



CO-CHAIR OF THE TASK FORCE ON :

"RESEARCH INFRASTRUCTURES FOR QUALITY SOFTWARE"

EOSC Association | www.eosc.eu



Task force

Authentication and Authorization Infrastructure Architecture (AAI)

Co-Chaired by: Christos Kanellopoulos (GEANT) and Jana Broncova (Masaryk U.)

Web page:

https://www.eosc.eu/advisory-groups/aai-architecture

Short url : https://bit.ly/3sNdBif





Background and Objectives (see the charter online)

Develop the next version of the EOSC-AAI Architecture

****Evolution of the AARC architecture**

New version of the EOSC AAI Architecture

New Use cases and Requirements Governance models for the EOSC AAI

What is the EOSC-AAI work ultimate goal ?

- The core of Scientific work are Research Infrastructures (RIs)
- They can be Laboratories, Universities, Facilities (with some big experiment perhaps)
- There are tens to hundreds of different services provided by an RI
 - Storage, Compute, Group Ware,...
- Sometimes there are a couple of different sciences supported per RI
 - Like DESY : HEP , Photon, Biology
 - Or national institutions like CSIC: HEP, Biology, Material Science, etc etc...

They are called Science Communities

- If those sciences extend the RI, they are called e-infrastructures
 - Like the World-wide (Large Hadron Collider) Computing Grid, WLCG
 - > Laboratories Sites around the world
 - The European Southern Observatory, ESO: 16 Member States
- And many scientists are member of different e-Infrastructures.

The goal is that all Scientist can use their home identity to authenticate to get access to all the European resources



A daily life example

Researcher from institution A wants to share data with researcher from Institution B

For that both need to access the same storage facility operated by eg. Institution B





How does this work in practice ?

(1) Patrick sends e-mail to Isabel CSIC official account

 You are invited to join a group in the Helmholtz AAI
 External
 Inbox x

 Inbox *
 helmholtz-aai@fz-juelich.de
 to isabel.campos *

 Do not reply to this message!
 Dear User,

 You are invited to join a group in the Helmholtz AAI. Joining this group can enable you to use specific resources following link, you will be able to join the group via Join HIP. The invitation expires at Tue, 23 Mar 2021 11:09:00

 The link for you registration is: https://login.helmholtz.de/unitygw/pub?regcode=b5857f3e-54f1-4301-bba7-5104

 If you don't want to register please ignore this message.

Best regards, Your Helmholtz AAI Team (2) After checking that this was really Patrick (and not any spamer), Isabel clicks on the invitation link





(3) ... searches for CSIC in the list of authorized institutions to login, and clicks there:



(4) a familiar interface pops-up... and logs in with her institutional credentials

17443723V		
	He olvid	lado mi contraser
	LOGIN	



How does this work in practice ?

(5) ... ends up here and clicks on "Yes" (on the suspicion that clicking "No" will led her nowhere) **(6)** ... transfers Terabytes data (<u>all FAIR of course</u>) in the cloud storage resources of DESY



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What is the AAI Task Force up to?

Enhance the AARC architecture to provide a truly large scale and international collaborative experience

• Enable the harmonisation of national AAIs so that they can seamlessly work together. EOSC TF AAI drives this to the next level, allowing this across different initiatives in Europe

 \rightarrow New development: these are not only European initiatives, but include National ones

• Current example in Germany: **HIFIS (Helmholtz Cloud Infrastructure)** implements the AARC architecture. **NFDI**, in which HIFIS is one of four players, will be able to have an integrated AAI following the guiding principles (and the details) of **EOSC-AAI**

"AARC Entity Category"

Enable the distribution of Attributes of Researchers at large scale => Up to now this was possible only within well defined infrastructures (EGI, WLCG, ...).

"Remote Token Introspection"

Enable different infrastructures (think EGI + EUDAT) to use tokens crosswise. => Allowing EUDAT users to read data from EGI

In EOSC-Synergy already, we were able to have users from multiple "providers" (proxies)

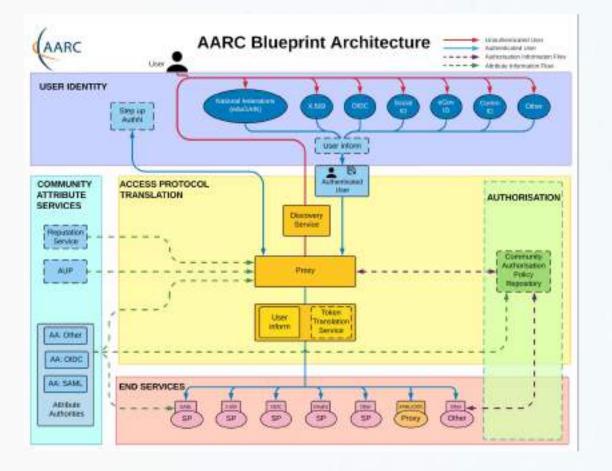
LAGO is not managed at EGI, but at eduTEAMS: works because of the compatibility





I will not utter here an explanation of the AARC Architecture

https://aarc-project.eu/architecture



Questions on the details of the architecture? <u>profit from</u> <u>the physical presence here of true experts on AAI</u>:

Marcus Hardt (KIT) is around: he will tell you everything you need to know on AAI (and more!)





Task force

Infrastructures for quality research software

Co-Chaired by: Isabel Campos (CSIC) and Roberto di Cosmo (INRIA)

Web page:

https://www.eosc.eu/advisory-groups/infrastructures-quality-research-software

Short url : <u>https://bit.ly/3y9RtlE</u>





Background and Objectives (see the charter online)

Background:

- Research software: Software produced by researchers and used as an enabler for scientific activities
- Quality: Criteria to be defined in this TF

Objectives:

- Foster the development and deployment of tools and services that allow researchers to properly archive, reference, describe with proper metadata, share and reuse research software.
- Improve the quality of research software, both from the technical and organizational point of view for research software in general and in particular the software used in the services offered through EOSC.
- Increase recognition to software developers and maintainers of research software as a valuable research result, on a par with publications and data, in the Open Science landscape.

EUROPEAN OPEN Task Force Sub-group on "Software Lifecycle"

Software Lifecycle

Kay Graf (FAU/ECAP) Raphael Ritz (MCPDF)

D1 - Software Research Lifecycle (to be completed soon)

Deliverable 1 of the SG1 - "On the Software Lifecycle" - Task Force on Infrastructure for quality research software

Contributors: Raphael Ritz, Jason Maassen, Bernd Flemisch, Kay Graf, Uwe Kontrad, Guy Courtebalisse (please add)

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Open Points: ToDo List

Executive Summary

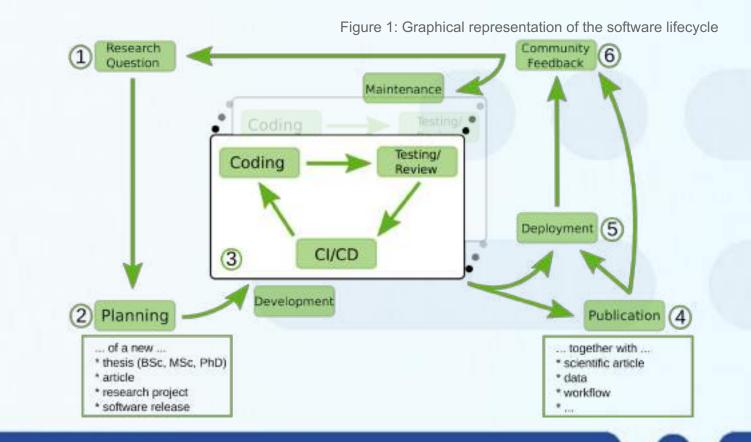
introduction

User stories

Approaches in Software Development - Products, Projects or Platforms

Softwara Lifecyple

Equin 1: Graphical representation of the software illecycle 1 initialization 2 Planning 3 Implementation 4 Publication/Desteament 5 Platform Integration 6 Community Feedback and Reuse Blatt.Over From the Ullecycle to an EOSC Infrastructure **Analyze** approaches, tools and platforms across all phases of research software developments, **identify gaps** as well as the **best practices**. Formulate **actionable recommendations** for researchers, organizations and decision bodies.



EUROPEAN OPEN Task Force Sub-group on "Information Science"

Information Science

José B. Gonzalez Lopez (CERN) Moritz Schubotz (FIZ Karlsruhe) Raise awareness of the **EOSC SIRS** report on Scholarly Infrastructures for Research Software and **foster adoption** of its recommendations **in existing and future infrastructures**.

> The cash sheed Down of Placements

A GAP analysis on the existing popular repositories is being made

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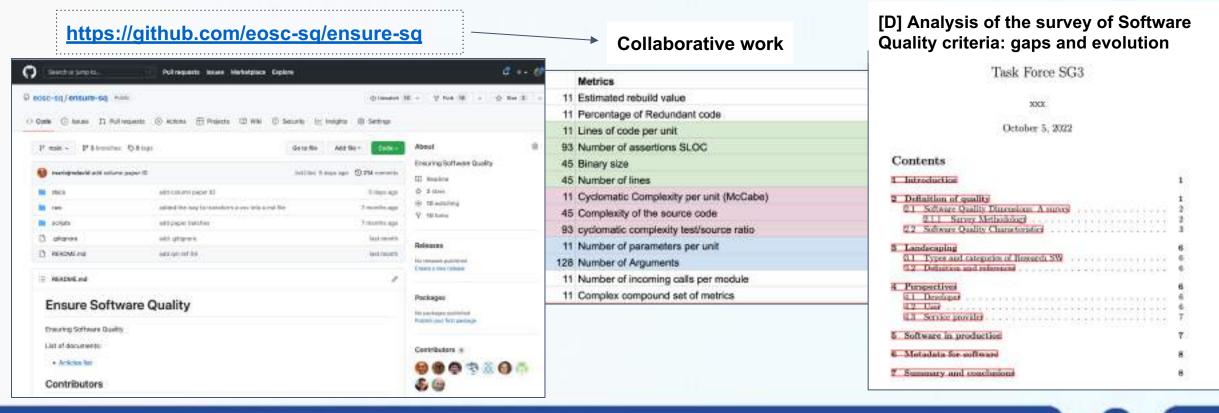
A document compiling the current status versus the SIRS report is being compiled and will be made public (Q4 2022)

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Software Quality

Miguel Colom (ENS, Paris- Saclay) Mario David (LIP, Lisbon) Identify relevant **criteria** to assess the **quality** of research software, based on existing **best practices**, and **tools and mechanisms to measure** them.





Experts on of Software Quality Infrastructures vhere in Faro you can speak to

Mario David (LIP)



Pablo Orviz (CSIC)



Laura del Caño (CNB-CSIC)



Task force

Technical Interoperability of Data and Services

Co-Chaired by: Eva Sciacca (INAF) and Alvaro López (CSIC)

Web page:

https://www.eosc.eu/advisory-groups/technical-interoperability-data-and-services

Short url : <u>https://bit.ly/3a7vPEW</u>





Background and Objectives (see the charter online)

Background:

- Starting from the EOSC Interoperability Framework (EIF) recommendations the TF aims at supporting the development of the EOSC Core and Exchange.
- Activities include engaging with the community to coordinate the federation of thematic services, infrastructure services, generic services and datasets and activities to advance the composability of resources.

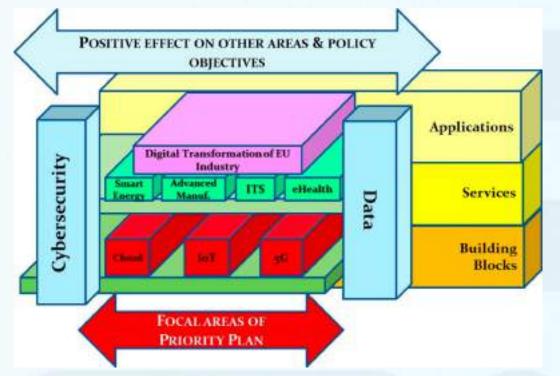
Objectives:

- A first principles discussion on the guiding principles for interoperability.
- A landscape overview and analysis of the existing systems and interoperability standards for data and services.
- Promote alignment between EOSC standards and other major activities (such as RDA, EuroHPC and GAIA-X).
- A technical architecture discussion for the EIF.

Challenge of creating an interoperable EOSC

- Interoperability: "The ability of computer systems or software to exchange and make use of information"
- The keyword here is: Standards :
 - Standards to exchange information between IT systems.

Example: W3C is an organization to promote open standards on the Web: HTML , CSS , etc...



The EC proposes to focus standard-setting resources and communities on 5 priority areas: **5G, Internet of Things, Cloud Computing, Cybersecurity and Data Technologies**

SCIENCE CLOUD Ongoing V	vork
Landscape, Overview and Scouting	Landscaping phase started Planned 2022 Q2 : Deliverable "A landscape overview (capabilities and gaps) of the EOSC IF"
Data technical interoperability	 Landscaping phase started Data formats study Gap Analysis
Services technical interoperability	 Landscaping phase started Requirements and Use-Cases Identification Gap Analysis



Working groups objectives

Landscape, Overview and Scouting Chair : Eva Sciacca INAF

Data technical interoperability Chairs: Philip Wieder GWDG Joan Maso CREAF

Services technical interoperability Chair: Damian A. Tamburri TU/e

Technical Architecture recommendations (Not yet started) Landscape overview and analysis of the existing systems and interoperability standards that are in place or being developed as part of EOSC Projects, national activities and computing / data centres related to the community and other initiatives including industry.

Inventory of data and metadata formats, interfaces and access protocols, to identify and specify a minimal set of functionalities.

Inventory of application programming interfaces, access protocols, best practices and standards, to identify and specify a minimal set of functionalities.

Guiding principles for interoperability. Identify the main technical areas and gaps that require a further development of interoperability guidelines.



Landscaping should be done before all the paths are built and the flowers planted



How many flowers will survive the EOSC landscaping?







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