Welcome to the Architecture and Interoperability Session

In this session:

• We would like to present the architecture of the EOSC Platform
• And the interoperability patterns that we have identified
• We will show you some examples of EOSC IF guidelines:
  o For the EOSC Core services
  o Developed by the communities (AARRC guidelines)
  o But also work that is ongoing in other projects
Interoperability patterns
EOSC IF

- Set of **guidelines** that:
  - Facilitate interoperation with EOSC-Core
  - Promote standards and community best practices within the EOSC
- **Governance** to manage EOSC promoted guidelines
- A **registry** to list the guidelines and help tag resources that support them

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| EOSC Interoperability Advisory Board (EIAB) | ● overseeing the EOSC IF;  
  ● endorsing guidelines, based on the recommendations of the EIAC. | EOSC Future Technical Coordination Board    |
| EOSC Interoperability Area Chairs (EIAC)  | ● performing the initial assessment of the proposed guidelines  
  ● making recommendations for inclusion to the EIAB. | EOSC Future WP3 task leads supported by editorial board (calling in community experts to help with the review process as needed). |
EOSC High Level Architecture
Modeling EOSC Architecture

• Use of C4 model designing principles
  o Hierarchical model
  o Better readable diagrams

• Use of IcePanel as architecture modeling tool
  o Complete model in 1 tool
  o Supports C4 model principles
  o Supports data flows
EOSC Stakeholder diagram
EOSC Platform - Logical View
EOSC Platform – Standards/API View
User Access Flow

Scenario: Researcher access a community exchange service

Step 1: Researcher -> Community Exchange Service: Researcher access a Community Service made available through the Exchange and wants to log in

Step 2: Community Exchange Service -> Community Infrastructure Proxy: Community Service redirects the authentication request to the Community Infrastructure Proxy

Step 3: Community Infrastructure Proxy: The Researcher selects his/her own Identity Provider

Step 4: Community Infrastructure Proxy -> Another Community AAI: The Researcher is redirected from the Community Infrastructure Proxy to his/her own Community AAI to authenticate his/herself

Step 5: Another Community AAI: The Researcher authenticates his/herself at his/her own AAI service

Step 6: Another Community AAI -> Community Infrastructure Proxy: The AAI service of the Researcher sends the authentication response to the Community Infrastructure Proxy of the Service (Community Exchange Service)

Step 7: Community Infrastructure Proxy -> Community Exchange Service: The Community Infrastructure Proxy sends the authentication response to the requesting Service (Community Exchange Service)

Step 8: Community Exchange Service -> Researcher: Depending on the authentication response the Researcher is authenticated and receives authenticated access to the Service (Community Exchange Service)
Data Transfer Service

Scenario: EOSC Data Transfer Flow from Research Product Catalogue


Step 2: Catalogue and Marketplace: The Researcher selects the dataset to transfer, the source data repository to a computing facility to process.

Step 3: Catalogue and Marketplace -> EOSC Data Transfer Service: The Researcher is redirected to the EOSC Data Transfer Service.

Step 4: Researcher -> EOSC Data Transfer Service: Researcher provides destination information.

Step 5: EOSC Data Transfer Service: Data Transfer Services selects on basis of EOSC IF Data Transfer guidelines appropriate Data Transfer service in the EOSC Exchange.

Step 6: EOSC Data Transfer Service -> FTS: The EOSC Data Transfer service initiates data transfer at source location of the dataset.

Step 7: FTS -> Community Exchange Data Source: The Data Transfer Service initiates the data transfer from source to destination location.

Step 8: Community Exchange Data Source -> e-infrastructure Horizontal Service: Data is transferred from source location to destination location.

Step 9: FTS -> EOSC Data Transfer Service: Notify the EOSC Data Transfer Service when data transfer is finished.

Step 10: EOSC Data Transfer Service -> Researcher: Notify Researcher that Data Transfer Service is finished.

Step 11: Researcher -> e-infrastructure Horizontal Service: The Researcher can access the dataset on the destination location.
Next steps

• Continue the develop of the EOSC Architecture to component level
• Harmonise architecture diagrams
• Develop more data flows for different scenarios for all capabilities of the EOSC Platform
• Develop an EOSC Architecture document as a reference document