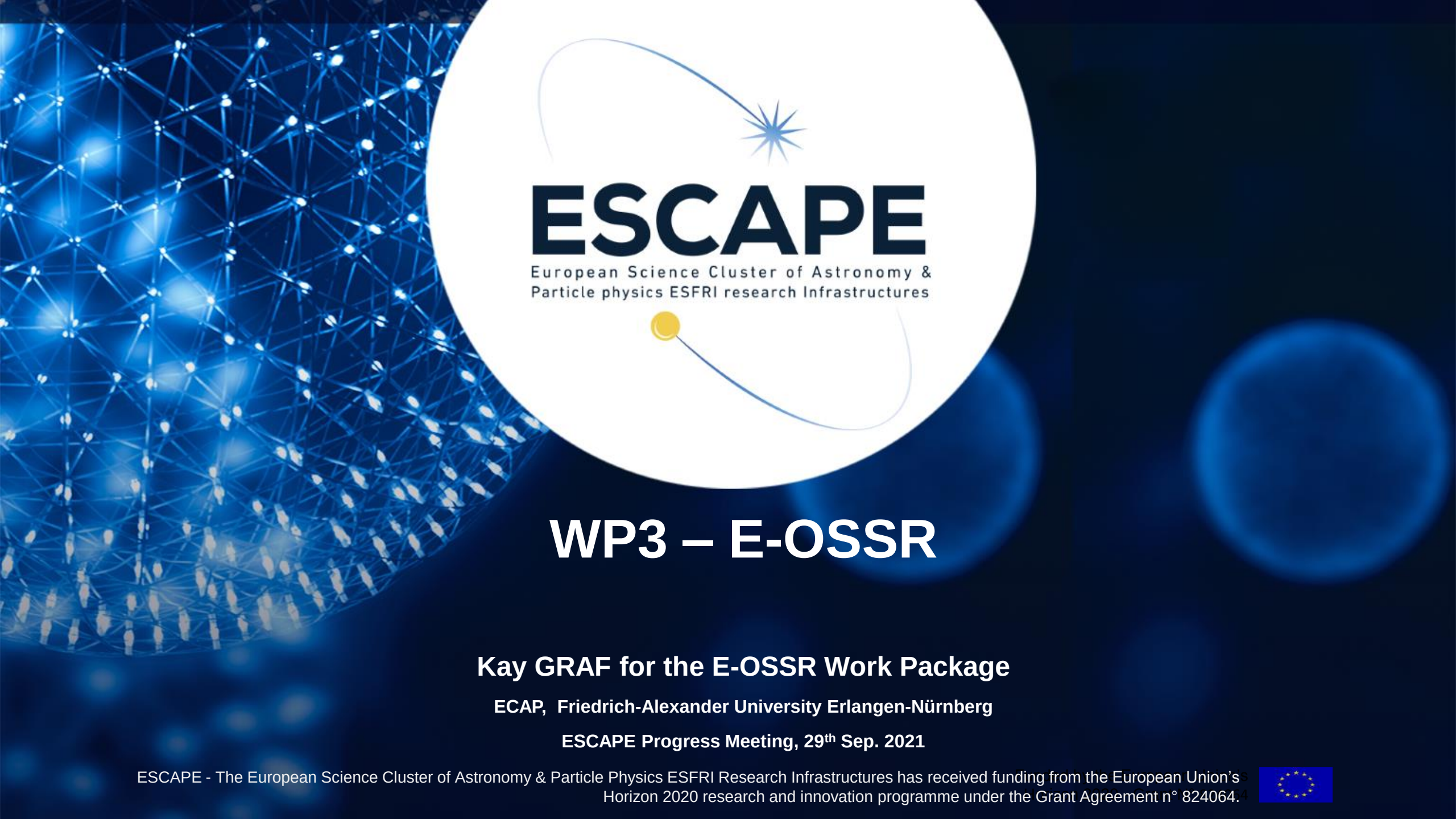


WP3 – E-OSSR

Kay GRAF for the E-OSSR Work Package

ECAP, Friedrich-Alexander University Erlangen-Nürnberg

ESCAPE Progress Meeting, 29th Sep. 2021

ESCAPE - The European Science Cluster of Astronomy & Particle Physics ESFRI Research Infrastructures has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement n° 824064.

ESCAPE EOSC cell

ESCAPE OSSR

Catalogue & Repository of resources

Datasets
Software & services
Tutorials
Training
Publications

TSP's

RI-Specific Science Platforms

ESCAPE VO Virtual Observatory

Astronomy Data centres

VO Registry

VO Registry
Analysis Tools
VO Services

ESCAPE SAP Science Platforms

Workflows, notebooks, deployment platforms, packaging

ESCAPE CS Citizen Science

ESCAPE DIOS Data Lake

FAIR data management
Content discovery and delivery

HPC

PRACE

EuroHPC Joint Undertaking

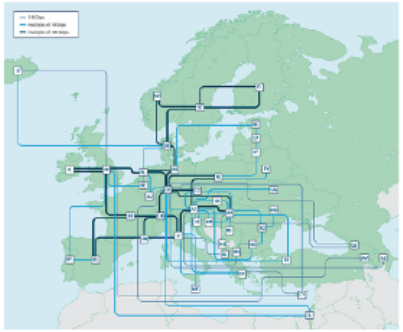
HTC

Grid clusters, etc

Private/public clouds

Commercial clouds

GÉANT



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E-OSSR Aims and Objectives

- **Aim:**
  shared open science software and services based on FAIR principles
- 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
- All objectives follow:
  - Paradigm of **enabling open science** – with **software as "first class citizen"**
  - a **community-based, inclusive** approach
  - the **FAIR principles** for open science resources – software and derivatives
  - **Federation** of available resources

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Co-Development and Community Engagement

23 July 2020 to28 July 2020

ESCAPE Workshop on Open-Source Software Life Cycles

Virtual

Software development is an integral part of modern science, gaining knowledge from data. All ESCAPE partners develop and

[...]

17 February 2021

Webinar: ESCAPE OSSR | Enhancing science through sharing software - benefits & use cases

Virtual

When: 17th February 3pm CET. In the webinar "ESCAPE OSSR Enhancing science through sharing software - benefits & use cases" we will show the ESCAPE OSSR developments and achievements towards a FAIR multi-messenger data-driven cooperative approach.

08 March 2021 to12 March 2021

IWAPP Workshop - Innovative Workflows in Astro and Particle Physics

Online

The objective of this workshop is to bring together the scientists' communities of Astrophysics, Astroparticle Physics and Particle Physics who are leading the development of Innovative Workflows within their domain.

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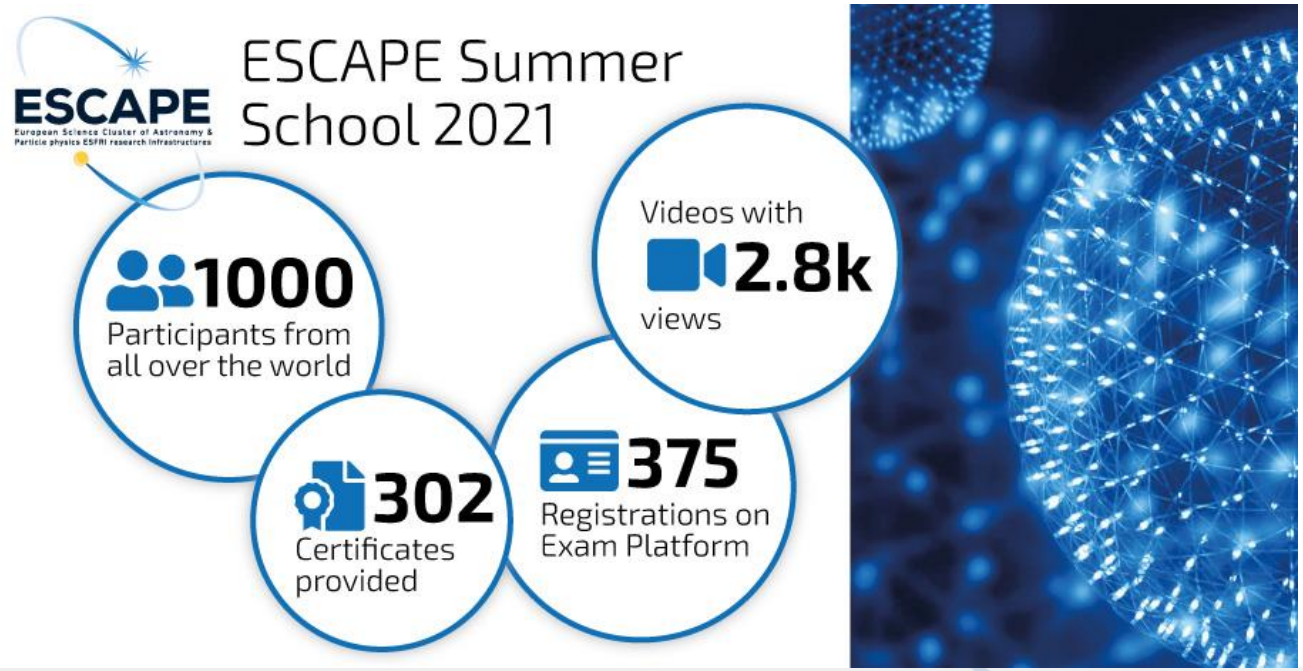
Training of Software Custodians

- Software as first class EOSC citizen
- Enable software custodians
- All lectures/materials online: https://escape2020.github.io/school2021/



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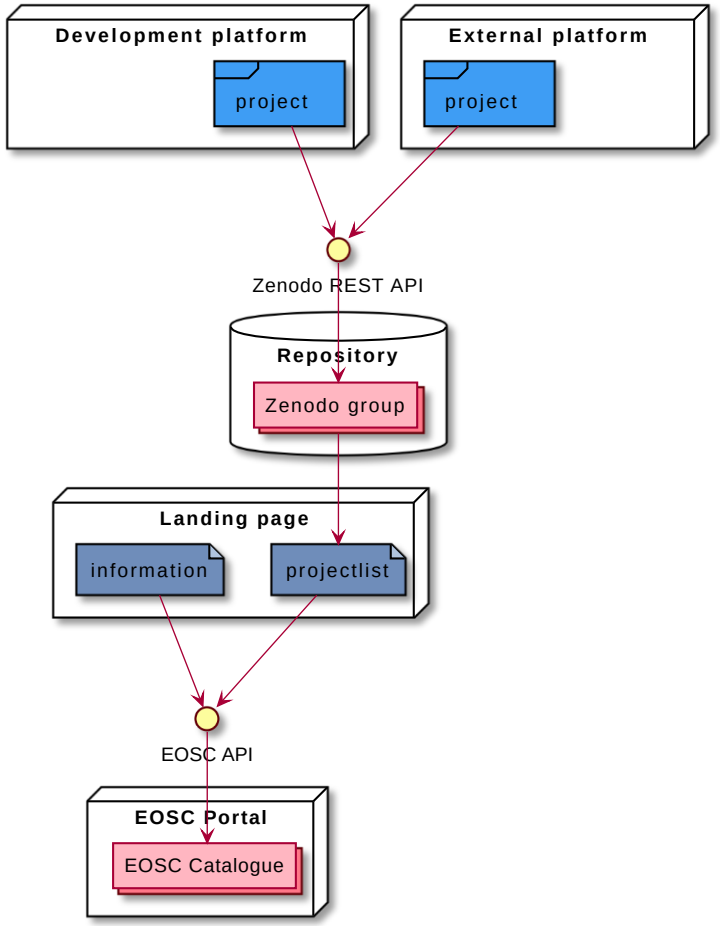
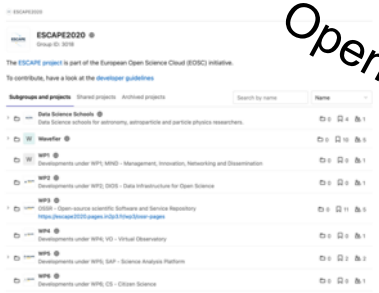
OSSR Prototype - Schematic



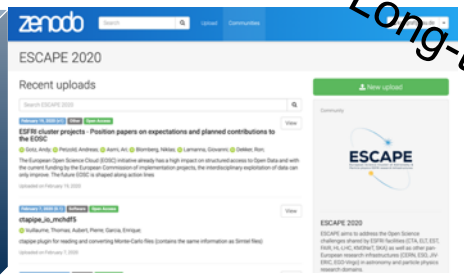
Development Platform
- Software Development
- Integration & Automisation

Open-source



Repository
- Service Aggregation
- Preservation

Long-term



Landing Page
- Entry point, Link Aggregation
- Search

Federation

See also technical presentation on E-EB extended discussion day

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ESCAPE OSSR and Development Platform – how to ease the publication and integration process?

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

GitLab

- builds a container image

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

zenodo

- long term archived
- findable
- citable

- publishes image

- registers image

docker hub

GitLab Container Registry

ESCAPE

- integrates into ESCAPE EOSC cell

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OSSR - Current Landing Page

http://purl.org/escape/ossr

Search software and services in the ESCAPE repository

Welcome to the ESCAPE OSSR!

Browse the OSSR content.

What is it?

The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a sustainable open-access repository to share scientific software and services to the science community and enable open science. It will house 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.

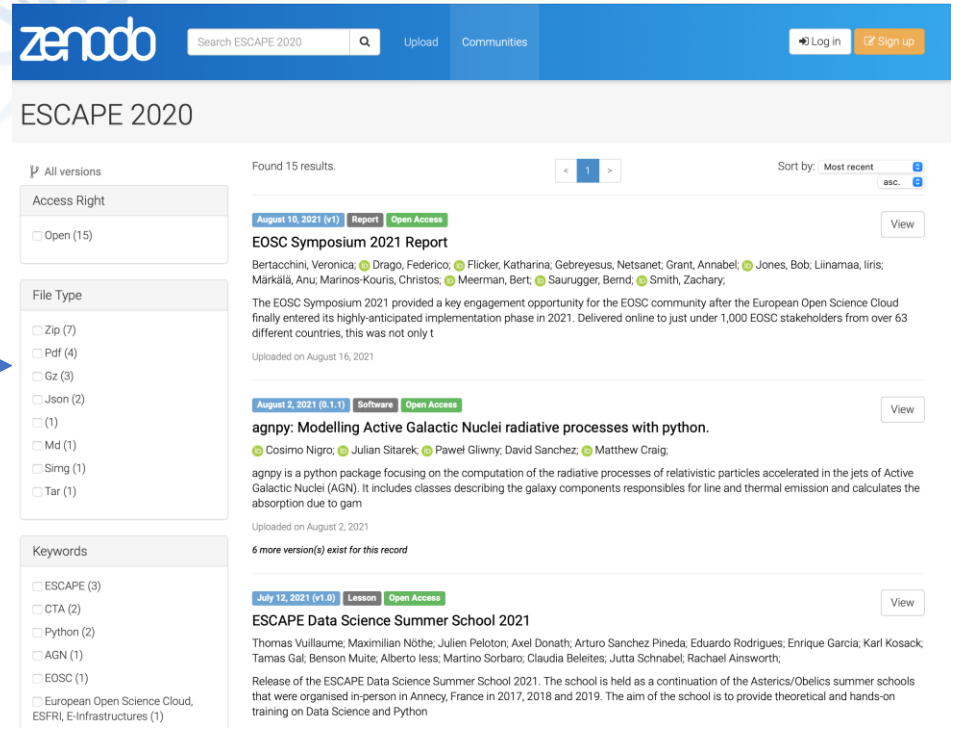
How to contribute to the ESCAPE OSSR?

You can onboard your project right now - see here how.

Learn more about our projects in this website or Contact us!

Research infrastructures and Science Projects in the OSSR

Please note that this page will be constantly updated with the latest WP3 development.



To be added: related projects / collections

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Time for a Short Demo

Also as Video at [the ESCAPE Cloud]

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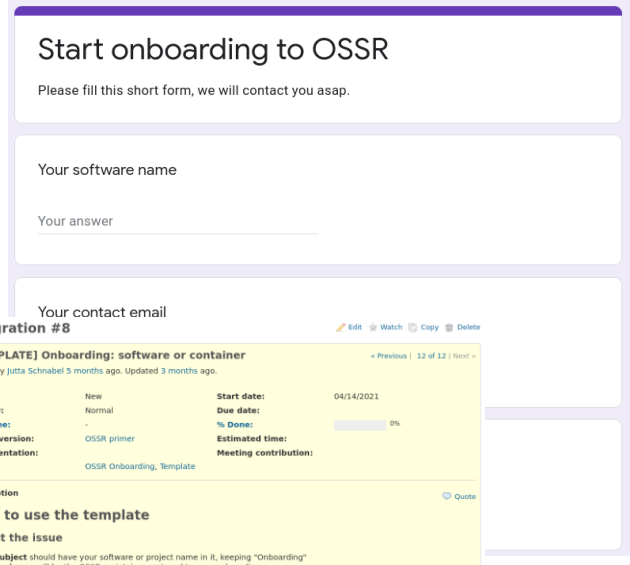
Onboarding Procedure

- Checklist for ESCAPE partners at https://escape2020.pages.in2p3.fr/wp3/ossr-pages/
  - Process tracked via issues on project platform
  - Necessary: Onboarding presentation & technical report → entry on the landing page
  - Add metadata and register to ESCAPE community at Zenodo
- To be extended to external partners and streamlined
  - Add EOSC terms of use



Onboarding Procedure Checklist

- Sign User Agreement
  (We don't have a formal User Agreement yet. We currently assume "conduct implying an intent" / "implied contract".)
- Request an issue in the project platform to start the onboarding process by filling this registration form, or contacting a repository maintainer.
- A short onboarding presentation should be held during an FG1 call using this template, an example can be found in this talk. Please book your date in this poll.
- A technical report should be filed using this template, an example can be found at this tech report.

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Onboarding Status

Active processes

Onboarding: LOFAR software

Onboarding: R3B

Onboarding: gLike

Onboarding: km3py

Onboarding: gammapy

Onboarding: HCG-16 study

Onboarding: agnpy

Onboarding: ConCordia

Onboarding: FAIR software

Onboarding: SKA data challenge

Onboarding: JIVE software

Onboarding: Gammalearn

+?

Initial software survey

- CTA
  - GammaLearn, ...
- EGO-Virgo
- EST
  - Improving solar wind predictions ...
- ESO
- FAIR
  - DDS, FairMQ, FairROOT
- HL-LHC
- JIVE
  - CASA 6
- KM3NeT
  - KM3Pipe, ...
- LSST
- SKA
  - SKA data challenge 1 solution
- Other
  - Hangar
  - Pipeline for HCG-16 Project
  - LOFAR Software
  - agnpy

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Joint cross-WP Activities

WP3 – WP4 Topics

- Software **metadata** in the IVOA & OSSR
- **Onboarding strategy** of IVOA software
- Including IVOA in key list of OSSR
- Use cases with IVOA software
- **VHE data level format** (CTA, KM3NeT, …) development: upcoming CEVO workshop

WP3 – WP5 Topics

- Integrating **Jupyter notebooks** from OSSR
- **Adding workflows** to OSSR
- **Finding software** through ESAP
- Use of **containerized software**
- How to treat **complex workflows**?

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Summary

- First version of OSSR implemented
  - ready to host defined use cases
- Guidelines and best practices collected, co-developments implemented, cross-fertilisations materialised
- Onboarding of partner software & services on track, onboarding already other communities
- Open points identified for finalisation of the work programme

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Thanks for your attention!

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Backup Slides

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Aim: ESCAPE Virtual Research Environment