eosc | EVERSE

EVERSE

A Virtual Institute for Research Software Excellence

Funded by the European Union

17 | 05 | 2024,
WLCG/HSF Workshop, Hamburg
Stefan Roiser, CERN

A Virtual Institute for Research Software Excellence

- EVERSE establishes a network of five Clusters of the European Open Science Cloud (EOSC):

aka	ESCAPE	ENVRI-FAIR	EOSC-LIFE	PANOSC	SSHOC

- EVERSE was kicked off in March 2024
- Homepage: https://everse.software
- 3 years HORIZON Europe project, 8M Euros funding, 18 partners

HEP context: the ESCAPE Project

- ESCAPE was an EU-funded project (now completed but ongoing as an Open Collaboration) which aims to bring together different European Research Infrastructures in terms of Open Science tools
  - **10 ESFRI** (CTA, EST, FAIR, HL-LHC, KM3NeT, SKA, LSST, VIRGO, ESO, JIVE)
  - **2 pan-European International Organisations** (CERN, ESO)
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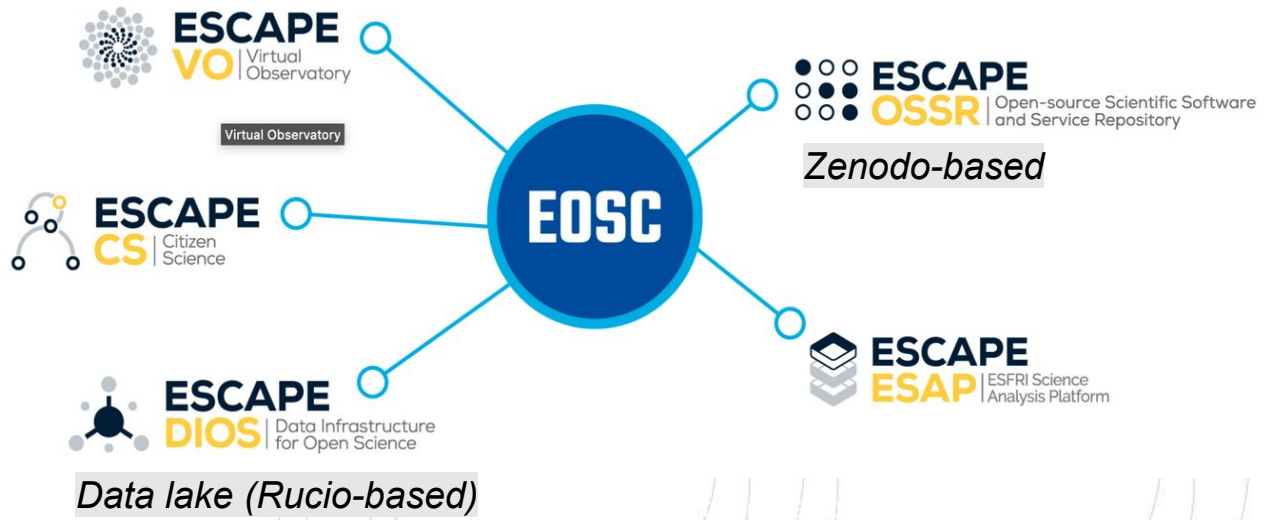
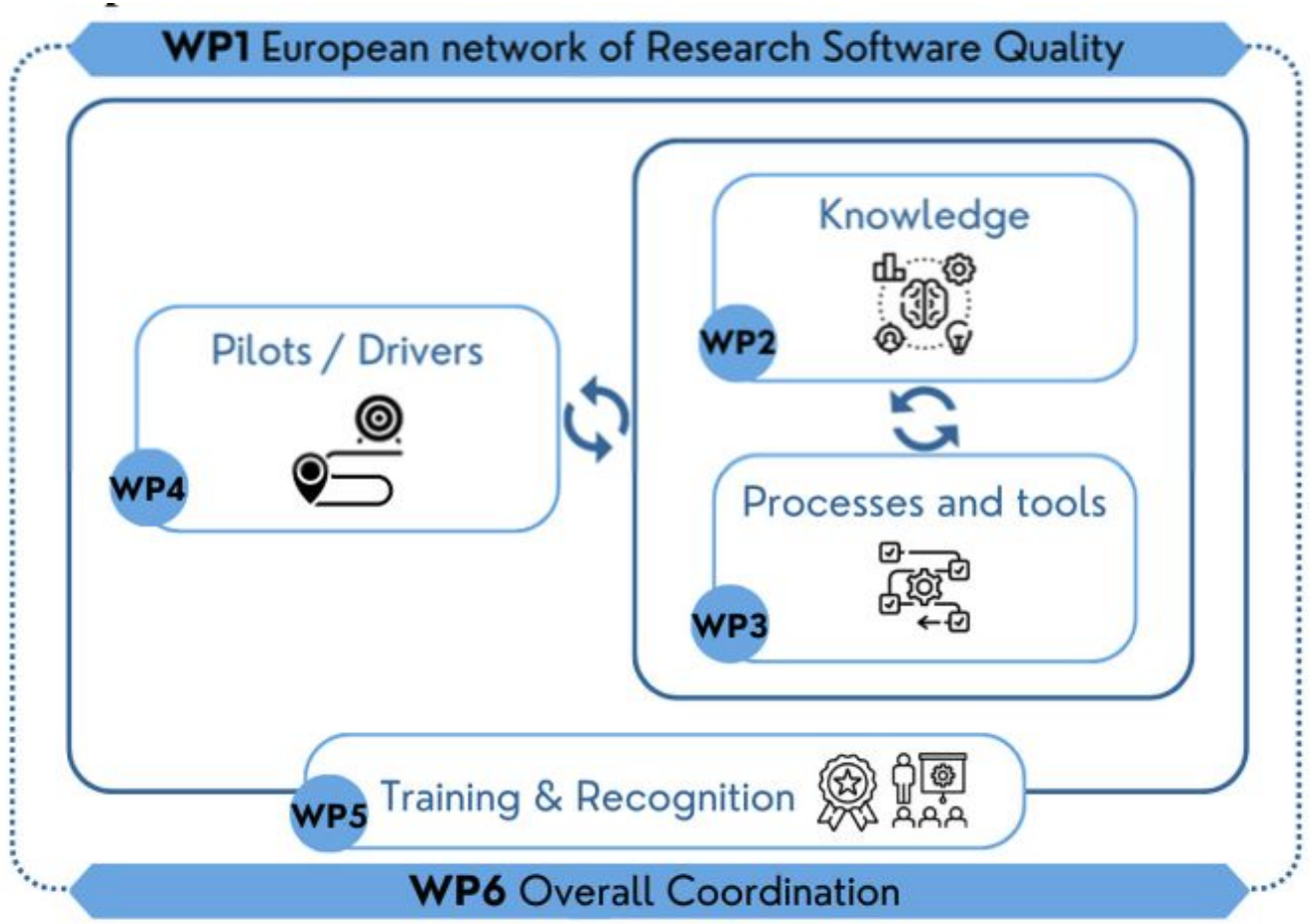
- ESCAPE services contribute to the European Open Science Cloud (EOSC) through the **EOSC-Future** project
- 2 **Science Projects** have produced new results & tested tools with HEP/astro software pipelines so far: **Dark Matter** and **Extreme Universe**



Objectives

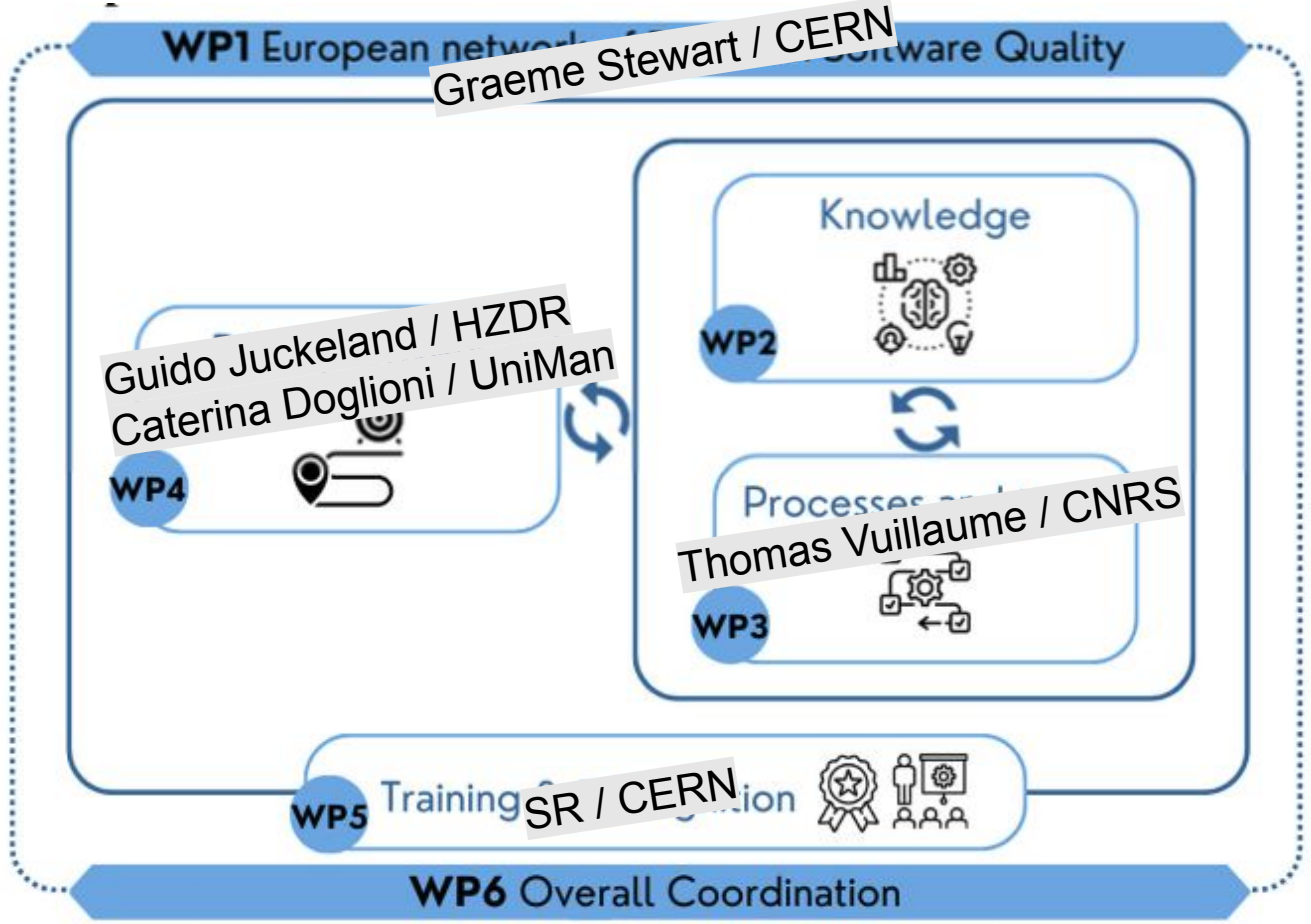
- Build a community-led structure for improving for **improving the quality of research software and code**
  - Build on a collaboration of the five EOSC clusters
  - Establish a European network or Research Software Quality
  - Provide training to support best practices in the clusters
- Leverage on **existing tools and processes** within the research community
  - Based on existing practices and standards within the research communities
  - Provide tools and processes that support the evaluation, verification and improvement of research software
- Establish a **sustainable and collaborative** ecosystem to ensure research software and code quality
  - Enable reliable and reproducible research via training of researchers and RSEs
- Provide a framework to ensure **recognition, reward and career development** for researchers and RSEs
  - Come up with a formal framework that recognizes contributions and achievements in research software

Overall Organization



Overall Organization

WP Leads and Co-leads with a connection to HEP



Activities

The core activities:

- **Assess current best practices** by researchers and make those accessible via the EVERSE "RSQkit"
  - The RSQkit is a meta-repository of documentation, practices, and examples (content still in flow)
  - Prototype for a different purpose/field: RDMKit
- **Link tools and services** into common pipelines or frameworks for software quality and integrate them into the tools developed by the EOSC clusters
- Guiding principles are **FAIRness** and **Open Science**

Exercise the concepts within the EOSC clusters:

- Link to the EOSC science clusters, exercise the EVERSE developments via pilots and provide feedback to WP2 and WP3
- E.g. EVERSE / HEP use cases
  - Analysis code for high throughput data from the LHC based on "xAODAnaHelpers" → talk
  - Prototyping of machine learning tools for data compression → talk
  - Research software infrastructure for the tracking of charged particles based on "ACTS" → talk
- Ideas (and funding calls) for more pilots welcome, please contact Caterina[1]

[1] caterina.doglioni@manchester.ac.uk

Activities (ctd.)

Training & Recognition:

- Underpin the best practices for software quality in the clusters by **existing trainings**
- After a gap analysis eventually **develop trainings**
- Establish **curricula for research software engineering**, provide feedback on those to universities and schools
- Provide a framework and tools to r**ecognise and reward contributions** to research software and training
- Many training activities available on the ESCAPE side (HSF Training, Schools, …)

The Network

- **Establish a framework** among the EVERSE clusters
- **Connect** to research communities, organizations and industry
- Pave the way towards a future **Virtual Institute for Software Excellence**
- Establish a **process to join** the framework

How to join the network

- EVERSE infrastructure, processes and content will be initially setup by the partners of the consortium
- In parallel we are looking for partners outside the consortium to join EVERSE

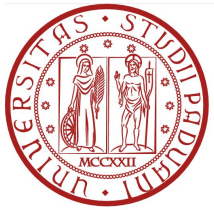
Who can join EVERSE?

- Roles in which you can join
  - Join as **user** to profit from the content and training gathered and developed in EVERSE
  - Join as a **contributor** to provide further content to the consortium and help shape it
- Granularity of joining
  - Join as **individual** researcher or research software engineer
  - Join on an **institutional** level as research lab, university, engineering school, …

How to join EVERSE?

- The process of joining is actively discussed in the context of WP1 “European Network for Research Quality”
- For the time being please contact Graeme Stewart[1] or SR[2]. Once the process is established we will ping you.

[1] graeme.andrew.stewart@cern.ch
[2] stefan.roiser@cern.ch



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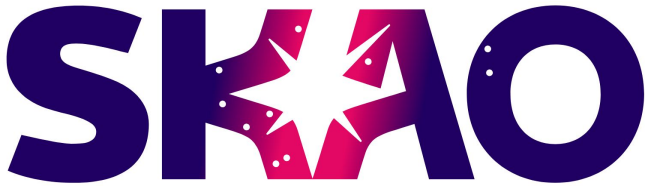

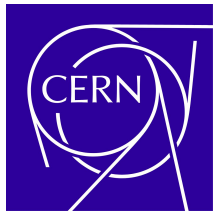

Thank you!!

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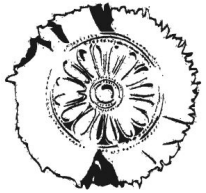
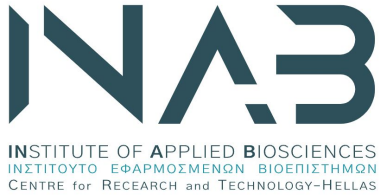
DEL SALENTO





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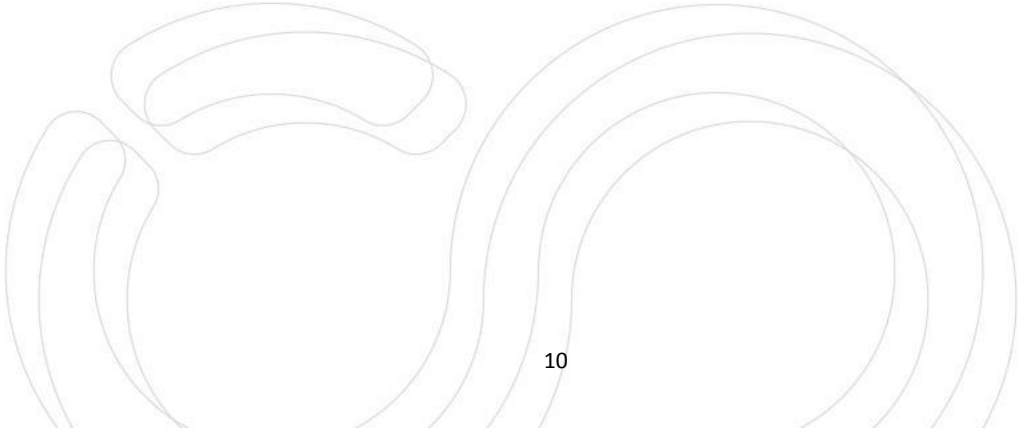
Backup



Example on training in research software: HEP C++ Course and Hands-on Training

Mentors who volunteered for the course hands-on training sessions

Name
Nathan Brei (JLAB)
Thomas R Junk (FNAL)
David Lawrence (JLAB)
Isabella Ozenao (DESY)
AMADIO, Guilherme (IT-SD-PDS)
BIANCO, Gianluca (EP-UAT)
CHAMONT, David
COUTURIER, Ben (EP-LBC)
DUBOVSKY, Michal (EP-UAT)
FIDALGO RODRIGUEZ, Guillermo Antonio (EP-UCM)
GRUBER, Bernhard Manfred
HAGEBOCK, Stephan (IT-GOV-INN)
HEGNER, Benedikt (EP-SFT)
KRASZNAHORKAY, Attila (EP-ADP-OS)
LAMPL, Walter (EP-UAT)
LANTWIN, Oliver (EP-UHC)
LEKSHMANAN, Abhishek (IT-SD-PDS)
MARTIN-HAUGH, Stewart (EP-UAT)
MOYSE, Edward (EP-UAT)
PONCE, Sebastien (EP-LBC)
PROCTER, Tomasz (EP-UAT)
PROMBERGER, Laura (EP-SFT)
ROISER, Stefan (IT-GOV-INN)
SEXTON-KENNEDY, Elizabeth (EP-UCM)
SMITH, David (IT-SD-PDS)
STEWART, Graeme A (EP-SFT)
VALASSI, Andrea (IT-GOV-ENG)

796 students subscribed so far

- 10 “essentials” and “advanced” trainings organized since October 2020
- Organized from within the HEP community for HEP students
- Course material is being continuously updated and further developed

→ Researchers and software engineers are eager to improve their software skills

→ We do have the skills and people to organize the trainings also from within HEP

→ The recognition of organizers and contributors to training needs to be raised

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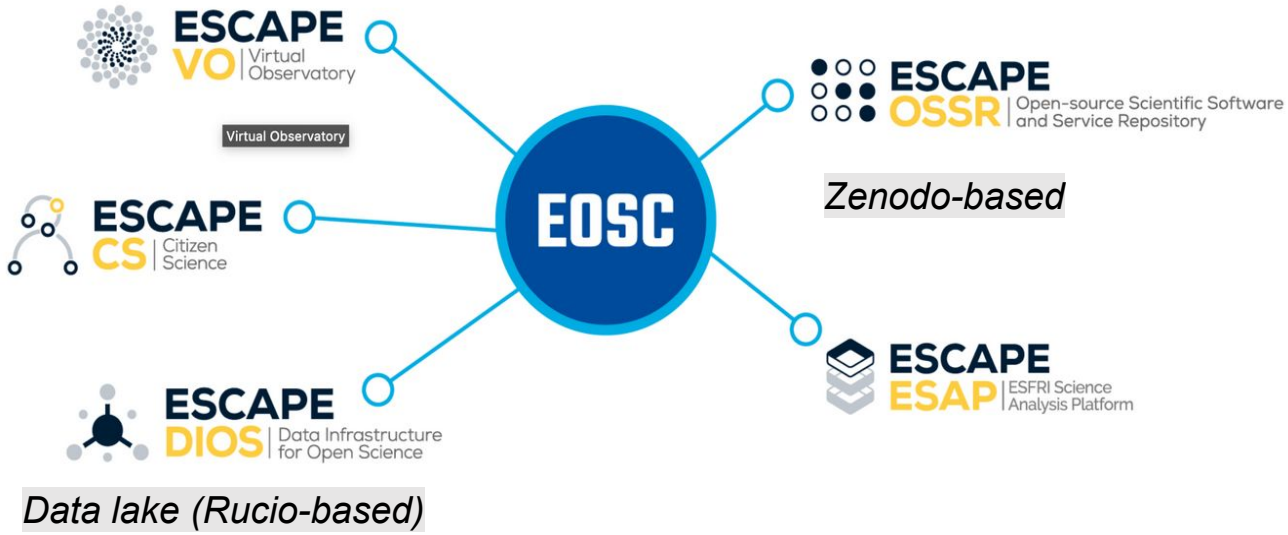

Work Packages

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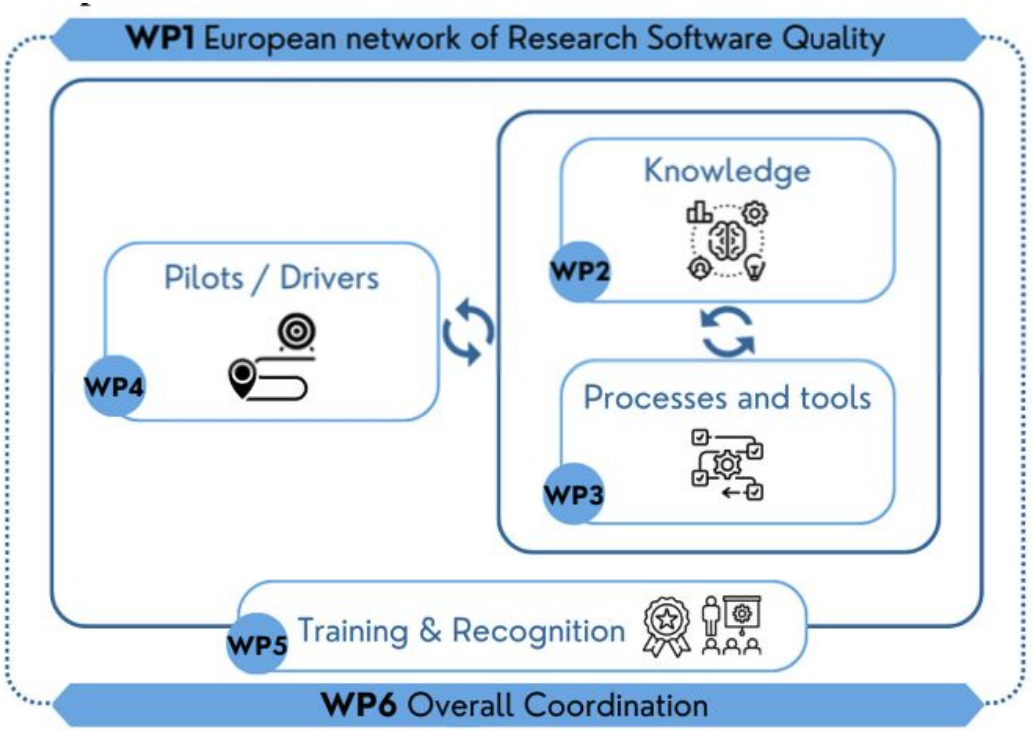
WP5: Develop training for researchers and prototype tools and processes to raise the recognition of research software engineers and trainers



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