



EVERSE (AND MORE)

HSF TRAINING WORKSHOP, 19-20 OCT 2024, KRAKOW

STEFAN ROISER, CERN IT/FTI

CONTENT

- ▶ The EVERSE project
- ▶ TeSS and mTess-X training catalogue
- ▶ JENA working group on Training, Education and Dissemination
- ▶ More training related activities



Paving the way towards a European **Virtual Institute** for **Research Software Excellence**

EVERSE aims to create a framework for research software and code excellence, collaboratively designed and championed by the research communities, in pursuit of building a European network of Research Software Quality and setting the foundations of a future Virtual Institute for Research Software Excellence

ensure **research software curation, quality, preservation and adoption of best practices**, by the Communities, for the Communities, build on collaboration with the five EOSC Science Clusters

adopt a **three-tier model** for research software, i.e., analysis code, prototype tools and research software infrastructure, which captures the varying complexity of research software and its development, and can be used as a basis for research software excellence

credit and recognition for both developers and software are essential components of our strategy to promote sustainable software practices

Mar/2024 ● → Feb/2027 (36 months)

15 Beneficiaries, 1 Associated partner & 2 Affiliated entities

Coordinated by CERTH

EVERSE SCOPE AND PARTNERS

Spans across 5 EOSC science clusters:

- ASTRONOMY AND PARTICLE PHYSICS**
Learn more [↗](#)
- ENVIRONMENTAL SCIENCE**
Learn more [↗](#)
- LIFE SCIENCE**
Learn more [↗](#)
- PHOTON AND NEUTRON SCIENCE**
Learn more [↗](#)
- SOCIAL SCIENCES AND HUMANITIES**
Learn more [↗](#)

<https://everse.software>

BSC **Barcelona Supercomputing Center**
 Centro Nacional de Supercomputación

OpenAIRE

THE UNIVERSITY of EDINBURGH

SKAO

CERN

FAU
 Friedrich-Alexander-Universität Erlangen-Nürnberg

MANCHESTER 1824
 The University of Manchester

UNIVERSITÀ DEL SALENTO

HZDR

HELMHOLTZ ZENTRUM DRESDEN ROSSENDORF

INAB
 INSTITUTE OF APPLIED BIOSCIENCES
 INSTITUTOYTO EΦΑΡΜΟΓΙΜΕΝΩΝ ΒΙΟΓΕΝΕΤΗΜΩΝ
 CENTRE for RESEARCH and TECHNOLOGY-HELLAS

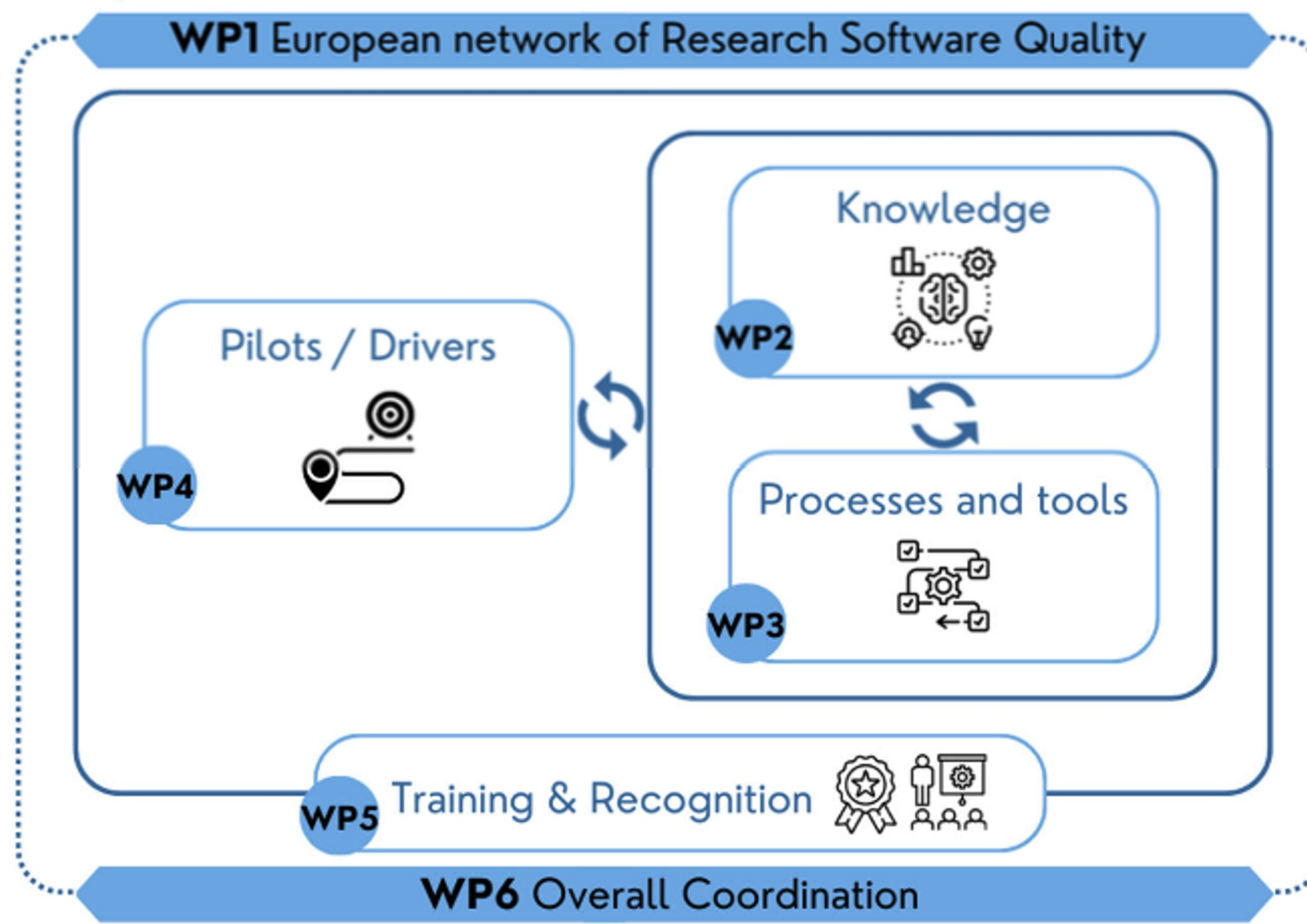
CERTH
 CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

cnrs

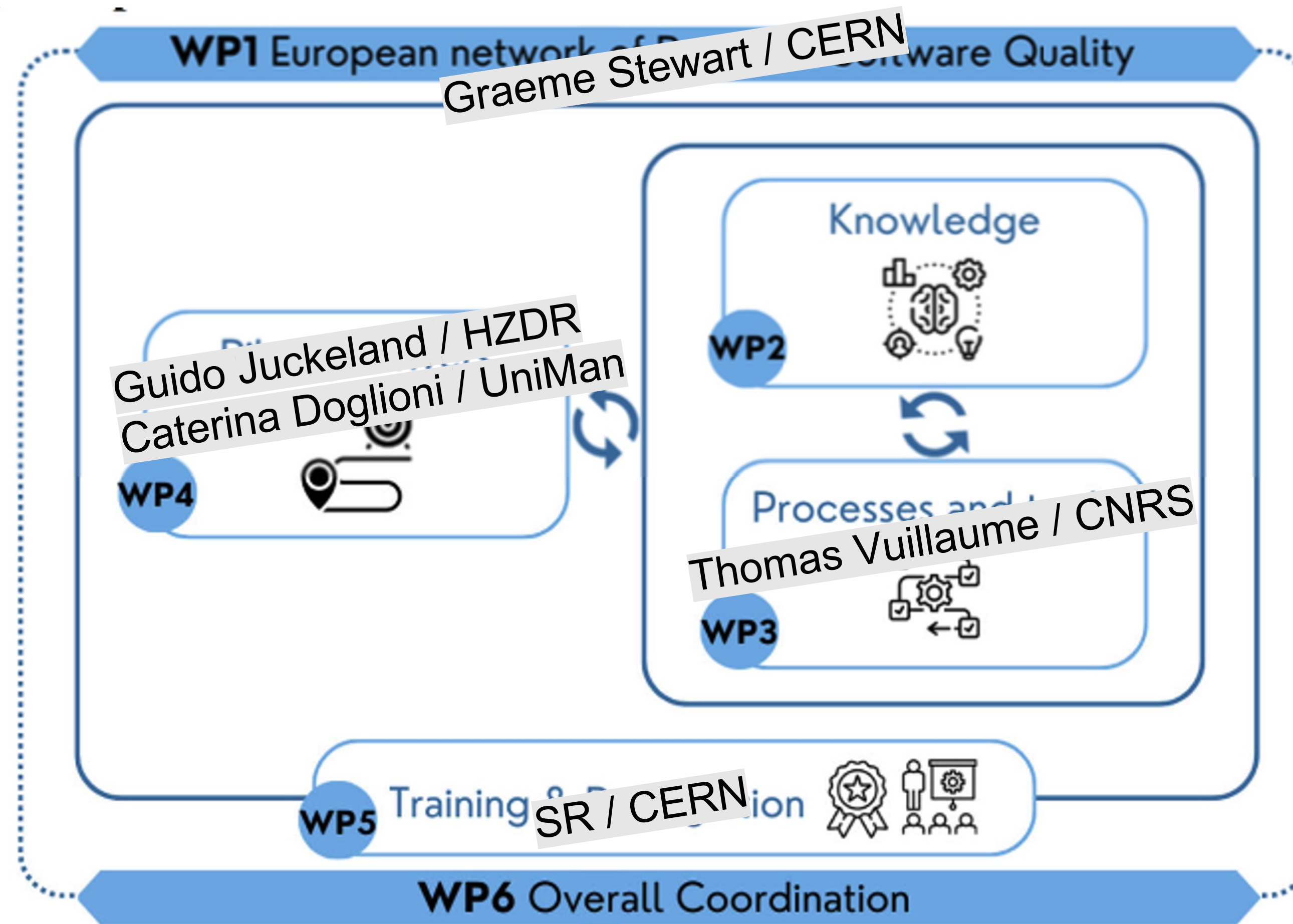
netherlands eScience center

UNIVERSITY OF AMSTERDAM

Overall Organization



Overall Organization



WP Leads and Co-leads
with a connection to HEP

EVERSE WORK PACKAGE 5: CAPACITY BUILDING AND RECOGNITION

Work package objectives:

- ▶ Collect, curate and enhance training materials
 - ▶ Align training materials with best practices in the science clusters and make those resources available via tools developed in EVERSE (RSQKit, TeSS)
- ▶ Build a framework for recognition of **trainers** and RSEs
 - ▶ Build on top of tools developed within EVERSE (Apicuron, Bip!Scholar)
- ▶ Establish long-term training activities
 - ▶ Incorporate training into existing curricula and provide feedback to universities
 - ▶ Develop a network of trainers and establish a process to keep them engaged

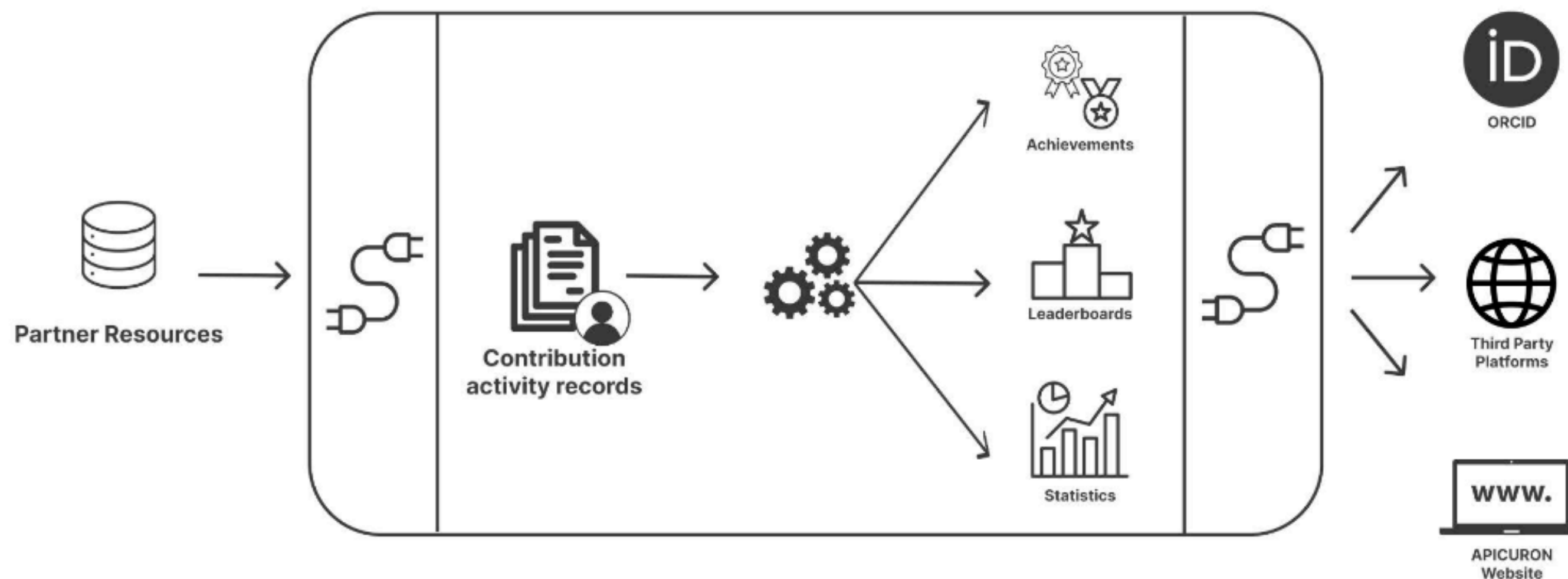
RECOGNITION OF SCIENTIFIC SOFTWARE ENGINEERING

Building on tools developed
by EVERSE partners

What is APICURON ?

APICURON is a software solution that aims to serve the following purposes:

- Platform to acknowledge **contributed efforts**
- Contribution **progress tracker** for platforms that collect contributions in its various forms
- **Portfolio platform** for contributors on the platforms
- Simple **feedback-loop** for platforms to increase **contributor engagement**



Bouhraoua Kamel Eddine Adel, Skylnik Alina (Univ Padova)



EVERSE FIRST RESULTS AND HOW TO JOIN

Research Software Quality Kit

Join us in EVERSE !!

- ▶ Shape software quality in Europe
- ▶ Join software quality events
- ▶ Get access to EVERSE channels
- ▶ ...

✓ <https://everse.software/network/>
(individual or institutional level)

The screenshot shows the 'Your tasks' page of the RSQKit website. The page has a navigation menu on the left with categories like 'Research Software', 'Research Software Quality', 'Your role', and 'Your tasks'. The main content area is titled 'Your tasks' and includes a search bar and a list of task cards. The task cards are: 'Creating a ReadTheDocs Page', 'Environmental Sustainability of Research Software', 'How to make your code readable', 'Licensing software', 'Releasing code', 'Reproducible virtual software development environments', and 'Version Control in Research Software Engineering'. The footer of the page features the eosc and EVERSE logos and the European Union flag.

✓ <https://everse.software/RSQKit>



The TeSS Training Portal

<https://tess.elixir-europe.org>

How can TeSS help you?

Search the portal for courses, events, videos, presentations, learning pathways, handbooks...
All types of resources at all levels for leveraging [computational resources in the life sciences](#).

Search TeSS...

> 100
content
providers

255
upcoming
events

14,664
past
events

Browse the catalogue

Events

Discover the latest training events and news from ELIXIR nodes and 3rd-party providers.

[Start browsing. →](#)

Materials

Browse the catalogue of training materials offered by ELIXIR nodes and 3rd-party providers.

[Start browsing. →](#)

Workflows

Create training workflows to visualise learning steps and link to resources specific to your training needs.

[Start browsing. →](#)

Trainers

Browse a directory of trainers based on their skills and expertise.

[Start browsing. →](#)

3,473
materials



ELIXIR TESS

- ▶ Training catalogue developed by ELIXIR (life sciences EVERSE partner)
- ▶ One-stop shop for trainers and trainees to discover online information and content
 - ▶ Stores meta-info and links to training materials, events, tutorials etc on remote sites
 - ▶ Curated and organised content: collections, learning paths (coming soon)
 - ▶ Content can be added manually and automatically from the provider sites
- ▶ Open source (<https://github.com/ElixirTeSS/>) and extensible

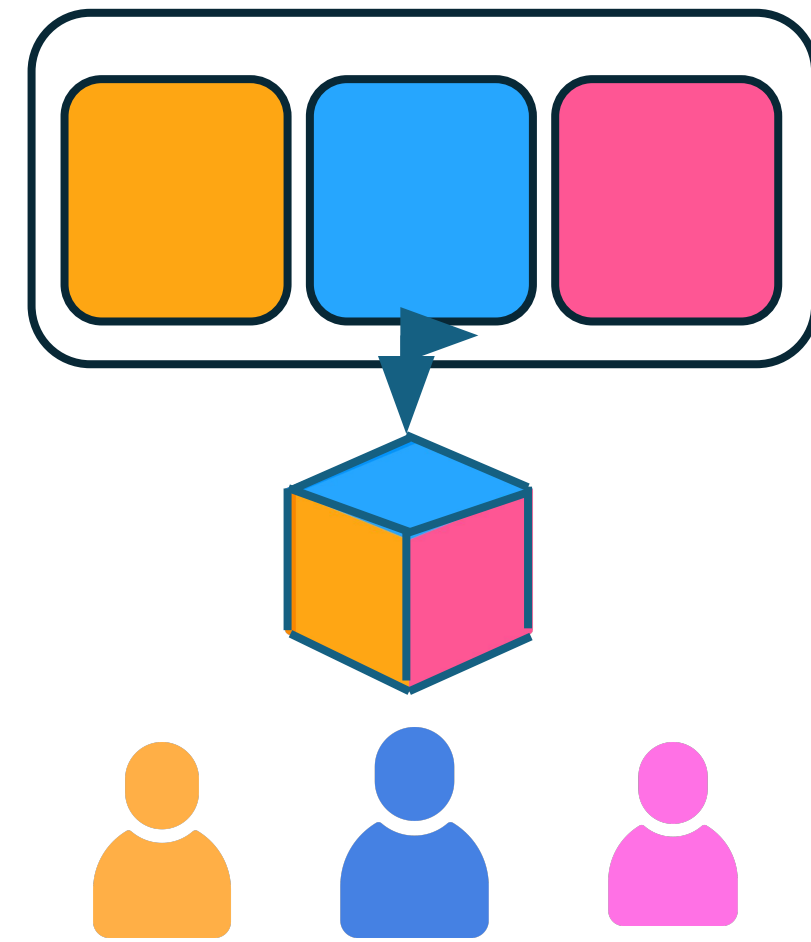
Full presentation and recording at [EVERSE WP5 Meeting](#)

FROM TESS TO MTESS-X

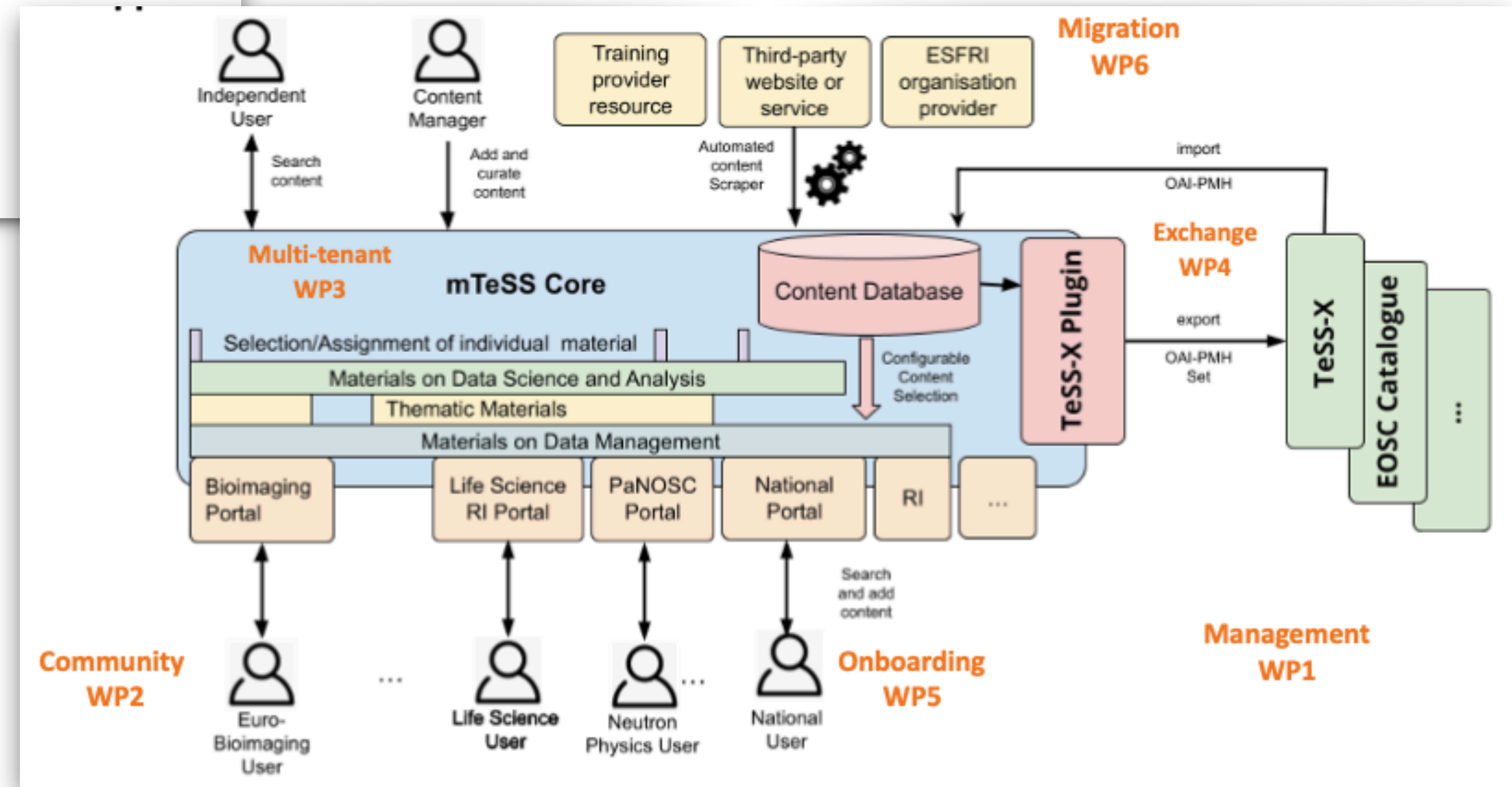
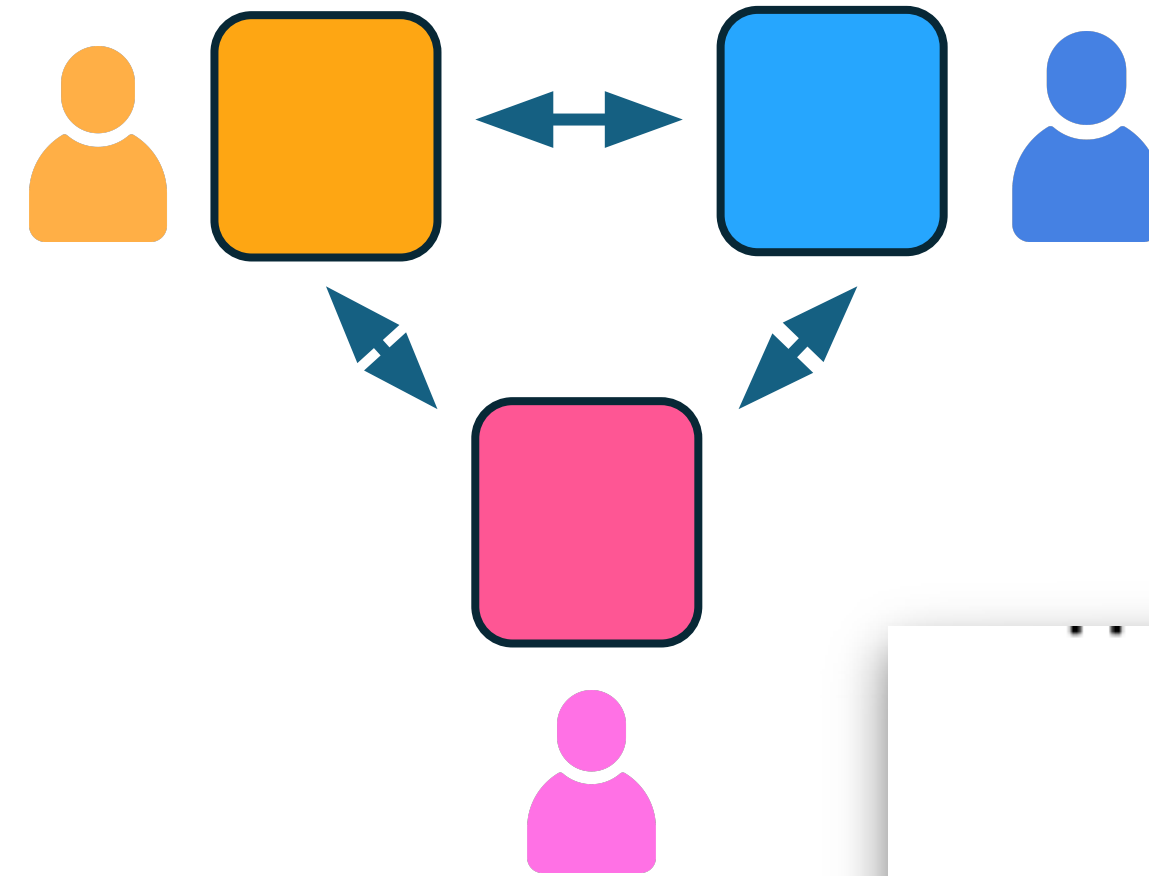
- ▶ Successful OSCARS EU grant proposal by HZDR and Univ Manchester to:
 - ▶ enable a multi-tenant TeSS infrastructure
 - ▶ establish information exchange among multiple TeSS instances

MTESS-X CONCEPTS

multi-tenant TeSS



TeSS-eXchange



Carole Goble (Univ Manchester)

Oliver Knodel (HZDR)

FROM TESS TO MTESS-X

- ▶ mTeSS-X project kickoff meeting announced: 1 Nov, 14.00-17.00 CET
 - ▶ https://docs.google.com/document/d/1PeAs_I05udKZ1RhgKVBOQTPnpckzAWRgzfHTTjPUAUY
- ▶ CERN graduate position open to also contribute to the effort, tentative start Jan '25
 - ▶ <https://smrtr.io/nGf52>
- ▶ Discussion with HSF to use mTeSS-X to publish the training working group content



JENAA

Joint ECFA-NuPECC-APPEC Activities


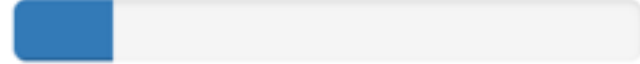
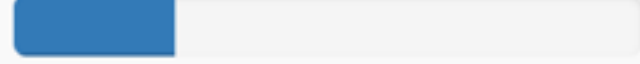
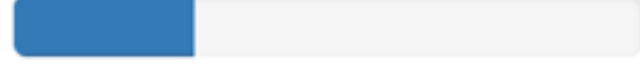
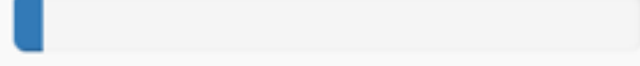
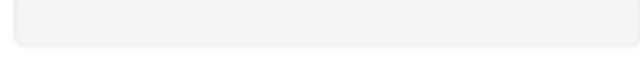
JENA WORKING GROUP 5: TRAINING, DISSEMINATION & EDUCATION

- ▶ JENA is a joint effort of the nuclear (NuPECC), particle (ECFA) and astroparticle (APPECC) communities
- ▶ The Training, Dissemination & Education WG is part of a wider [JENA computing initiative](#)
- ▶ Charge to produce a “JENA European White Paper on Federated Computing” across all working groups
 - ▶ Will be used as input for the [European Strategy for Particle Physics](#) process
- ▶ **Training Workshop, 18-20 Nov @ CERN** <https://indico.cern.ch/e/JenaWg5Nov24>
 - ▶ Gathering, discussing and producing input for the white paper
- ▶ Join our ~ bi-weekly working group meetings at <https://indico.cern.ch/category/18038/>

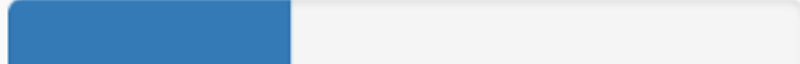
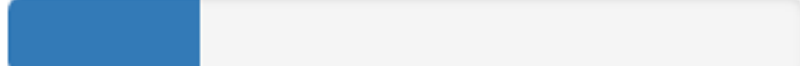
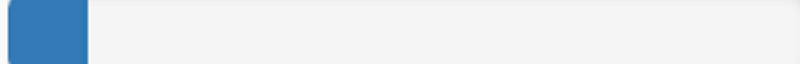
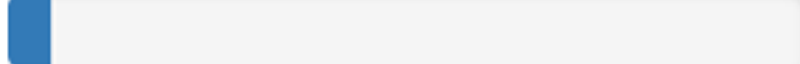
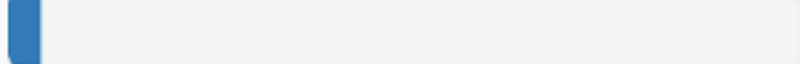
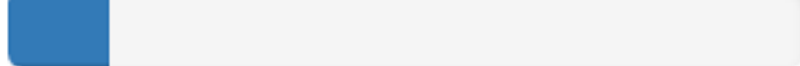
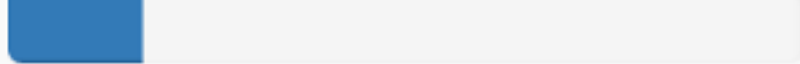
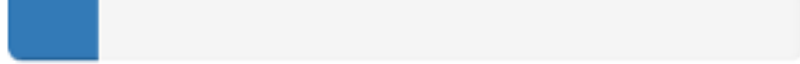
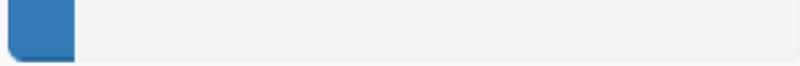
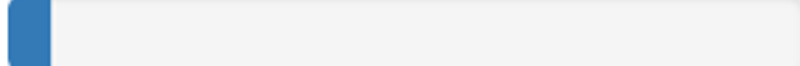
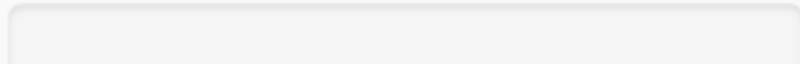
SPECTRUM AND JENA SURVEY ON SCIENTIFIC COMPUTING

https://ec.europa.eu/eusurvey/runner/SPECTRUM-JENA_Survey1

Which are the categories which better describe your role(s)?

		Answers	Ratio
Researcher / user of scientific computing resources (doing analysis, R&D, operations, ...)		57	81.43 %
Manager of a scientific initiative (for example, an experiment, an instrument, an observatory)		11	15.71 %
Manager of an e-Infrastructure (for example a computing centre, a storage facility, a distributed computing facility)		18	25.71 %
Research software engineer (writing, testing and managing code for an initiative)		20	28.57 %
Other (please specify)		3	4.29 %
No Answer		0	0.00 %

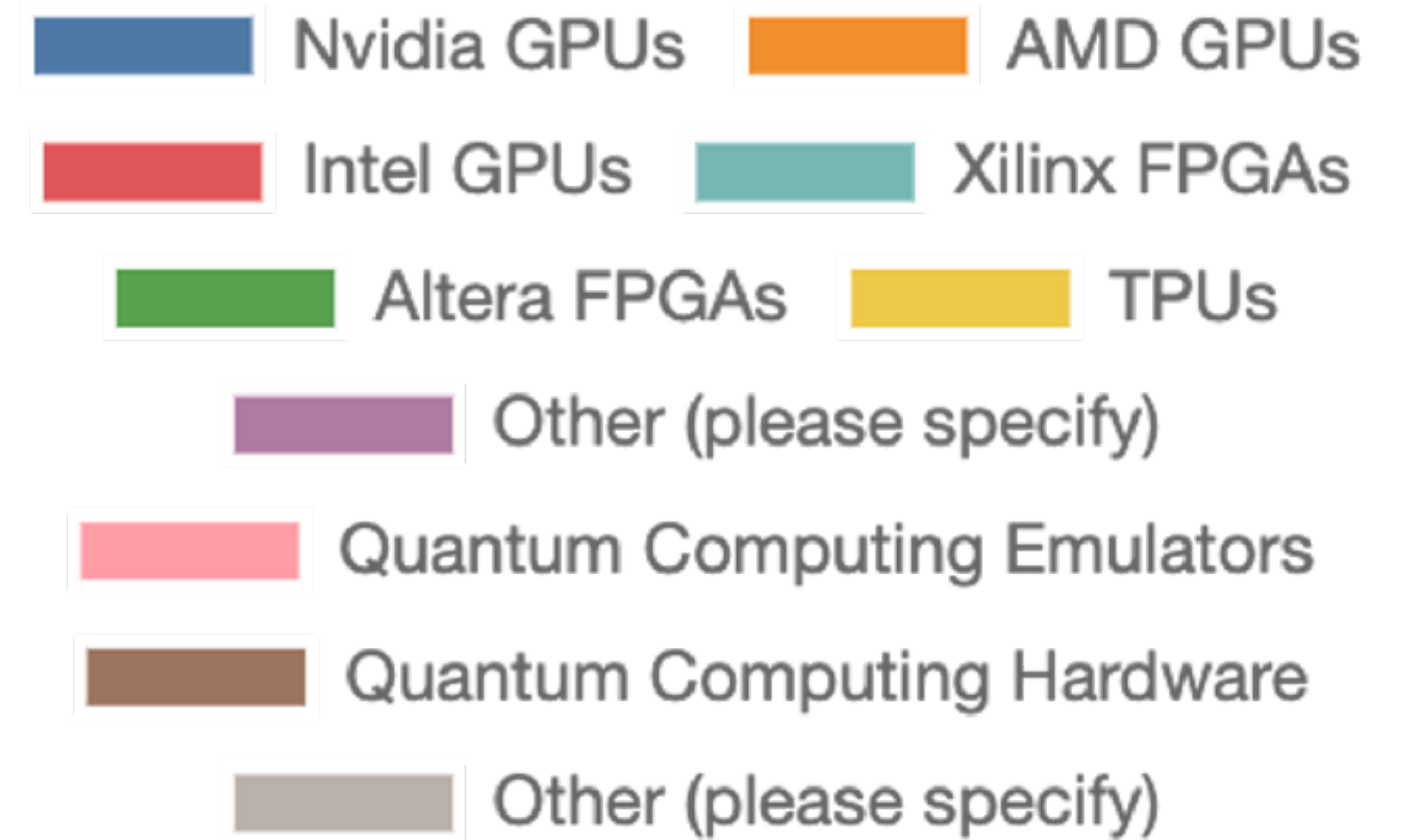
Which is/are your scientific domain(s) of expertise (if applicable)?

		Answers	Ratio
Experimental High Energy Physics (HEP)		25	35.71 %
Theoretical High Energy Physics (HEP)		17	24.29 %
Observational Radio Astronomy (RA)		7	10.00 %
Experimental Gravitational Waves (GW)		4	5.71 %
Theoretical Gravitational Waves (GW)		3	4.29 %
Experimental Nuclear Physics (NP)		9	12.86 %
Theoretical Nuclear Physics (NP)		12	17.14 %
Observational Astroparticle (not RA or GW)		8	11.43 %
Other physics related domains (please specify below)		6	8.57 %
Other non-physics related research domains (please specify below)		4	5.71 %
No Answer		0	0.00 %

SPECTRUM AND JENA SURVEY ON SCIENTIFIC COMPUTING (CTD)

Which are the typical programming languages that you use in your initiative?

	Answers	Ratio
Python	36	51.43 %
C/C++	36	51.43 %
Java	2	2.86 %
Fortran	19	27.14 %
Perl	0	0.00 %
R	3	4.29 %
Julia	4	5.71 %
C#	1	1.43 %
Go	1	1.43 %
Swift	0	0.00 %
Javascript (or TS or NodeJS)	1	1.43 %
Rust	0	0.00 %
Other (please specify)		



Supported base architectures

	Answers	Ratio
x86_64 (Intel, AMD, ...)	18	25.71 %
Power8/9/10	0	0.00 %
aarch64	6	8.57 %
Other (please specify)	4	5.71 %
Risc-V	0	0.00 %

Tommaso Boccali (INFN)

SPECTRUM AND JENA SURVEY ON SCIENTIFIC COMPUTING (CTD)

Who designs software?

- Researchers dedicating a fraction...
- Professional software engineers h...
- Procured from external non-resear...
- Open source enthusiasts willing t...
- Other (please specify)

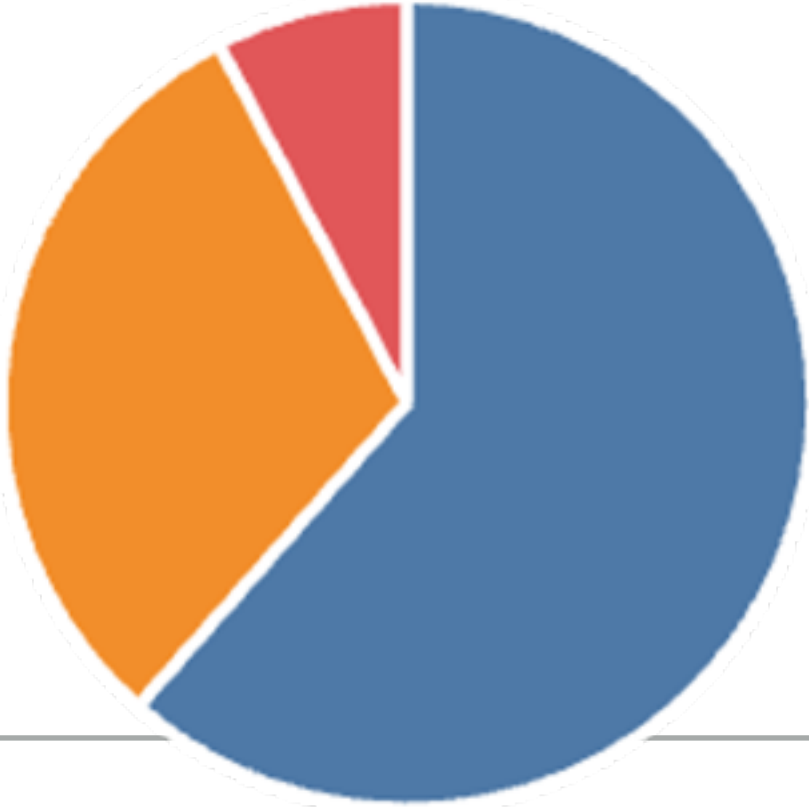


Do people enter your field with the right software skills? (for example, at undergrad / PhD / PostDoc / Staff levels?)

- Yes
- No
- Some do



- No
- Yes, but with limited career path...
- Yes, with good career paths
- Other



Do you feel researchers developing and maintaining software and managing the computing infrastructures receive appropriate recognition in your institution / initiative?

Tommaso Boccali (INFN)

More training related activities

MORE TRAINING RELATED WORKING GROUPS, PANELS, INITIATIVES, ...

- ▶ EIROforum Working Group: Training and Career Development



- ▶ Workshop in Feb 25 on [how to create online training](#)

- ▶ Next Gen Triggers WP4: Education Programmes and Outreach



- ▶ Working on curriculum for RSEs in data processing and analysis

Alberto Pace, Felice Pantaleo (CERN)

- ▶ Please contact Alberto and Felice for details

- ▶ ICFA Data lifecycle panel → see [Kati's talk](#)



Kati Lassila-Perini (Helsinki Inst. for Physics)

SUMMARY

- ▶ EVERSE project started ½ year ago
 - ▶ Join and shape the future of research software in HEP and beyond
- ▶ mTess-X a multi-tenant and federated training catalogue
 - ▶ Enabler to connect training resources across natural sciences
- ▶ JENA computing initiative and ICFA data lifecycle panel
 - ▶ Provide input on training needs via those activities

IMPORTANT LINKS

- ▶ Join EVERSE: <https://everse.software/network/>
- ▶ mTess-X project kickoff meeting: https://docs.google.com/document/d/1PeAs_I05udKZ1RhgKVBQTPnpckzAWRgzfHTTjPUAUY
- ▶ JENA Training workshop: <https://indico.cern.ch/e/JenaWg5Nov24>
- ▶ EVERSE graduate opening @ CERN: <https://smrtr.io/nGf52>
- ▶ SPECTRUM/JENA survey: https://ec.europa.eu/eusurvey/runner/SPECTRUM-JENA_Survey1