* library

eOSSR

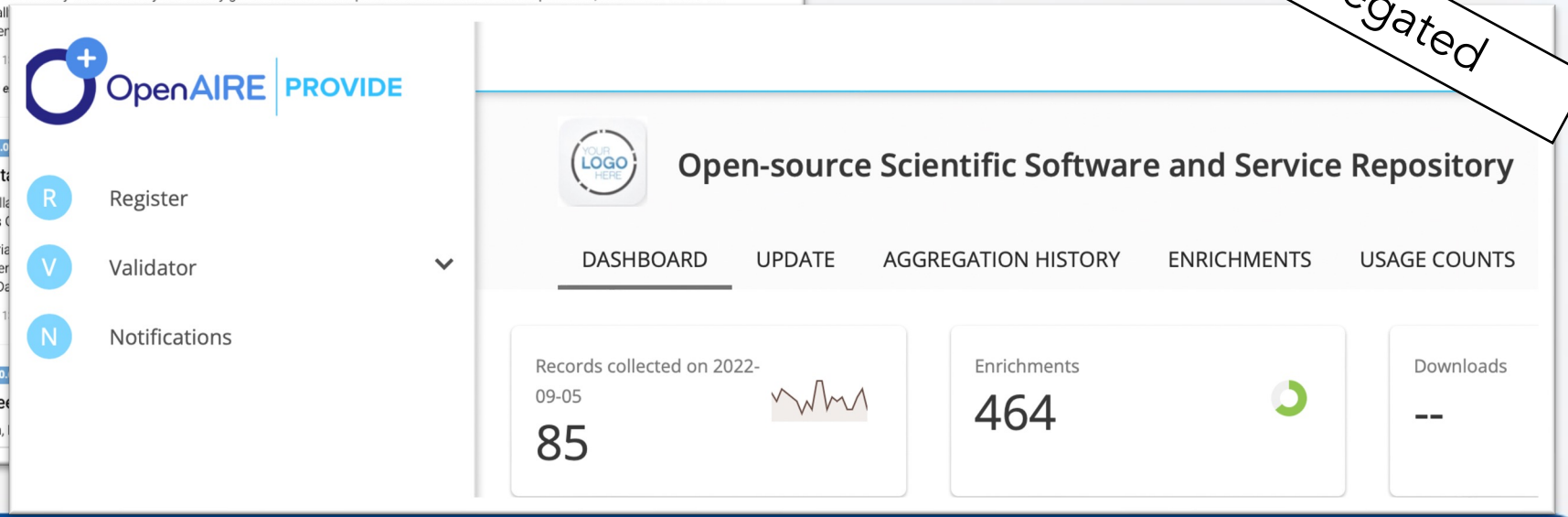
DOI 10.5281/zenodo.5524912

# OSSR Onboarded Entries

Direct




Aggregated



# Cross-fertilisation and ESFRI Software Developments

**Mohammad Al-Turany**
FAIR
*OSSR & GSI/FAIR*

**Des Small**
JIV-ERIC
*CASA improvements for VLBI*

**Matthias Füßling**
CTA
*Cheronkov Telescope Array Observatory (CTAO)*

# OSSR to the Future

- Technical Developments:
  - Extending metadata scheme
  - Extending eOSSR library with advance search, additional development platforms and archives
  - Support for integration with analysis platform and virtual research environment in EOSC-Future
- Sustaining OSSR:
  - Repository infrastructure is sustainable by choice/design
  - Interest group from members of onboarding group formed
  - Continue the cross-fertilisation and co-operation in software development
  - Maintenance is goal of the ESCAPE collaboration
- Enlarging the scope
  - Engagement with HORIZON-INFRA-2023-EOSC-01-02 “Development of community-based approaches for ensuring and improving the quality of scientific software and code”
  - Strive to become part of the EOSC Exchange layer
- Collection and preservation of all software and services generated in ESCAPE

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# Thanks for your attention!