



ESCAPE

European Science Cluster of Astronomy &
Particle physics ESFRI research Infrastructures

OSSR Open Collaboration Meeting 16/17th of November 2023 Kay GRAF

ECAP, Erlangen Centre for Astroparticle Physics, Friedrich-Alexander-Universität Erlangen-Nürnberg



Slides for Session: Policy & Strategy

Points for the next 1.5 days

Policy & Strategy:

Thursday:

- Introduction - ESCAPE Collaboration
- RSD - as front page of OSSR: automatic or opt-in model, push & pull approach
- Onboarding: who to intensify and incentivise

Friday:

- OSCARS, EVERSE introduction
- Gathering of interests and needs of ESFRIs (along task areas - provide guiding questions before)
 - alignment with OSCARS calls
 - alignment with EVERSE tasks

Technical Discussions:

Zenodo Update

Hackaton:

- Onboarding Workflow
- Issue & MR Closing on eOSSR Library

Onboarding:

- onboarding talks - no current new onboardings



reminder

Future of ESCAPE

- ESCAPE transforms into the **ESCAPE Open Collaboration**
 - Partners use reasonable endeavours to achieve the objectives
 - Work managed according to workplan and current organisational structure
 - Partners 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”)





reminder

ESCAPE EOSC to cell evolve to

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-infrastructures
Processing & Analysis
Security & Operations

ESCAPE OSSR | Open-source Scientific Software and Service Repository
Aggregator & Integrators
Sharing and Discovery
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



ESCAPE Collaboration: Current Status and Next Steps

- Collection of interests and contact persons from all participating ESFRIs/institutions done
- ESCAPE Review Paper in Draft – currently on hold (was planned for Summer in as open letter to [ORE](#))
- First common meeting of (old) ESCAPE Executive Board and new E-C Executive Board on 27/11
 - participants: coordinator of a working group or scientific-technical coordinator-representative of one of the ESCAPE Research Infrastructure members;
 - This meeting will be mainly dedicated to share information about the activities and organisation of the working groups, interfaces with Horizon Europe/other projects funded in support of ESCAPE's work programme, and to organise the election of the Technical Coordinator (who will be the EB chairperson).
- **ESCAPE Project Scientist vacancy**



ESCAPE Collaboration: Current Status and Next Steps

Executive Board (EB) - tasks from the collaboration agreement

- *The EB reports to the Strategy Board (SB).*
- *The members of the EB are the technical coordinators (or equivalent) of the RIs in the collaboration and leaders of implementation working groups. The chairperson will be nominated by the members. The chairperson will become the Technical Coordinator of the collaboration, and will have a term of 2 years, renewable.*
- *The role of the EB is to*
 - *Propose to the SB and coordinate agreed technical collaborative projects between the RIs;*
This can include but is not limited to work on common software, infrastructure, services, etc.
The work will be executed through setting up and overseeing working groups with members drawn from the RI's as needed, and leaders of any eventual work package structure who would also be members of the EB.
 - *Technical coordination with the EOSC and EOSC-related projects.*
- *The EB will meet monthly or as required.*



Search software and services in the ESCAPE repository

Welcome to the ESCAPE OSSR!

Browse the OSSR content (<https://zenodo.org/communities/escape2020/search?page=1&size=20&q=&type=software>).

What is it?

The ESCAPE Open-source Scientific Software and Service Repository (OSSR) is a sustainable open-access repository to share scientific software, services and datasets to the astro-particle-physics-related communities and enable open science. It is built as a curated Zenodo community (<https://zenodo.org/communities/escape2020>) integrated with several tools to enable a complete software life-cycle. The OSSR is fully onboarded into the EOSC explorer (https://explore.eosc-portal.eu/search/dataprovider?datasourceId=re3data_:::cl9518b015a3941a3e0675d398ca33f6). The ESCAPE Zenodo community welcomes entries that support the software and service projects in the OSSR such as user-support documentation, tutorials, presentations and training activities. It also encourages the archival of documents and material that disseminate and support the goals of ESCAPE.

How to contribute to the ESCAPE OSSR?

- Entry page
- Repository:
 - Zenodo Community
 - EOSC Portal Explorer
 - OpenAIRE
- Development Platform:
 - <https://gitlab.in2p3.fr/escape2020/wp3>
 - <https://gitlab.com/escape-ossr>

Data Repository

ESCAPE OSSR OSSR The European Science Cluster of Astronomy & Particle Physics Open-source Scientific Software and Service Repository

Open-source Scientific Software and Service Repository

Summary Publications (21) Research software (29) Other research products (1) Related Data sources

ii. Statistics

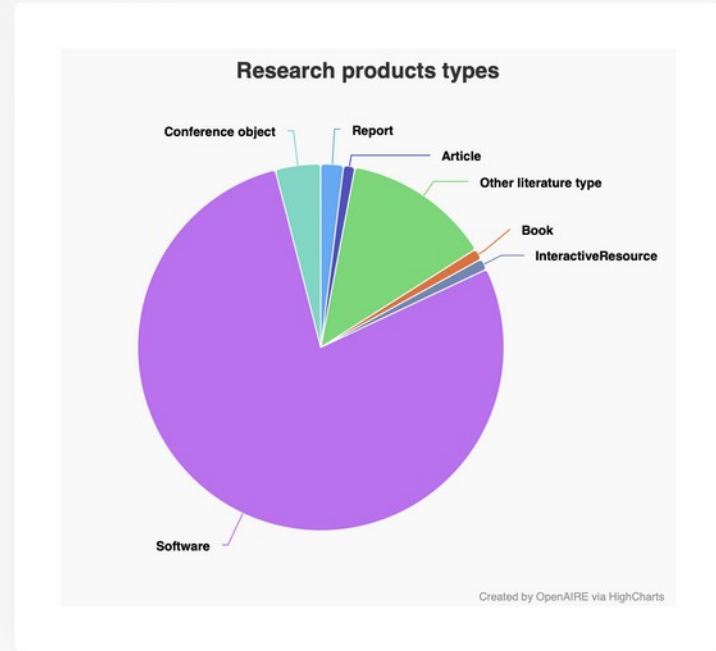
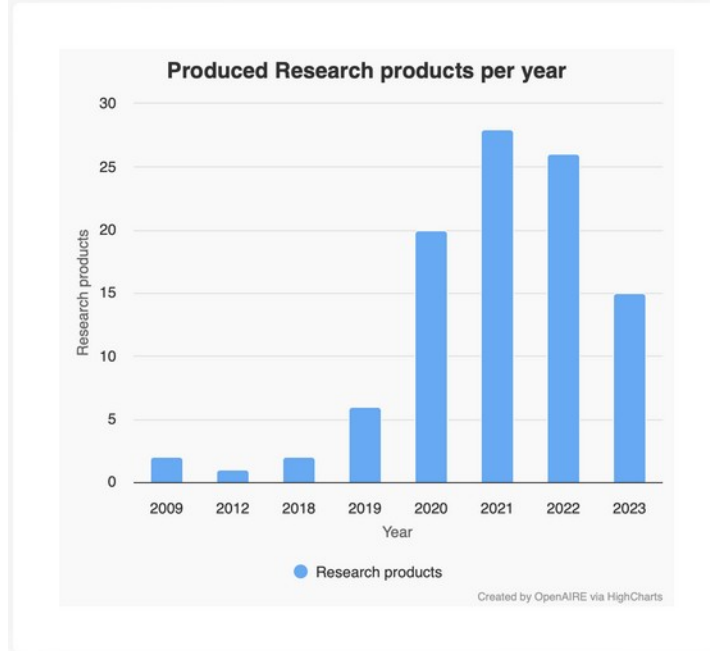


- OSCARS and EVERSE: see presentations tomorrow
- Events: CERN Open Source Programme Office (OSPO) Inauguration <https://indico.cern.ch/event/1327562/>, 28/11
- SciCodes activities continue (e.g. CodeMeta v3 crosswalks)
- OSSR paper
 - Has been submitted and published:
<https://open-research-europe.ec.europa.eu/articles/3-46/v2>



STATISTICS

Statistics from [EOSC Portal](#)



- How to intensify the onboarding and incentivise colleagues to onboard software?
 - Outreach material
 - Reach into the collaborations/RIs
- Are all Onboarding steps still valid and necessary?



Onboarding incentives

Why?

- Visibility → need to increase
- Credibility → need to certify
- Community → need to intensify
- Interconnectivity → do we build towards this?

Who?

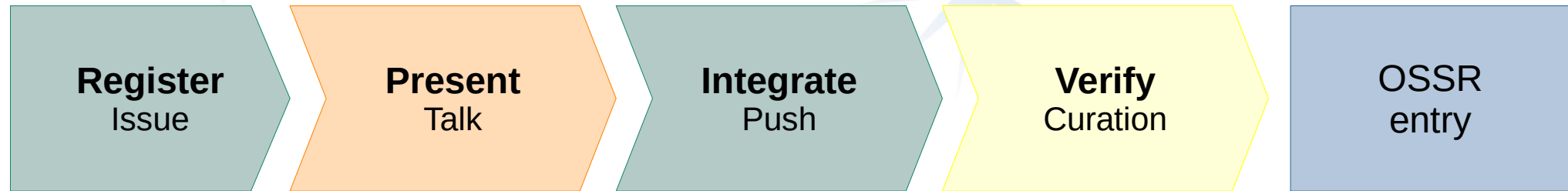
- ESCAPE partners
- Other collaborators
- Wider community

What?

- Provide XXX for YYY



Onboarding procedure



Community

Credibility

Visibility

- Create extended form?
- Forum in collaboration meetings?
- ...?

- Certification?
- Check also presentation of software

- Gallery?
- Interfaces?
- ...?



What to provide

For members

...?

For community

...?

... and how to distribute?



Search or jump to...

<https://research-software-directory.org>

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.



382 Software
packages registered

285 Projects
registered

363 Organisations
contributed

875 Contributors
to research software

2304 Mentions
of research software

- Also an instance at <https://helmholtz.software/software>
- OSSR-related:
FairMQ Example entries:
 - RSD:
<https://helmholtz.software/software/fairmq>
 - CodeMeta:
<https://github.com/FairRootGroup/FairMQ/blob/master/codemeta.json>



What FairMQ can do for you

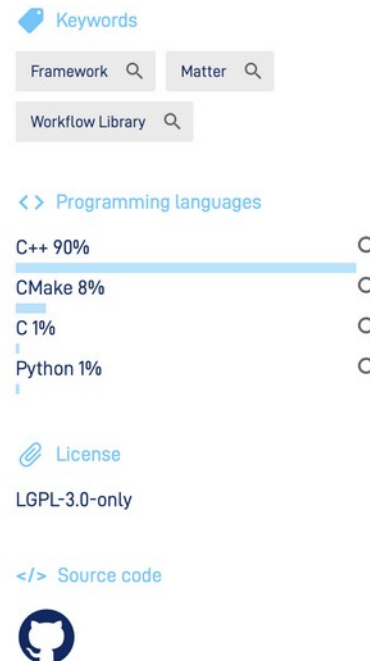
FairMQ in a nutshell

Next-generation Particle Physics Experiments at [GSI/FAIR](#) and [CERN](#) are facing unprecedented data processing challenges. Expected data rates require a non-trivial amount of high performance compute (HPC) resources in the order of thousands of CPU/GPU cores per experiment. Online (synchronous) data processing (compression) is crucial to stay within storage capacity limits. The complexity of tasks that need to be performed during the online data processing is significantly higher than ever before. Classically, complex tasks like calibration and track finding run in an offline (asynchronous) environment. Now they have to run online in a high performance and high throughput environment.

The [FairMQ C++ library](#) is designed to aid the implementation of such large-scale online data processing workflows by

- providing an **asynchronous message passing abstraction** that integrates different existing data transport technologies (no need to re-invent the wheel),
- providing a **reasonably efficient data transport service** (zero-copy, high throughput - [TCP](#), [SHMEM](#) and [RDMA](#) (removed in [v1.5+](#)) implementations available),
- being **data format agnostic** (suitable data formats are usually experiment-specific), and
- providing further **basic building blocks** such as a simple state machine-based execution framework and a plugin mechanism to integrate with external config/control systems.

FairMQ is not an end-user application, but a library and framework used by software experts to implement higher-level experiment-specific applications.



Keywords

Framework Matter

Workflow Library


<> Programming languages

C++ 90%	<input type="text"/>
CMake 8%	<input type="text"/>
C 1%	<input type="text"/>
Python 1%	<input type="text"/>

License

LGPL-3.0-only

</> Source code



- Also an instance at <https://helmholtz.software/software>
- OSSR-related:
FairMQ Example entries:
 - RSD:
<https://helmholtz.software/software/fairmq>
 - CodeMeta:
<https://github.com/FairRootGroup/FairMQ/blob/master/codemeta.json>
- RSD developers supportive (3 meetings)
 - Generation of community
 - Metadata cross-walk
 - Development of API and pull mode



RSD as OSSR Frontend: Decisions

- Use RSD as OSSR Frontend in general?
- Should the usage be opt-in?
- Use in push mode or pull mode?



Slides for Session: **OSSR future, relation with other projects**

- Goals & Mission statement for 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

By software curation & standards

Enable sustainability by encouraging open source software

Foster co-development of software

Sharing best practices



- What are the priorities for the future activities of OSSR (policy/strategy, onboarding or technical developments)?
- Are there additional activities that you want to lead or want to see followed in the OSSR context (e.g. software optimisation)?
- In which projects or activities related to the work of OSSR are you involved and how could those be harmonised? How could OSSR activities profit from those?
- What are the incentives for your members to join OSSR and onboard software, how could those be strengthened?



OSSR Additional Topics

Innovative
Approaches

Best practices

Software quality

Training

Software
Efficiency

Organisation

