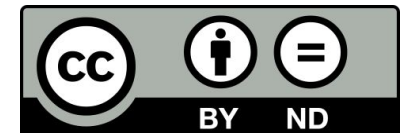


EOOSC Future

Evolution of the EOOSC Architecture and Interoperability

The EOOSC Future project is co-funded by the
European Union Horizon Programme call
INFRAEOOSC-03-2020, Grant Agreement 101017536



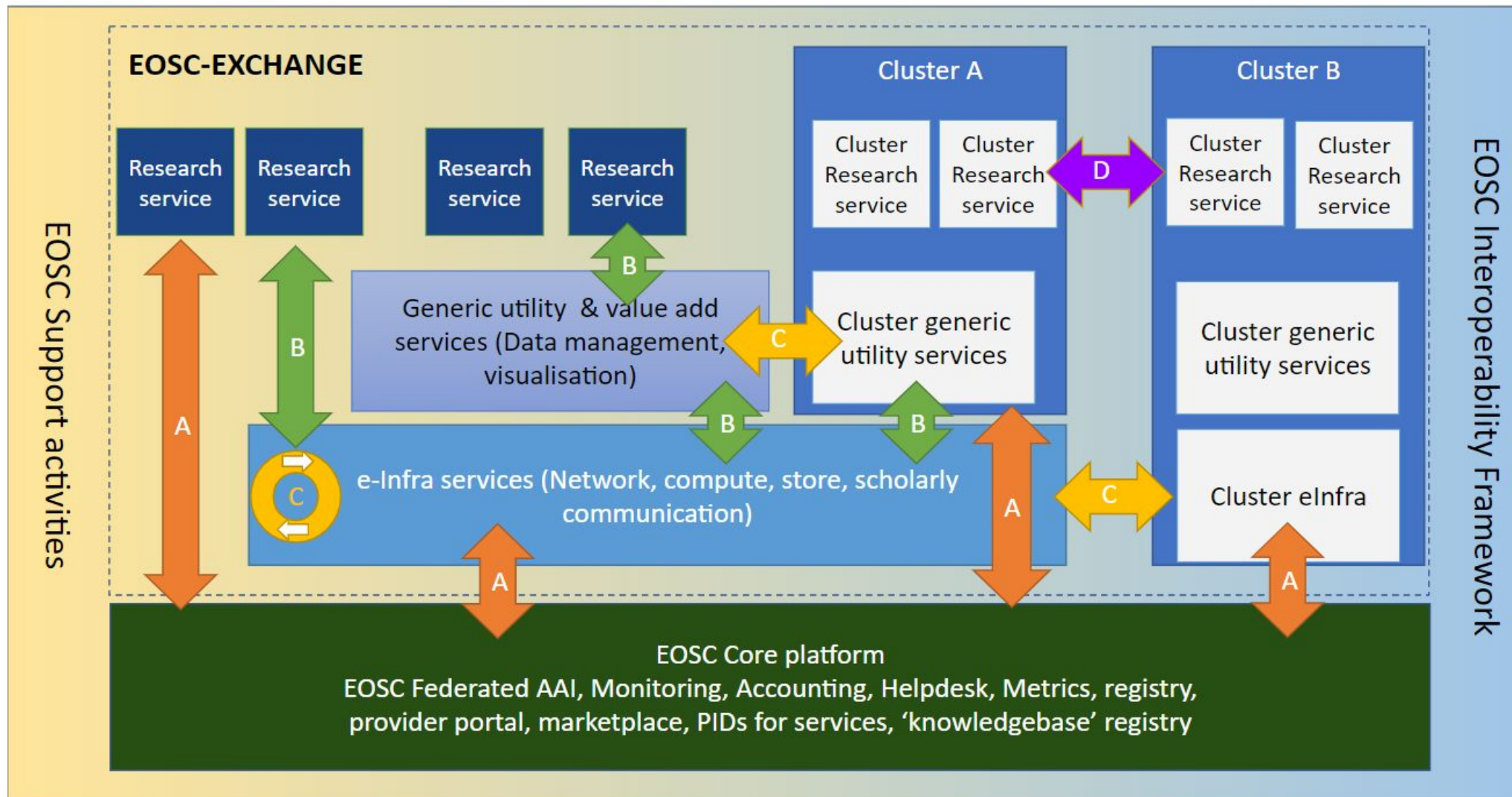


Welcome to the Architecture and Interoperability Session

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:
 - For the EOSC Core services
 - Developed by the communities (AARRC guidelines)
 - But also work that is ongoing in other projects

Interoperability patterns

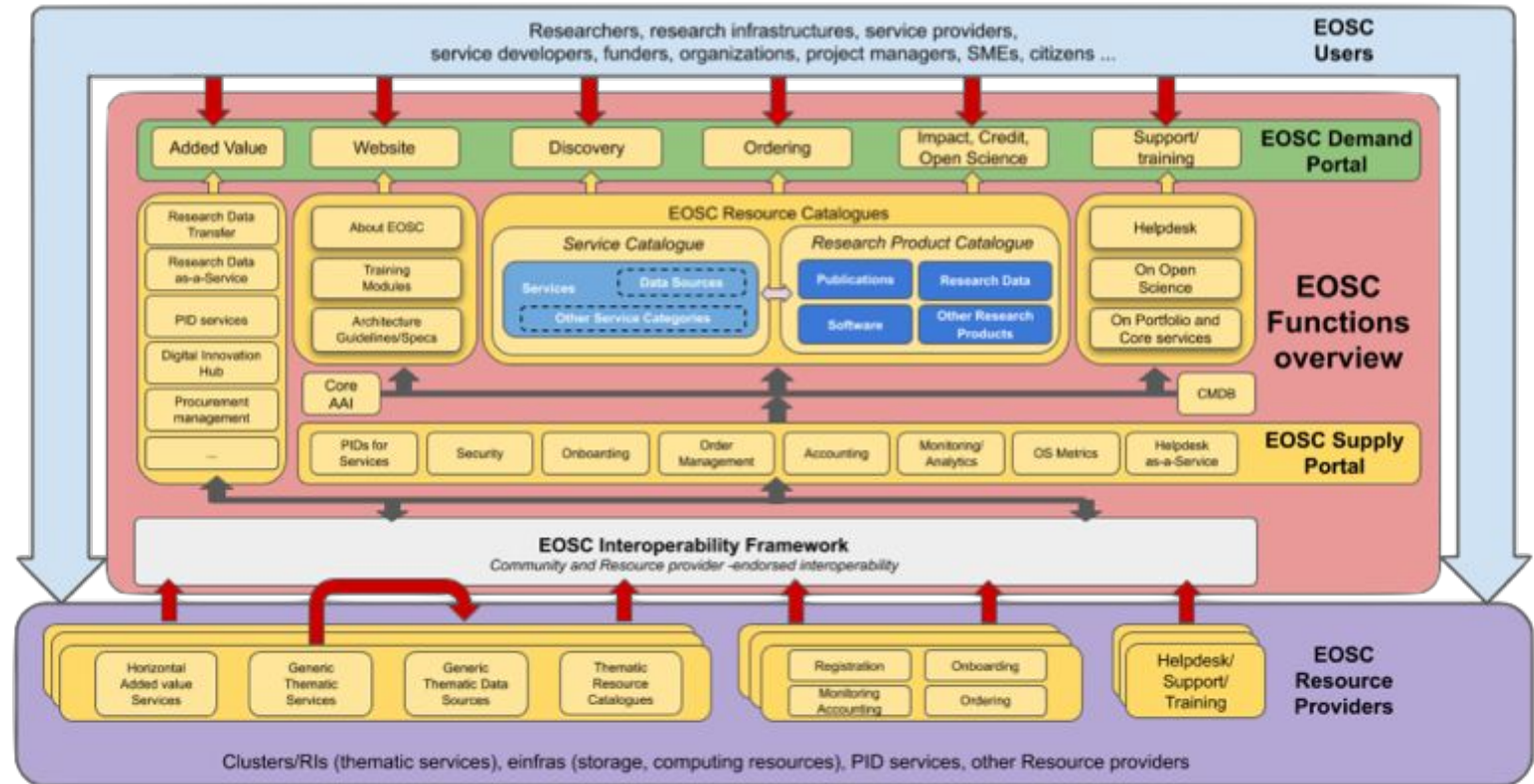
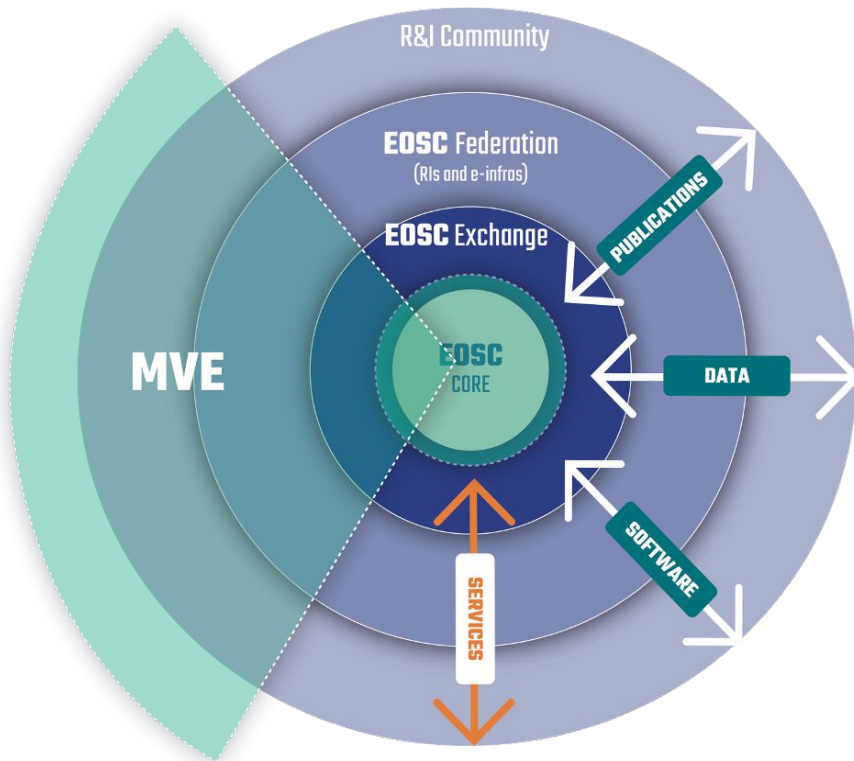


EOSC IF

- 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

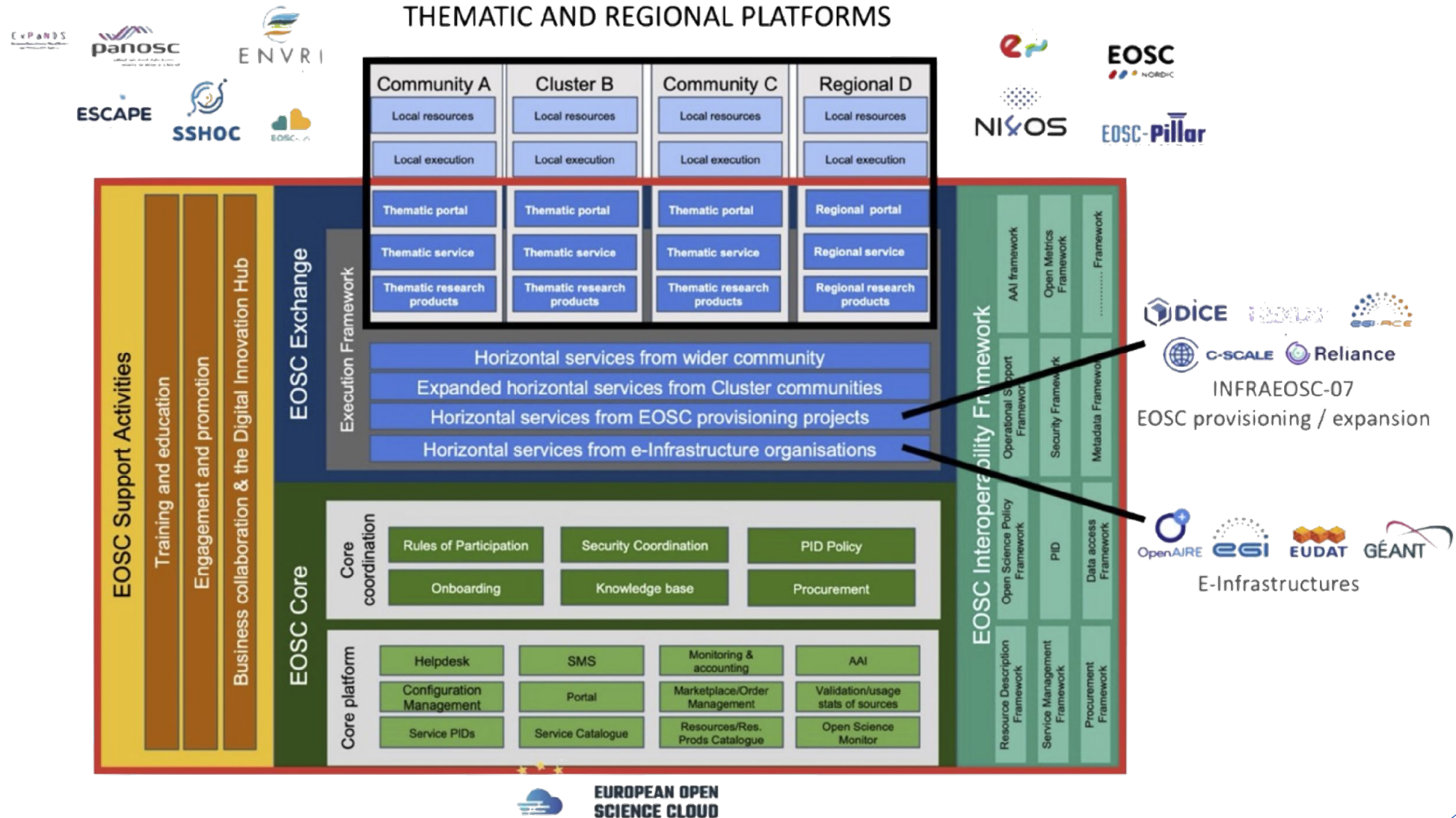
Body	Responsibility	People
EOSC Interoperability Advisory Board (EIAB)	<ul style="list-style-type: none">● overseeing the EOSC IF;● endorsing guidelines, based on the recommendations of the EIAC.	EOSC Future Technical Coordination Board
EOSC Interoperability Area Chairs (EIAC)	<ul style="list-style-type: none">● 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 Architecture WG



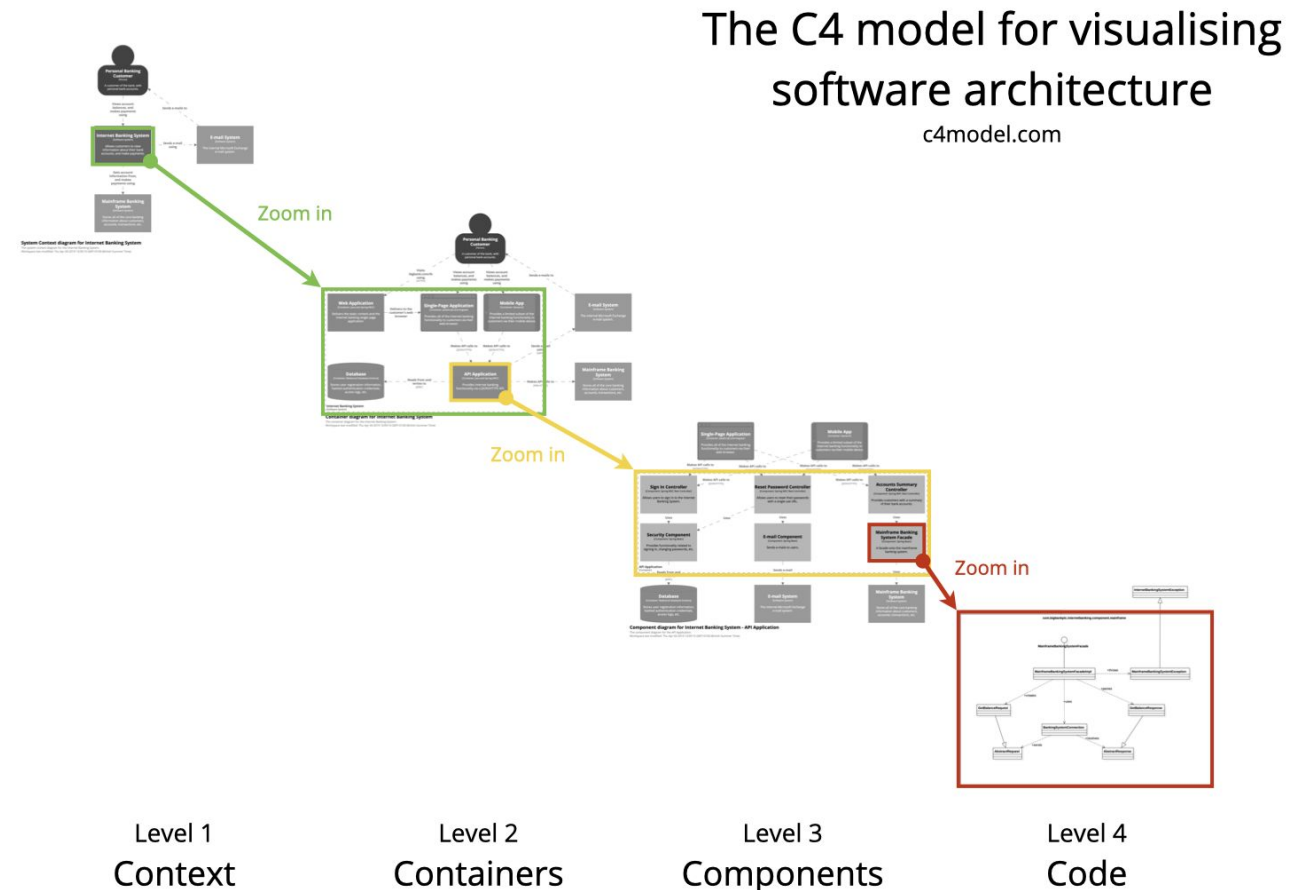
European Commission, Directorate-General for Research and Innovation, Sanden, M., Robertson, D., Appleton, O., et al., *EOSC architecture working group view on the minimum viable EOSC: Report from the EOSC Executive Board Working Group (WG) Architecture*, Publications Office, 2021, <https://data.europa.eu/doi/10.2777/492370>

EOSC High Level Architecture

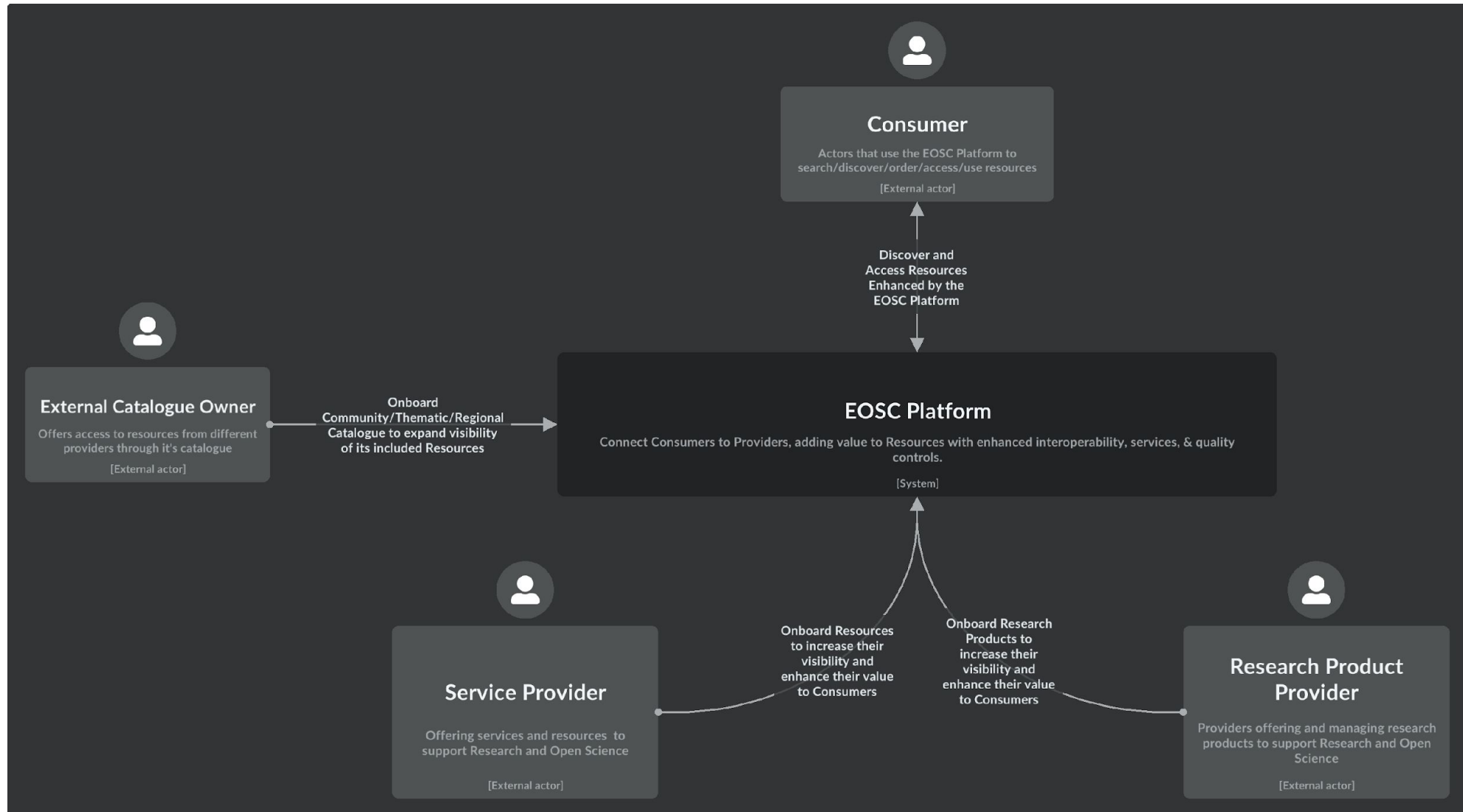


Modeling EOSC Architecture

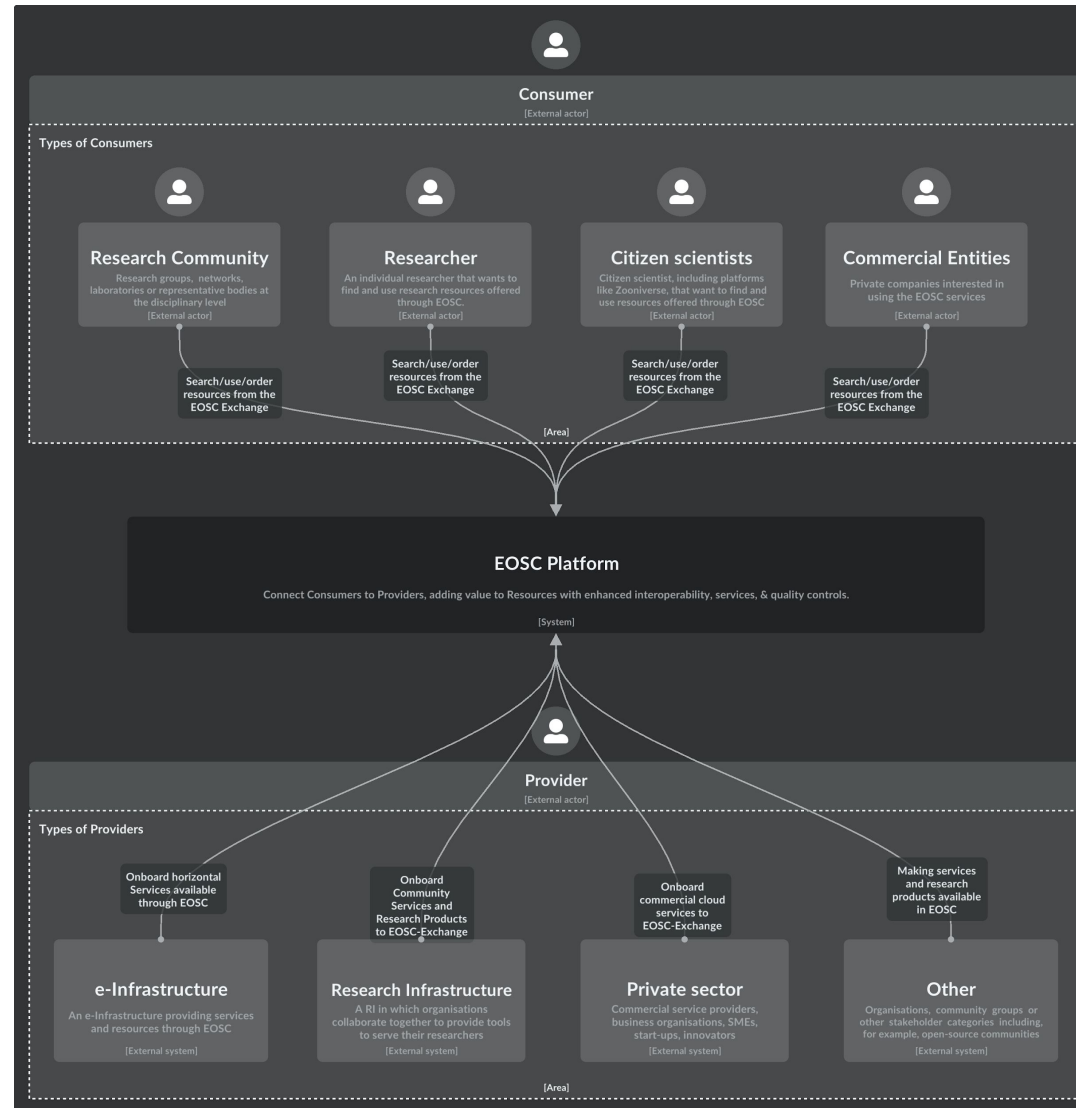
- Use of C₄ model designing principles
 - Hierarchical model
 - Better readable diagrams
- Use of IcePanel as architecture modeling tool
 - Complete model in 1 tool
 - Supports C₄ model principles
 - Supports data flows



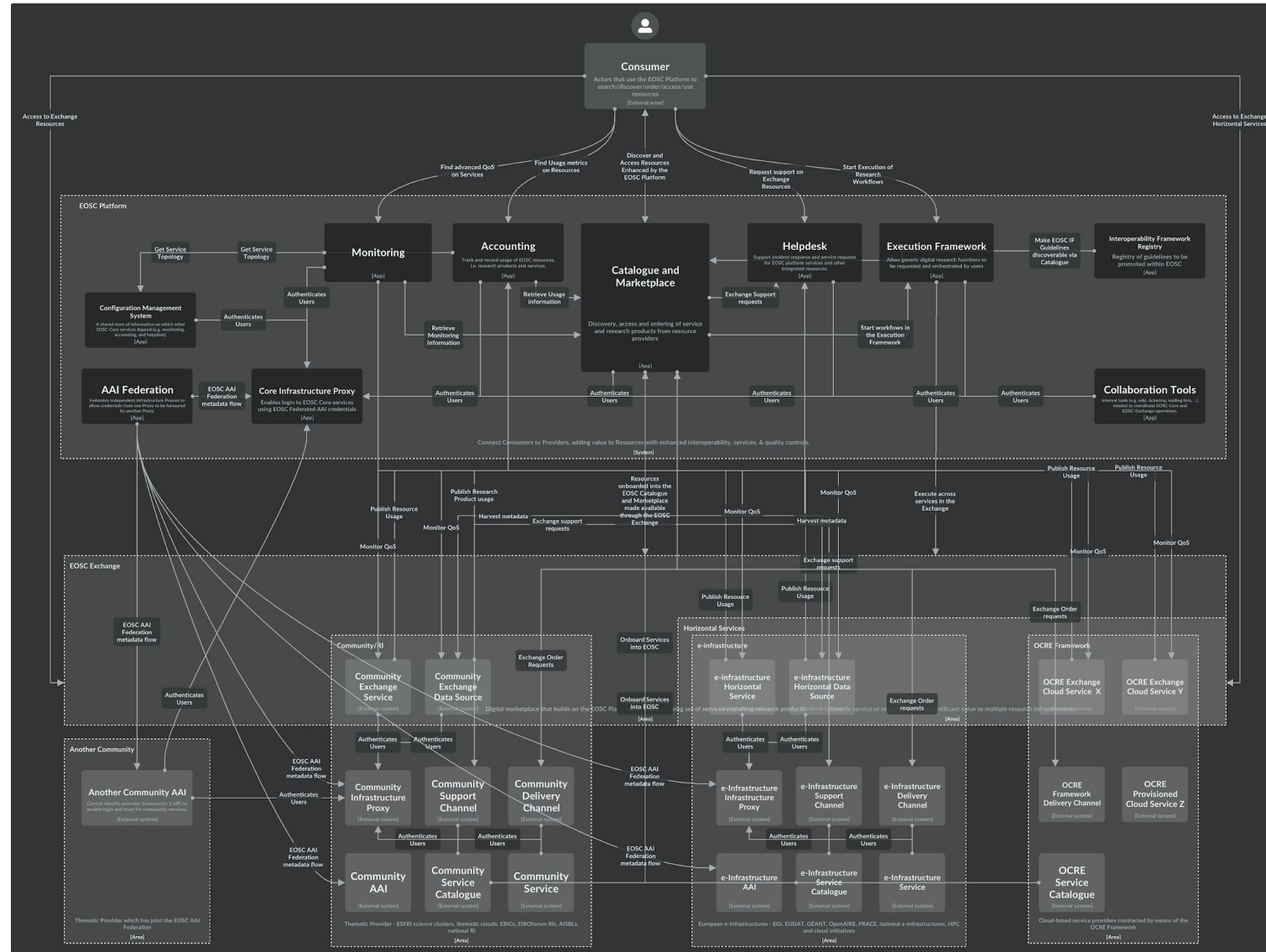
EOSC High-level Overview



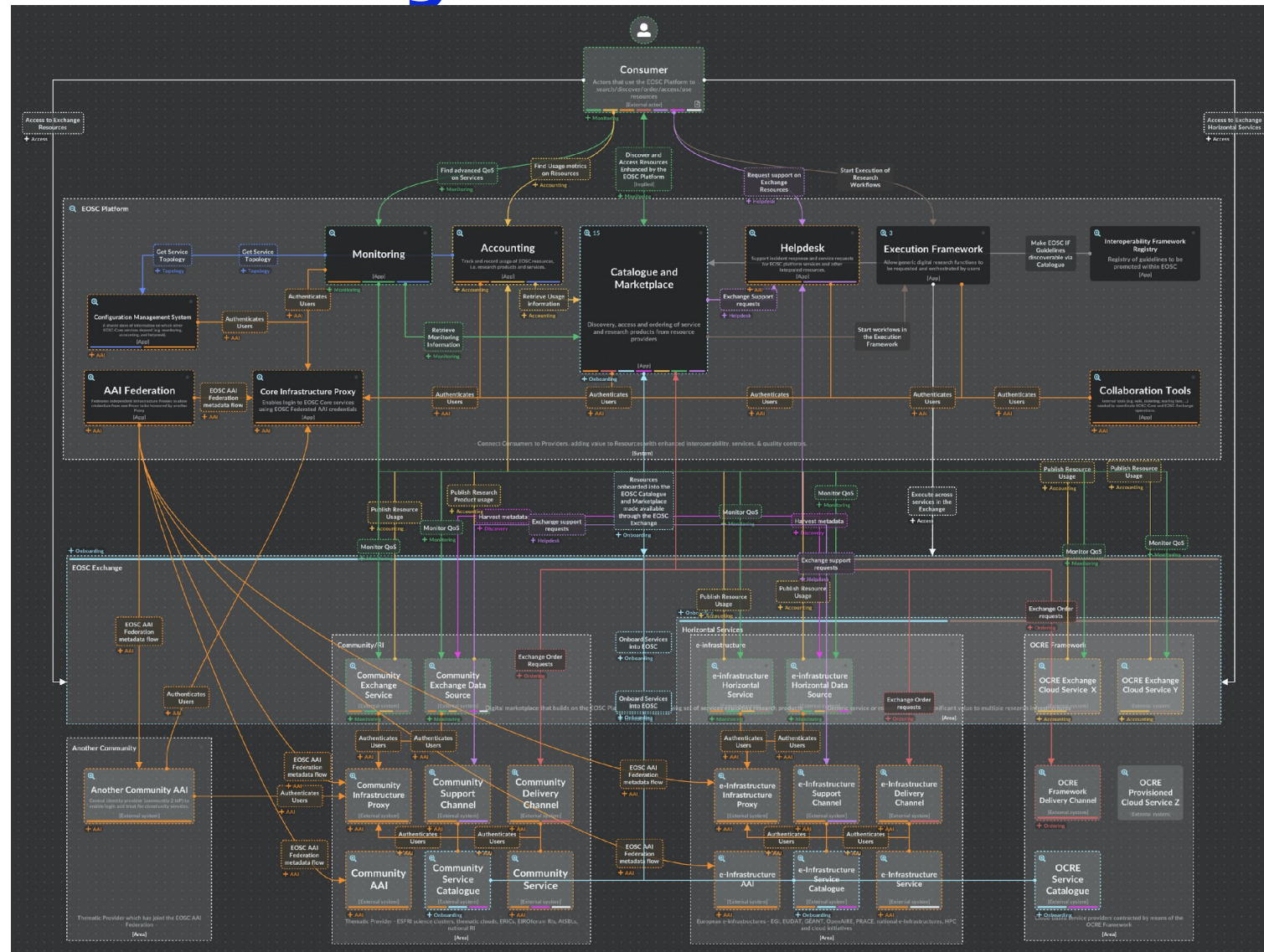
EOSC Stakeholder diagram



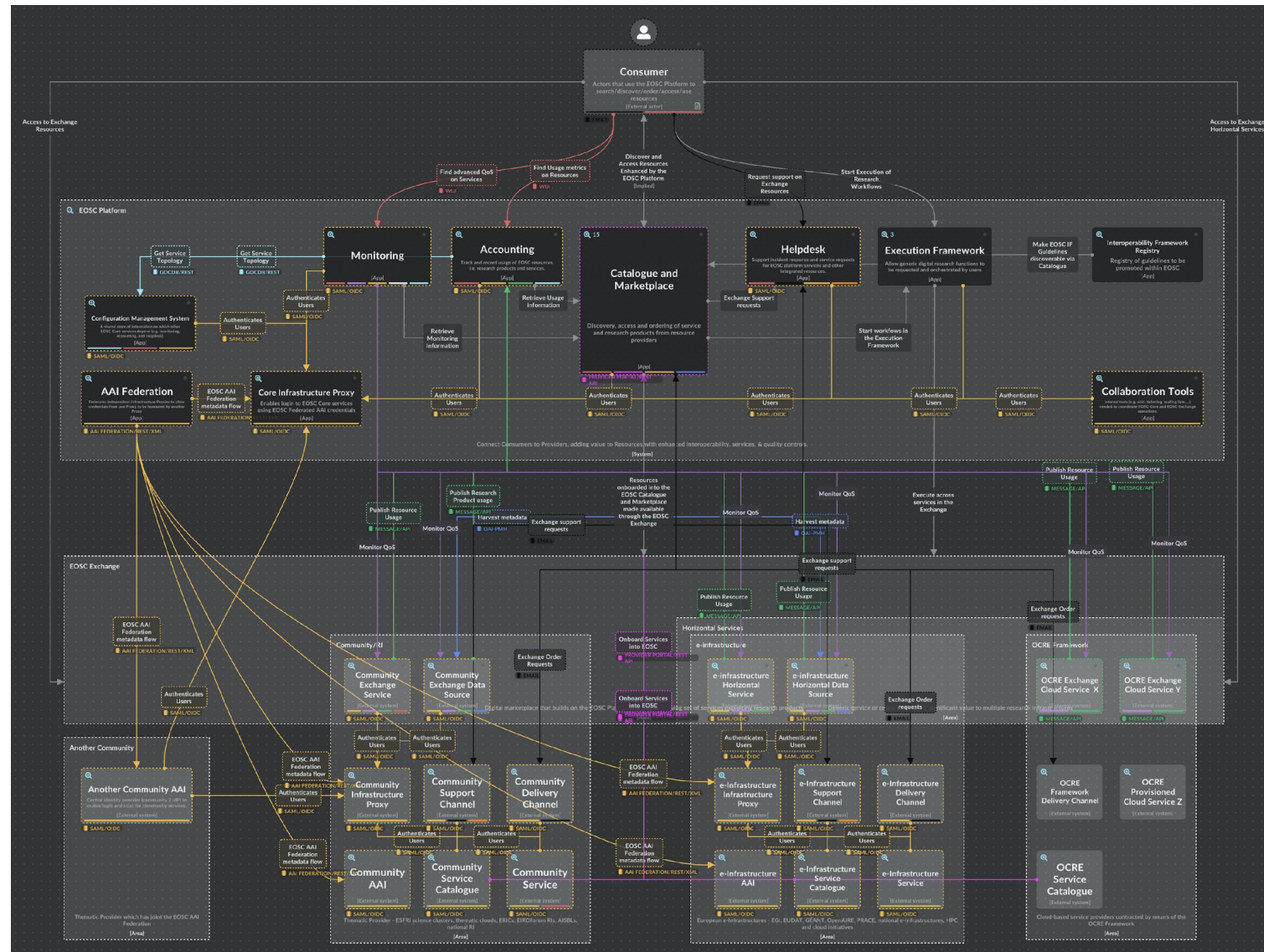
EOSC Platform



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

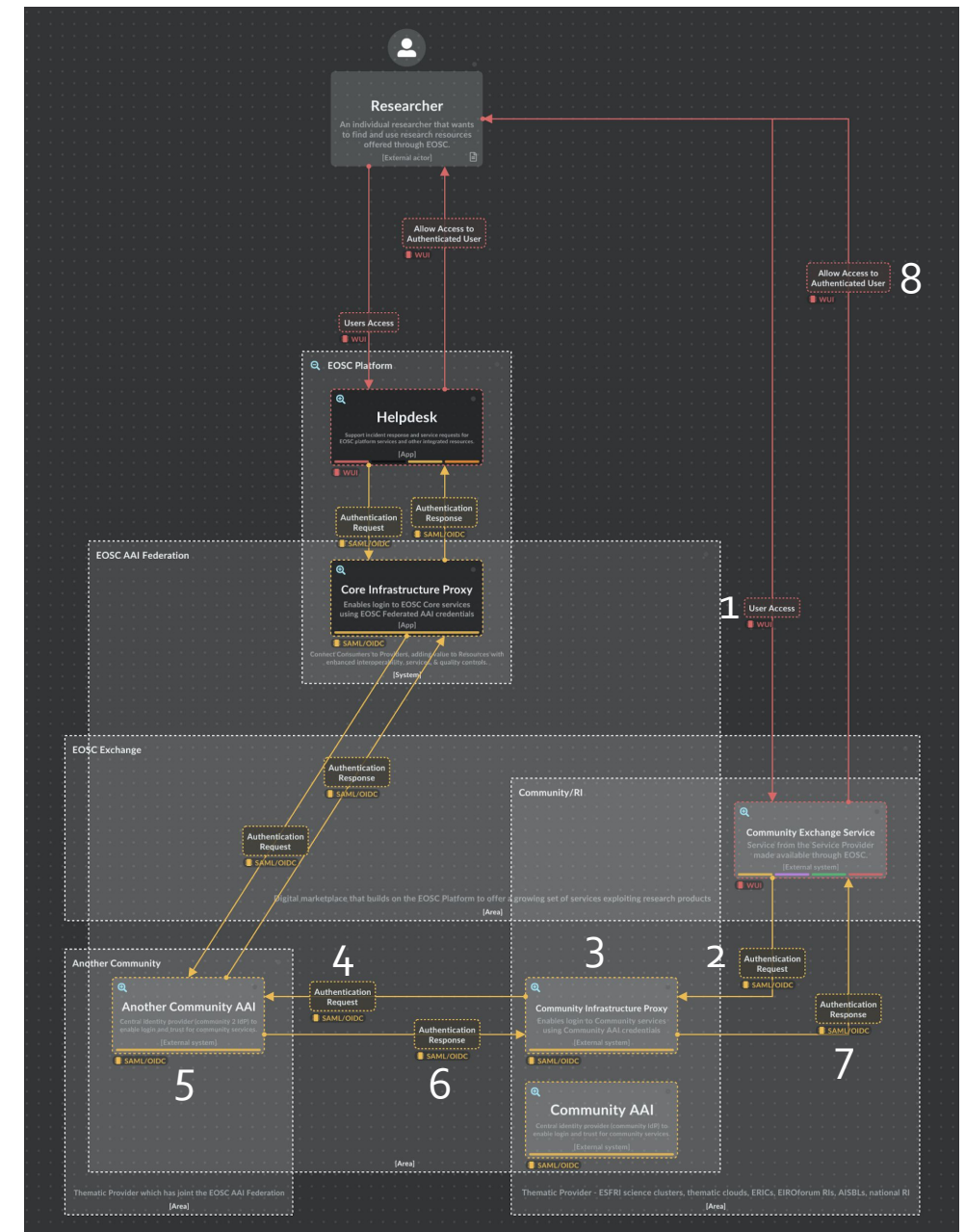
Step 4: **Community Infrastructure Proxy -> Another Community AAI:** The Researcher is redirected from the Community Infrastructure Proxy to his/her own Community AAI to authenticate his/herself

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 1: **Researcher -> Catalogue and Marketplace:** The Researcher finds a interesting data set in the 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

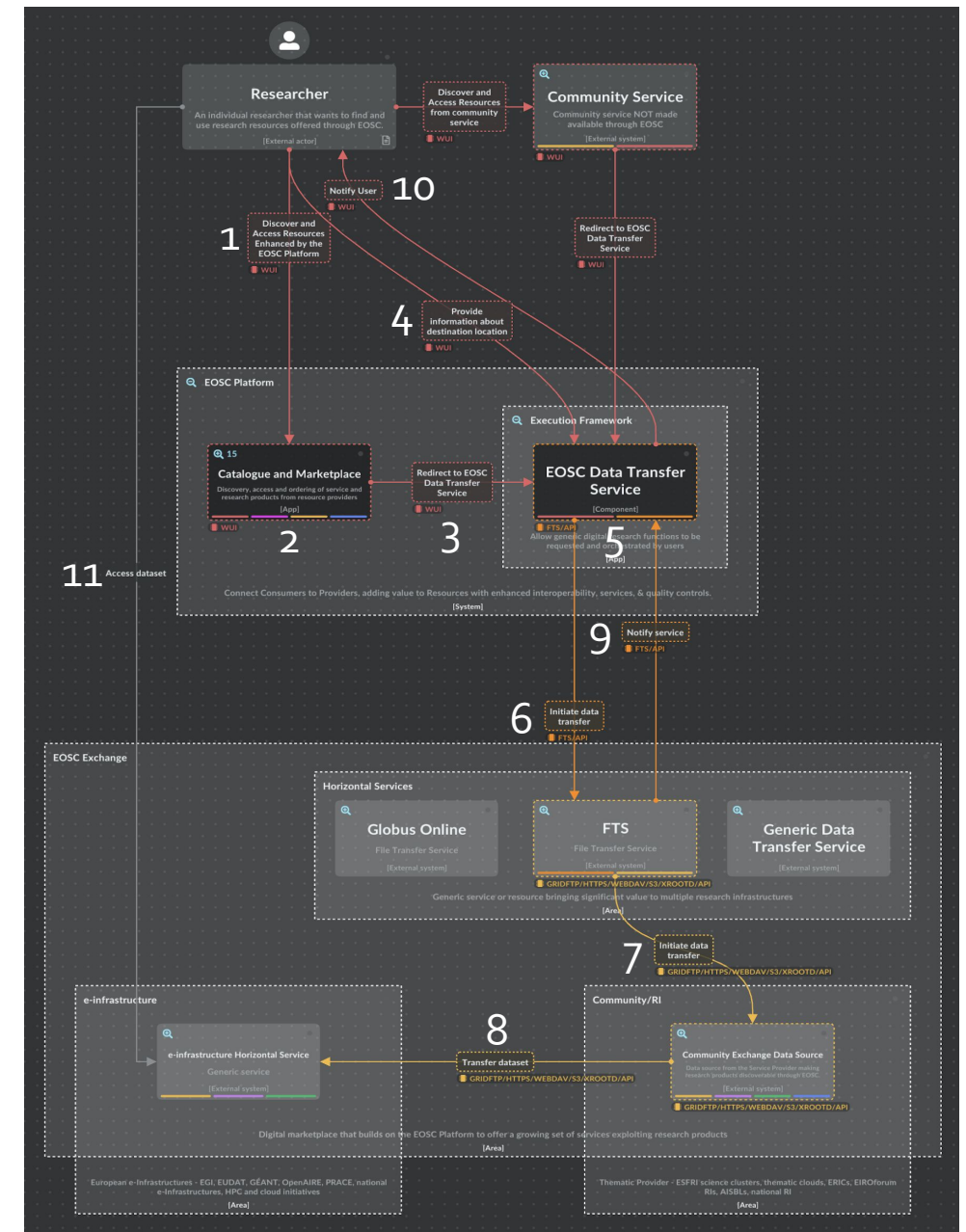
Step 7: **FTS -> Community Exchange Data Source:** The Data Transfer Service initiates the data transfer from source to destination location

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

