



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

First OSSR Open Collaboration Meeting

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Introduction



- Aim of the meeting
 - First meeting of OSSR community after the end of the ESCAPE project
 - Shape the future organization and set-up of the Open Software and Service Repository
 - Discussion on organisation
 - Establish bodies and roadmaps
 - Onboarding of new software
 - Three main areas of collaboration:
 - Policy & Strategy
 - Onboarding
 - Technical Developments
- Open meeting in an Open Collaboration
- Round table of introductions and expectations



- ESCAPE transforms into the **ESCAPE Open Collaboration**
 - Partners use reasonable endeavours to achieve the objectives
 - Work will be managed workplan and current organisational structure
 - Partner contribute the time and effort necessary to complete the work
- Work Plan (currently) with 12 points
 - Common infrastructure, **repository and catalogue for software**, VRE, collaborative operations, citizen science, advanced technologies, HPC community, **virtual software institute**, career development, science projects, European Strategy for Data
- Strive to include new partners (e.g. for onboarding following “train the trainers”)



Current 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

HTC

Grid clusters, etc

Private/public clouds

Commercial clouds

GÉANT





The new ESCAPE Collaboration work programme

ESCAPE CC
Operating the community-based “Competence Center” for EOSC-alignment, train and support, extended outreach, financial model for services and networking with other SCL-CCs

ESCAPE EVSI
R&I for an “European Virtual Institute for Research Software” for advanced technologies



Instances

G. Lamanna,
ESCAPE to the Future

VRE services

ESCAPE DIOS | Data Infrastructure for Open Science
Access physical & e-infrastructure
Processing & Analysis
Security & Operations

ESCAPE OSSR | Open-source Scientific Software and Service Repository
Aggregator & Integrators
Sharing and Discover
Training & Support

ESCAPE ESAP | ESFRI Science Analysis Platform
Processing & Analysis
Sharing and Discovery
Training & Support

ESCAPE CS | Citizen Science
Sharing and Discovery

ESCAPE VO | Virtual Observatory
Processing & Analysis
Sharing and Discovery
Training & Support

Programmes

ESCAPE COSO
Challenging “Open Science Objectives” by RI commitments in Open Science Projects (OSP) as well as Cross-Cluster Open Science Projects (COSP)

ESCAPE TECH
Bring the FAIRness within technology, R&D and innovation projects as well as explore new “close-to-sensors” low-latency open-data science

ESCAPE CARS
Career development and rewarding for researcher committing in Open Science. Planning, tracking, and assessing scientific knowledge production

ESCAPE SDSS
Building synergies on “Sector Data Spaces” for Society: Green deal, Health, Manufacturing, Education and Skills



- Proposal: Organise meeting and bodies along the lines of
 - Policy & Strategy
 - Onboarding
 - Technical Developments

(can be adopted later on, but needed a start to organise today's meeting and next activities)



- Round table of introductions and expectations
 - Name
 - Institute / project affiliation
 - Interest in OSSR
 - Possible contributions in the future, past contributions
 - Expectation for this meeting



Policy Part



Timeline of this morning

- Reporting; 45 min
 - KG: Research Software Activities – Landscape
 - DMA Activities
- Coffee break; 20 min
- Future Options and Roadmap; 30 min
 - moderation: KG, support: Jutta Schnabel
- Future organization of Policy Group; 30 min
 - Organizing group, meetings & communication infrastructure
 - Open meeting for innovation
 - Publications



Landscaping



- Research software is a necessary ingredient to science on par with data
 - more and more acknowledged by national and international science organisation and recognised by funding
 - Many bottom up and top down initiatives and projects focused on
- In the following an incomplete landscape of research software (primarily in astro/particle physics)
 - Projects and Institutes
 - Groups and initiatives
 - Archives and Repositories
- Where do we position OSSR in this landscape?



Projects and Institutes - International

● EOSC Future (primarily via Test Science Projects) <https://eoscfuture.eu>

EOSC FUTURE WILL PROVIDE A USER-FRIENDLY ENVIRONMENT FOR:



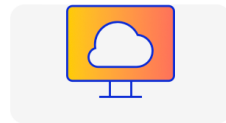
**DATA
DISCOVERY**



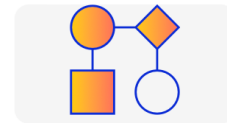
**DATA
STORAGE**



**DATA
RECOMPOSITION**



**COMPUTING
SERVICES**



**COMPLEX
WORKFLOWS**



**INTEGRABLE
SERVICES**

The platform will support diverse scientific workflows with services that facilitate such workflows and that help users discover, manage, process and analyse data.



- EOSC Synergy (finished 2022)

<https://www.eosc-synergy.eu>



EOSC Synergy for Software Developers

Software is the enabler of computing technology. In EOSC-Synergy we develop software to support the deployment of quality services for Software and FAIR Data. We develop tools to streamline access to e-infrastructures, and we integrate scientific services in EOSC-enabled infrastructures



Projects and Institutes - International

- ESFRI Thematic Cluster Projects – most going to Open Collaborations after finishing <https://science-clusters.eu> (coming soon)

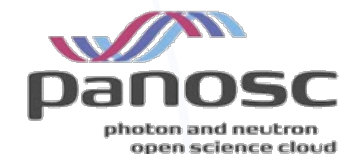


- Common answer to call [HORIZON-INFRA-2023-EOSC-01-02](#) handed in 03/2023

- Expected Outcomes from call:
 - A framework of community curation for quality of software and code across the different disciplines.
 - Infrastructure, tools and services to develop, describe with proper metadata, version, archive, share and reuse research software.
 - The notion of software quality is defined.
 - Baseline quality indicators along the notion of “minimum quality” are defined.
 - The quality of research software is improved.
 - Software is developed in a sustainable way and its reuse is maximised.



- [EOSC-Life](#): biology and medicine
 - Services: <https://www.eosc-life.eu/services/>
- [ENVRI-FAIR](#): environmental science
 - Hub: <https://envri.eu/envri-hub/>
- [ESCAPE](#): astronomy- and accelerator-based particle physics
 - Services: <https://projectescape.eu/services>
- [SSHOC](#): social sciences and humanities
 - Marketplace: <https://marketplace.sshopencloud.eu/>
- [PaNOSC](#): Photon and Neutron science
 - Services: <https://www.panosc.eu/services/>





- **ELIXIR**: life science organisations
<https://elixir-europe.org>
- Best Practices in software developments:
<https://elixir-europe.org/platforms/tools/software-be>
- Portals: <https://elixir-europe.org/what-we-offer/portals>

Find the right software tools and workflows

bio.tools



bio.tools helps you find and select bioinformatics software and connect it in workflows.

BioContainers



Search a repository of containerised software that you can build into workflows.

WorkflowHub



A registry for sharing and publishing scientific computational workflows.



Projects and Institutes - International

- Software Sustainability Institute
<https://www.software.ac.uk>



Software
Sustainability
Institute

The Software Sustainability Institute cultivates better, more sustainable, research software to enable world-class research. We help people build better software, and we work with researchers, developers, funders and infrastructure providers to identify key issues and best practice in scientific software.

- Programmes and Events
 - Fellowship Programme
 - Research Software Healthcheck
 - Carpentry Programmes
 - Research Software Engineers
 - Collaborations Workshops
 - Research Software Camps
 - Past events
 - Code of Conduct
 - Open Call for Projects



Projects and Institutes - (Inter)national

- Netherlands eSciencecenter
<https://www.esciencecenter.nl>



- What we do
 - How can we help you?
 - Calls for proposals
 - Projects
 - Training & Workshops
 - Events
 - Communities
 - Fellowship Programme
 - Software Management Plans



**Academic research,
powered by pioneering
software**

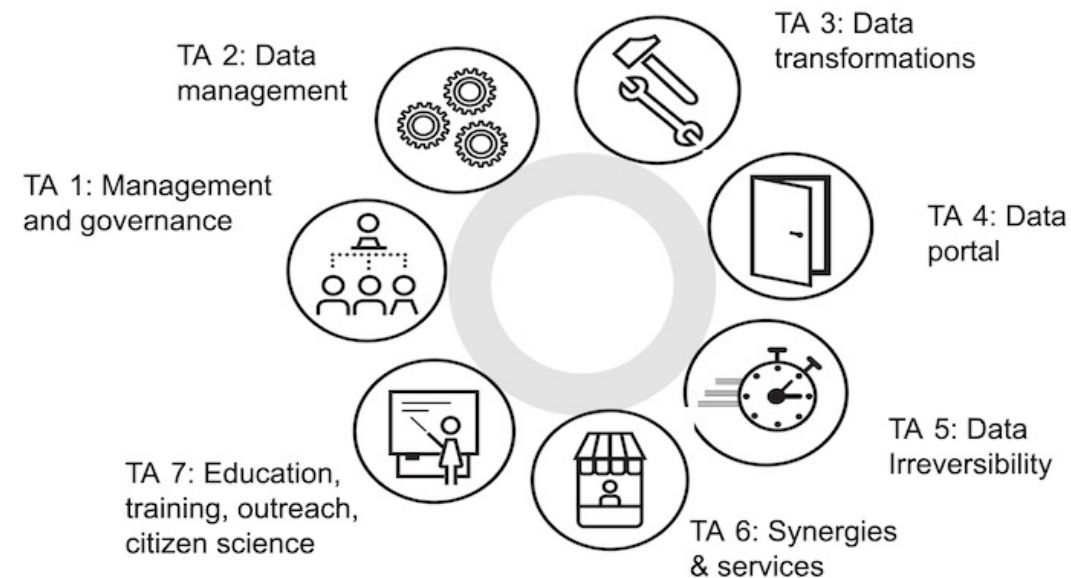
We're making sense of digital for science and scholarship



Projects and Institutes - National

- focusing on Germany for today
- German NFDI initiative (national research data infrastructure)
<https://www.nfdi.de>
 - Related projects:
 - PUNCH4NFDI: particles physics, astrophysics, nuclear and hadron physics
<https://www.punch4nfdi.de>
 - DAPHNE4NFDI: photons and neutron sources and experiments
<https://www.daphne4nfdi.de>
- DMA – see additional presentation
- DLR Institute for Software Technology
<https://dlr.de/sc/en/>
 - [DLR Software Engineering Guidelines](#)

PUNCH4NFDI Task Areas:



Landscaping - Groups

- Research Data Alliance
<https://rd-alliance.org>
"The Research Data Alliance (RDA) builds the social and technical bridges to enable the open sharing and re-use of data."
 - Groups: <https://www.rd-alliance.org/groups/>
 - [FAIR for Research Software \(FAIR4RS\) WG](#)
 - [FAIR Principles for Research Software \(FAIR4RS Principles\)](#)
- Force11
<https://force11.org>
"FORCE11 is a community of scholars, librarians, archivists, publishers and research funders that has arisen organically to help facilitate the change toward improved knowledge creation and sharing. Individually and collectively, we aim to bring about a change in modern scholarly communications through the effective use of information technology."
- Research Software Alliance
<https://www.researchsoft.org>
"Our vision: Research software and those who develop and maintain it are recognised and valued as fundamental and vital to research worldwide"
 - Funders Workshop [The Future of Research Software](#) (with eScienceCentre) → Amsterdam Declaration
<https://future-of-research-software.org/draft-amsterdam-declaration-on-funding-research-software-sustainability/>
(7 principles and 10 recommendations for software sustainability)



- EOSC Association Task Forces

<https://eosc.eu/news/eosc-association-task-forces-community-agenda>

- AG Implementation of EOSC
 - [TF PID Policy and Implementation](#)
 - [TF Researcher Engagement and Adoption](#)
 - [TF Rules of Participation Compliance Monitoring](#)
- AG Metadata and Data Quality
 - [TF FAIR Metrics and Data Quality](#)
 - [TF Semantic Interoperability](#)
- AG Research Careers and Curricula
 - [TF Data Stewardship Curricula and Career Paths](#)
 - [TF Research Careers, Recognition, and Credit](#)
 - [TF Upskilling Countries to Engage in EOSC](#)
- AG Sustaining EOSC
 - [TF Defining Funding Models for EOSC](#)
 - [TF Long-Term Data Preservation](#)
- AG Technical Challenges on EOSC
 - [TF AAI Architecture](#)
 - [TF Infrastructure for Quality Research Software](#)
 - [TF Technical Interoperability of Data and Services](#)





- HEP Software Foundation

<https://hepsoftwarefoundation.org>

“The HEP Software Foundation (HSP) facilitates coordination and common efforts in high energy physics (HEP) software and computing internationally.”

- [8 Working Groups](#)

- Activities:

“We organise many activities, from our [working groups](#), to organising [events](#), to supporting projects as [HSP projects](#), and helping communication within the community through our [discussion forums](#) and [technical notes](#).

The HSP can also write [letters of collaboration and cooperation](#) to project proposals.”



Landscaping – Software Repositories

- EOSC Marketplace
(all EOSC related services)
<https://marketplace.eosc-portal.eu>

- Research Software Directory
(eScienceCentre)
<https://research-software-directory.org>
(also <https://helmholtz.software>)

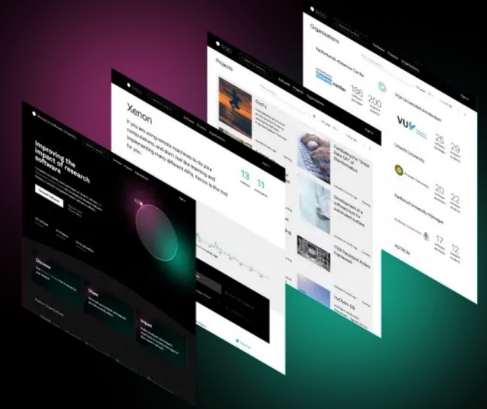
Welcome to the EOSC
Catalogue and
Marketplace

Integrated platform that allows easy access to lots of services for various research domains along with data and integrated data analytics tools. Browse by scientific domain, your current research activity or provider that you know and trust and, if you need help, we are here for you!



Show your research software to the world

The [Research Software Directory](#) is designed to show the impact research software has on research and society. We stimulate the reuse of research software and encourage proper citation of research software to ensure researchers and RSEs get credit for their work.



- Zenodo
<https://zenodo.org>

- Software Heritage
<https://www.softwareheritage.org>

About Zenodo



Passionate about Open Science!

Built and developed by researchers, to ensure that everyone can join in Open Science.

The OpenAIRE project, in the vanguard of the open access and open data movements in Europe was commissioned by the EC to support their nascent Open Data policy by providing a catch-all repository for EC funded research. CERN, an OpenAIRE partner and pioneer in open source, open access and open data, provided this capability and Zenodo was launched in May 2013.

In support of its research programme CERN has developed tools for Big Data management and extended Digital Library capabilities for Open Data. Through Zenodo these Big Science tools could be effectively shared with the long-tail of research.

We are building the universal software archive



Collect
Preserve
Share

We **collect** and **preserve** software in source code form, because software embodies our technical and scientific knowledge and humanity cannot afford the risk of losing it.

Software is a precious part of our cultural heritage. We curate and make accessible all the software we collect, because only by **sharing** it we can guarantee its preservation in the very long term.

[Browse the archive](#)

[Discover our mission](#)



openAire
<https://explore.openaire.eu>

Discover open linked research.

A comprehensive and open dataset of research information covering 161m publications, 58m research data, 316k research software items, from 124k data sources, linked to 3m grants and 196k organizations.

All linked together through citations and semantics.

161M Publications deduplicated



PubMed

arXiv.org

BASE

SciELO

LA Referencia
Red de repositorios de acceso abierto a la ciencia



SSOAR

RePEc

CORE

zenodo

NARCIS

Future Options and Roadmap

Future organization



- Goals & Mission statement from OSSR final workshop
 - Continue to maintain the OSSR
 - Collect software to provide additional visibility and citeability; strengthen software competence with quality in focus
 - Use of OSSR as forum to foster publication
 - Offer standards for new communities to join
- Publications
 - Open Source and Service Repository Policy <https://doi.org/10.5281/zenodo.6757112>
 - The OSSR mission
 - Guidelines and rules of participation to the ESCAPE OSSR
 - Onboard Process incl. checklist
 - Metadata definition
 - Technical Paper draft published <https://open-research-europe.ec.europa.eu/articles/3-46/v1>
 - ESCAPE General Paper – to be written until Summer



Future Options and Roadmap – Points of Discussion with Proposals

- Positioning of OSSR
 - ESCAPE Open Collaboration (members)
 - Depth of work/involvement
- Organisation
 - 3 Bodies: Policy & Strategy / Onboarding / Technical Developments
 - Proposal: charge policy group with the formulation of an MoU
- Communication Channels
 - Meeting framework
 - Chat channel
 - Mailing List
 - Development Platform
- Topics / Subgroups(?) for Policy
 - Organisation
 - Best Practices
 - Innovative Approaches
 - Software Quality
 - Software Efficiency



Organizing group, meetings & communication infrastructure



Organisation of Group with Proposals

● Meetings

- General Meeting every 3 Months with organisational, onboarding, technical part – one focus/highlight
- Monthly meetings of subgroups

● Group Composition

- (preliminary) WG-lead + co-lead
- members

