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EOSC-Future WP3 Webinar: The EOSC Interoperability Framework

EOSC Future, Work Package 3 participants

EOSC Interoperability Framework Consultation Webinar, 25 March 2022

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

Agenda

14:00-14:05 **Intro & welcome**
Licia Florio (GEANT and EOSC Future WP3 Architecture and Interoperability Lead)

14:05-14:20 **EOSC IF and EOSC Architecture**
Mark van de Sanden (SURF)

14:20-14:50 **Illustrative use cases: examples of enabling interoperability**
Diego Scardaci (EGI) and Paolo Manghi (OpenAIRE)

14:50-15:00 **Governing the EIF**
Michelle Williams (GEANT)

15:00-15:05 **How to provide feedback**
Sarah Jones (GEANT and EOSC Future WP10)

15:05-15:30 **Q&A**

Join us on Slido

During this webinar we will be collecting questions and feedback via Slido. Join us there via a mobile device to post your own comments or upvote those of others.

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Welcome

Licia Florio
GEANT Association

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Aim of this webinar

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- Why do we need an EOSC Interoperability Framework ?
- What is the EOSC Interoperability Framework?
- What is this consultation about?
- What type of feedback is expected for the consultation?

A bit of history

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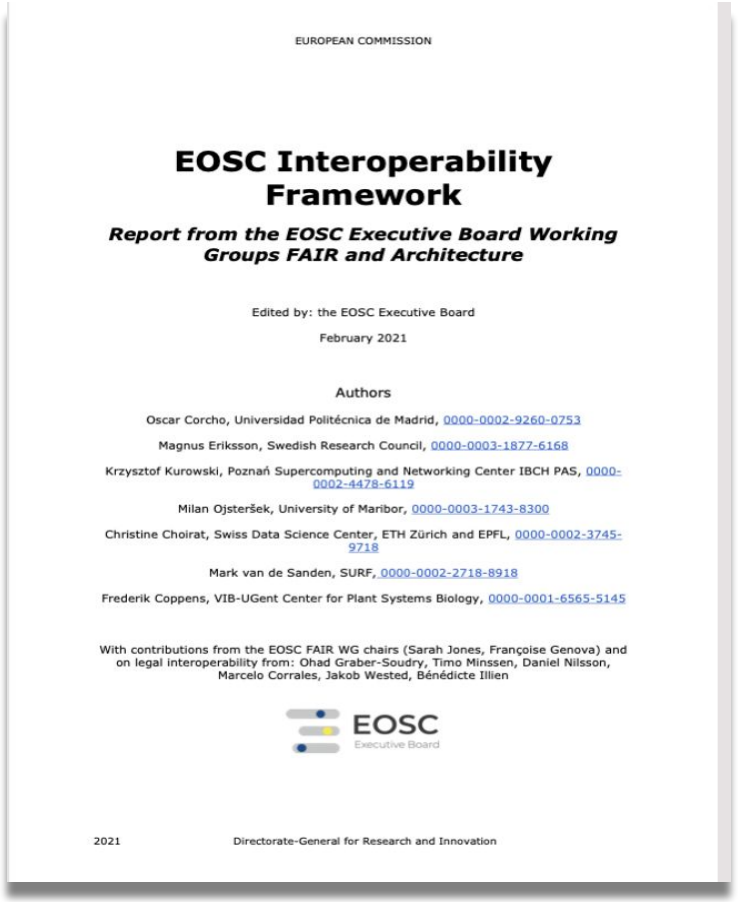

EUROPEAN COMMISSION

EOSC Interoperability Framework

Report from the EOSC Executive Board Working Groups FAIR and Architecture

Edited by: the EOSC Executive Board

February 2021

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With contributions from the EOSC FAIR WG chairs (Sarah Jones, Françoise Genova) and on legal interoperability from: Ohad Graber-Soudry, Timo Minssen, Daniel Nilsson, Marcelo Corrales, Jakob Wested, Bénédicte Illien

EOSC Executive Board

2021 Directorate-General for Research and Innovation

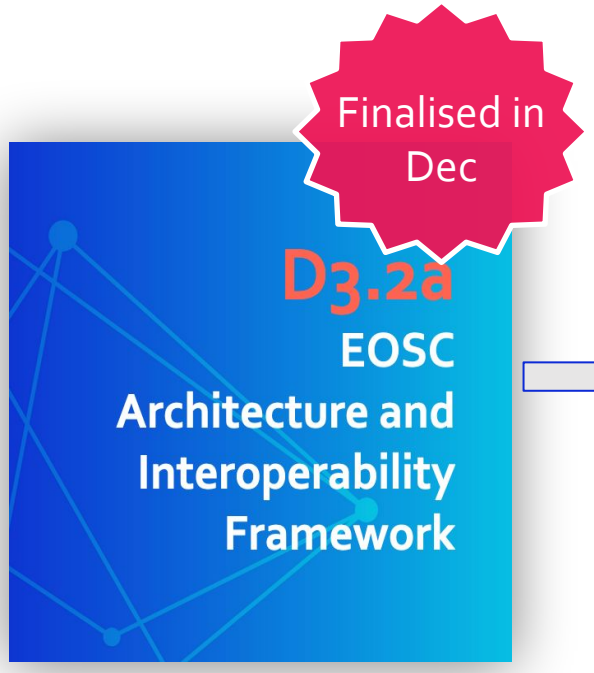
Feb 2021 the EOSC Executive Board Working Groups FAIR and Architecture publishes the EOSC Interoperability Framework Report

The SRIA also has sections on interoperability.

"The EOSC IF is meant to be a generic framework that can be used by all the entities participating in the development and deployment of EOSC, providing a common understanding of the requirements, challenges and recommendations that they should take into account, as well as a general set of principles on how these recommendations may be addressed".

EOSC Future work on the EOSC IF

The Architecture and Interoperability WP (WP3) works to defines a governance model to manage and populate the EOSC Interoperability Framework.



Consultation on the EOSC IF governance

This webinar provides context and identify key aspects we would like to get inputs on (Sec 6 and Appendices)

Working on the content

Community guidelines

Guidelines for EOSC Core Services

WP3 Working Groups

PDF Version

EOSC Interoperability Framework

Why

- EOSC is a federated infrastructure of data and services.
- Interoperability is essential to deliver services to users.
- Adoption of standards is not sufficient…we need to define additional aspects to enable sharing of resources

What

- Set of **guidelines*** that promote standard and community best practices within the EOSC
- And a governance to manage EOSC promoted guidelines
- A registry to list the guidelines and who supports them

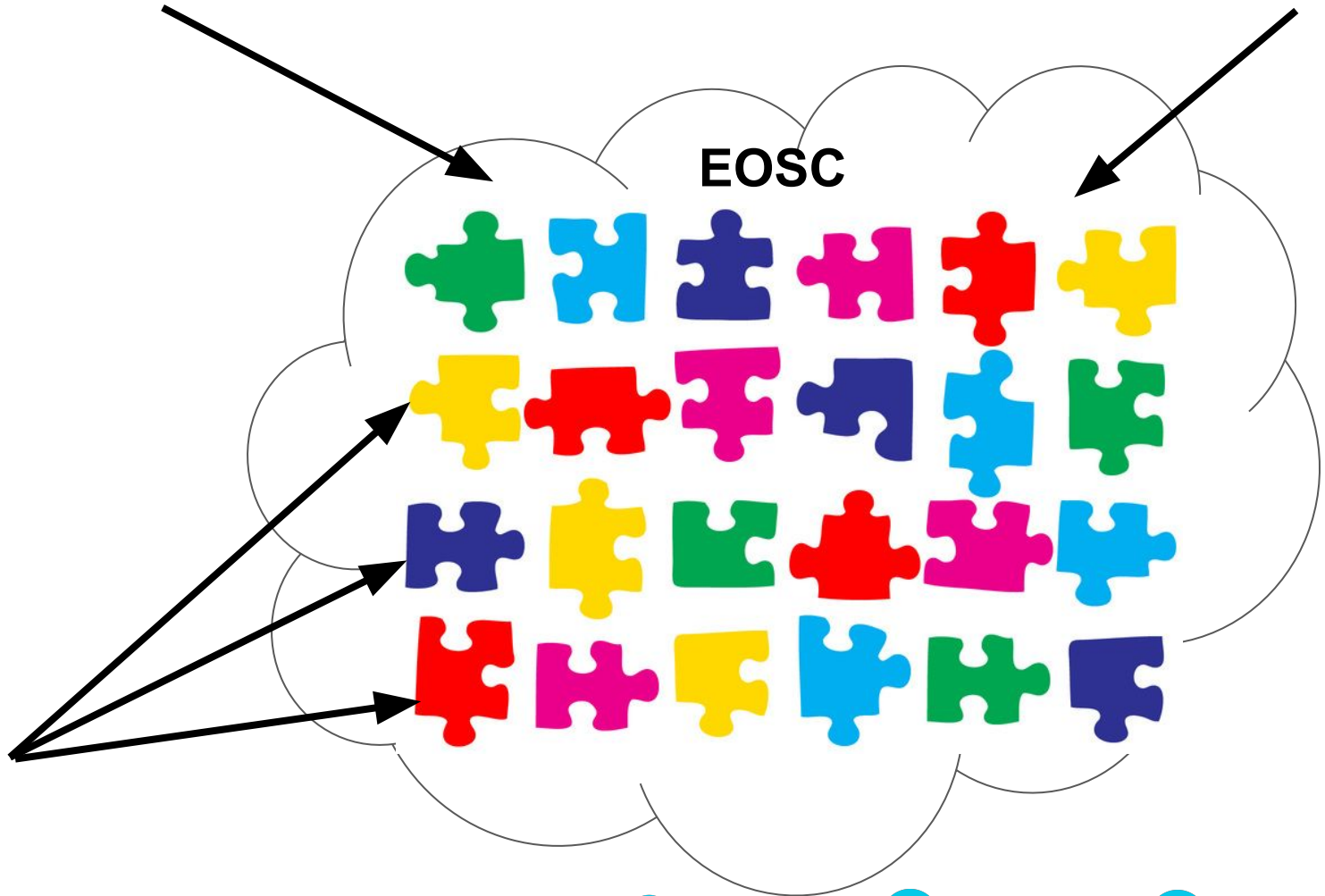
Fostering Interoperability with the EOSC IF

EOSC Resources
(services, datasets, sw, etc.)

EOSC Stakeholders
(providers, communities, researchers, etc.)

A multitude of different interfaces

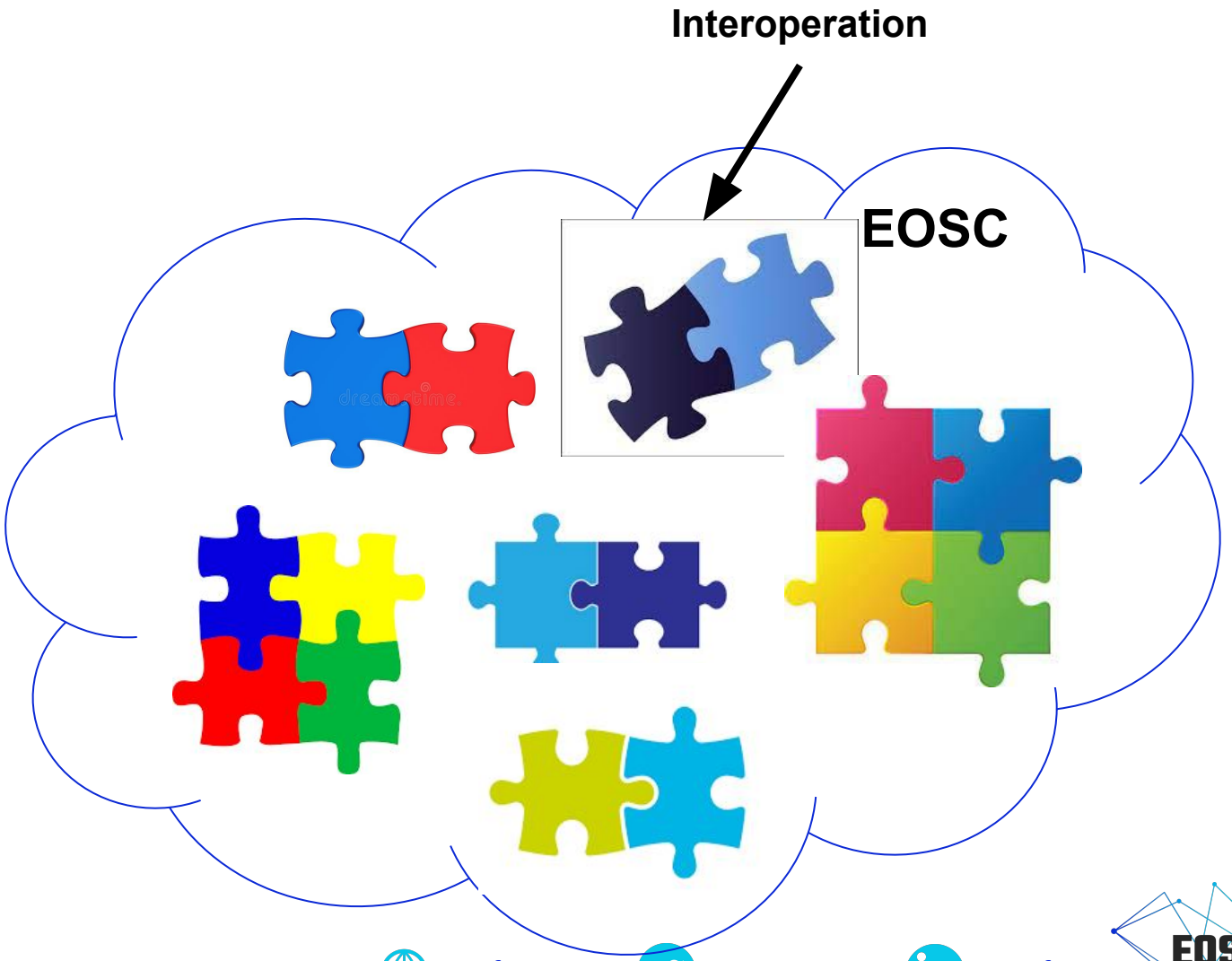
No description of supported interfaces for EOSC Resource



Interfaces of the EOSC Resources

Fostering Interoperability with the EOSC IF

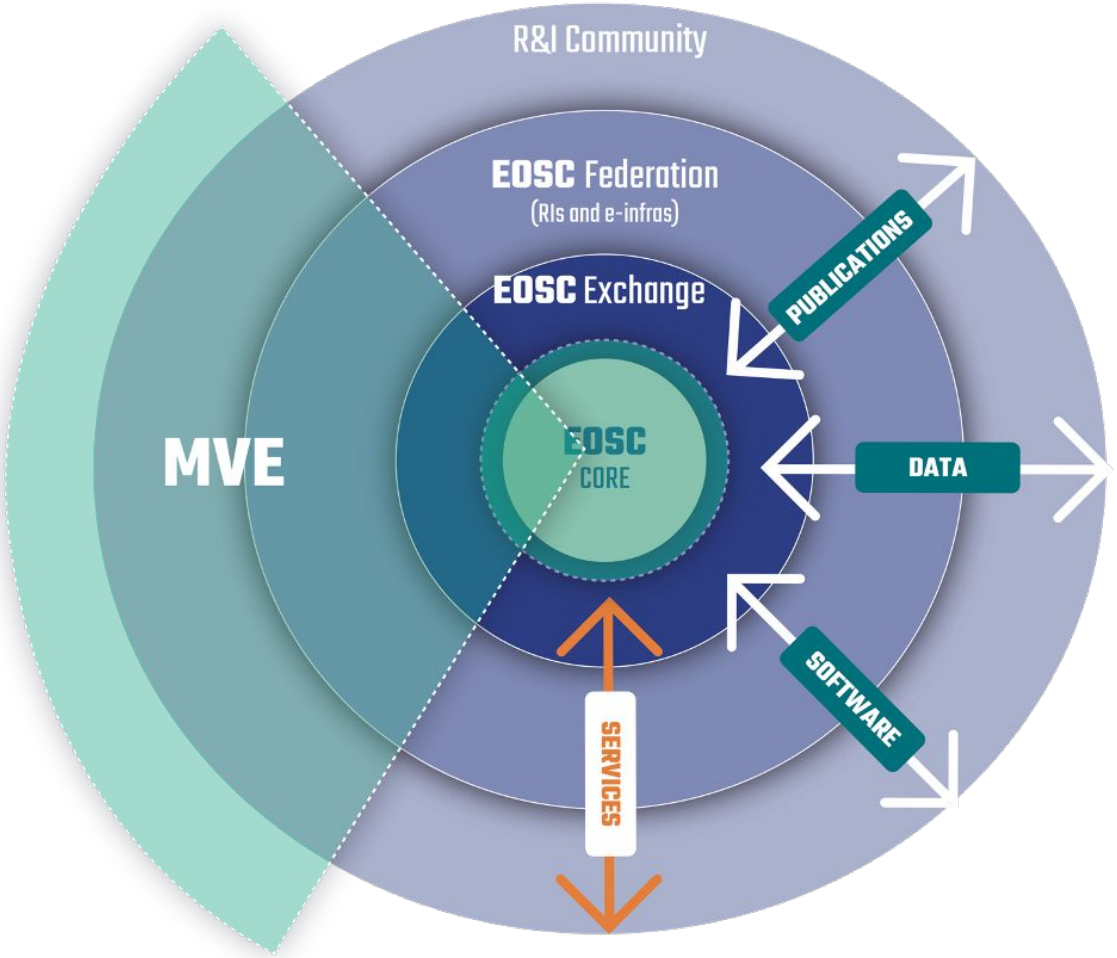
- Promote the adoption of **common standards and interfaces in EOSC**
  - Limited number of selected standards/interfaces
  - Facilitate the interoperation
  - Not reinventing the wheel → adopting already existing standards and community best practices
- Information about **supported interfaces** available **in the EOSC Resource Catalogue**



Architecture Overview

Mark van de Sanden
SURF

Minimal Viable EOSC



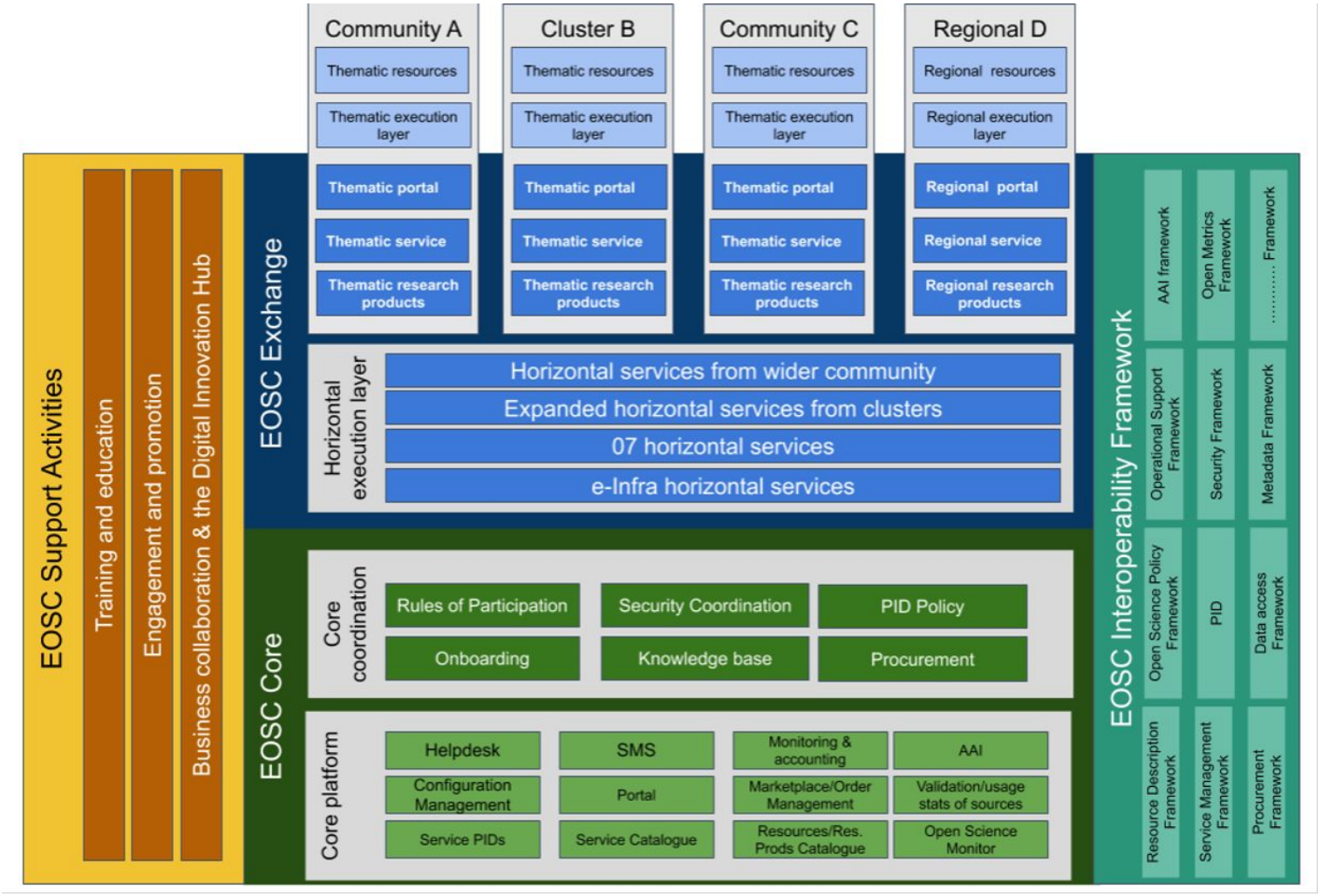
MVE includes:

- EOSC Core and subsets of EOSC Exchange, Federation
- EOSC resources (services, research products) required to "market" the EOSC
- Subset of the R&I community (showcases, e.g., COVID-19)

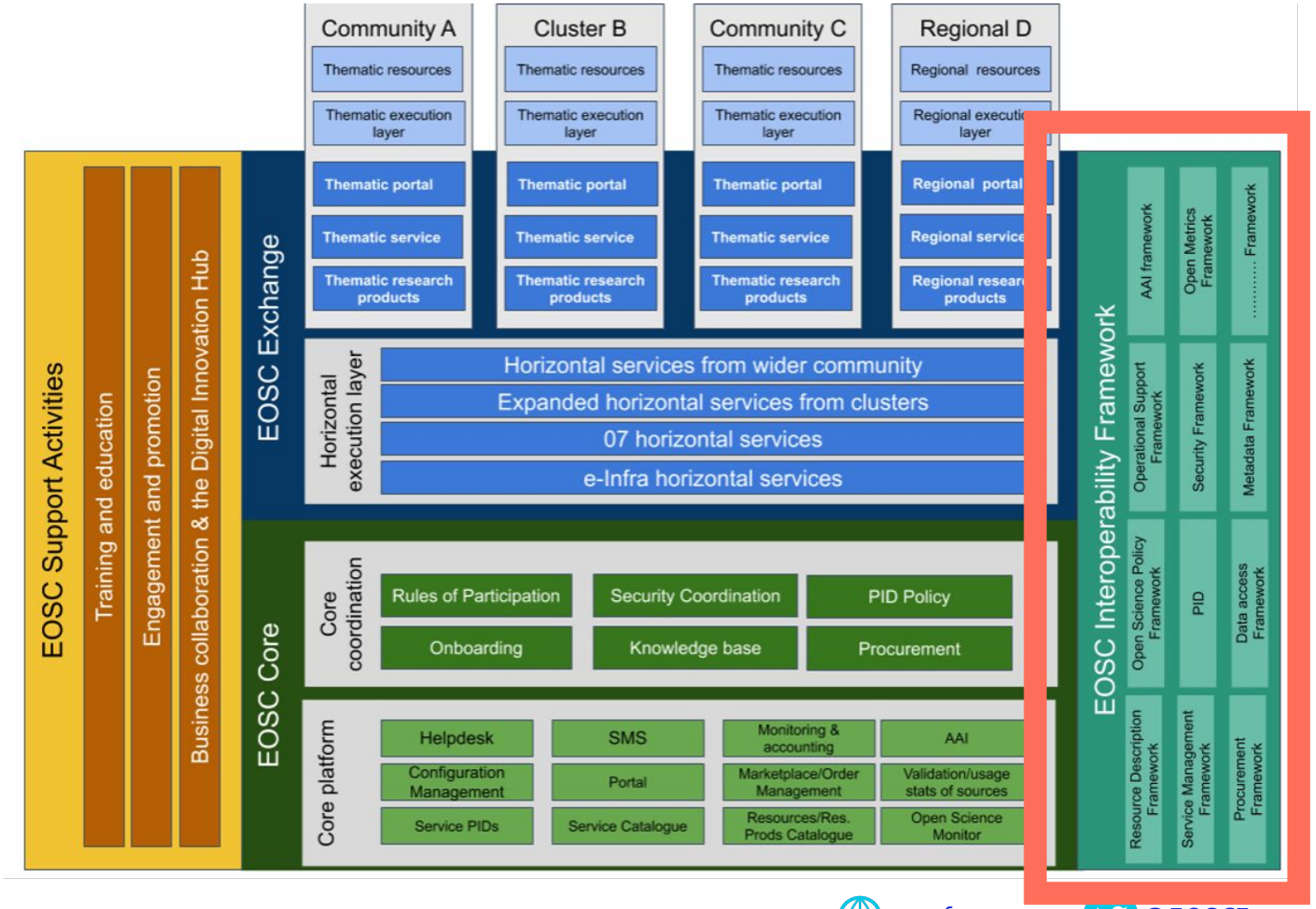
Guiding principles

- The EOSC Future core platform **federates** existing and new infrastructures into a **system of systems**
- EOSC Future delivers the '**glue-layer**' that allows for the composition of resources across infrastructures by:
  - Providing **APIs** and metadata
  - Providing I**nteroperability Frameworks**
  - Providing **portal capabilities**
- Setup the **EOSC-Core**
- Populating the **EOSC-Exchange** with **Services** and **Research Products**
- Technical roadmap is driven by **user requirements** and implemented as an, over time increasing in complexity, set of user capabilities

EOSC Architecture

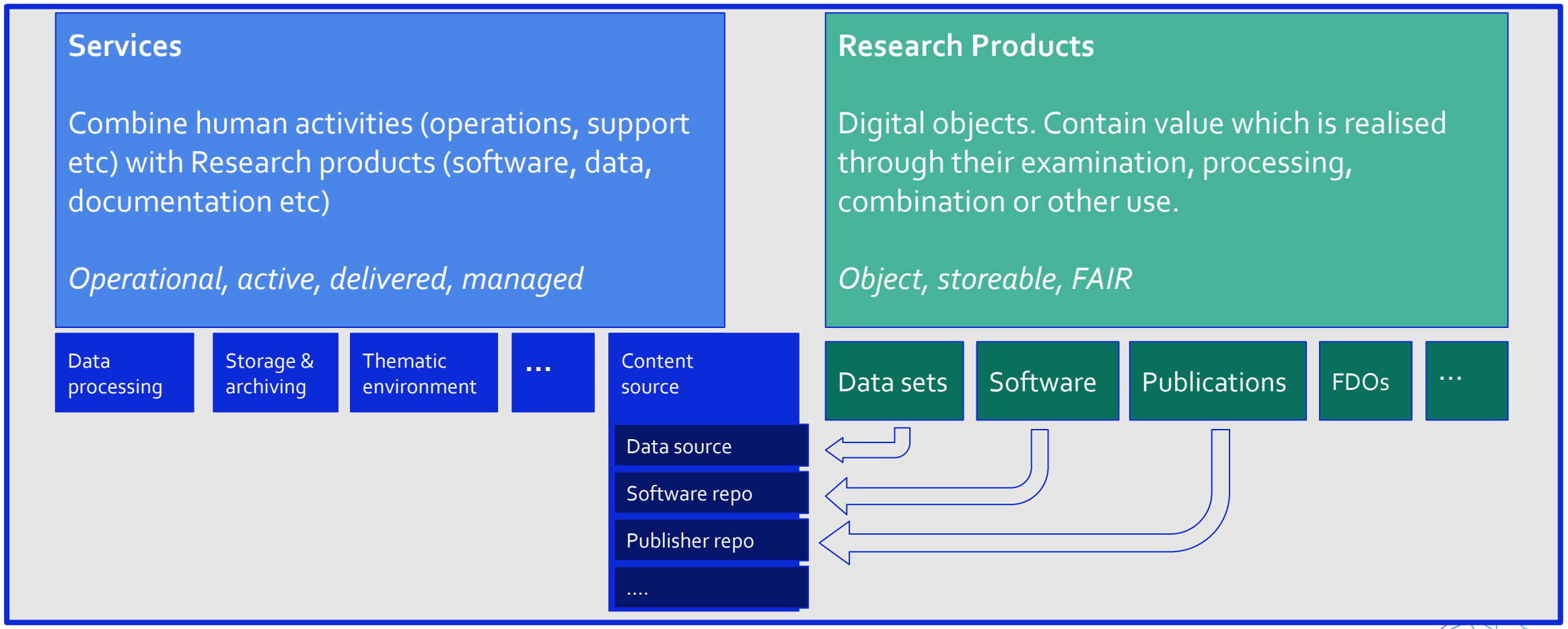


EOSC Architecture - EIF

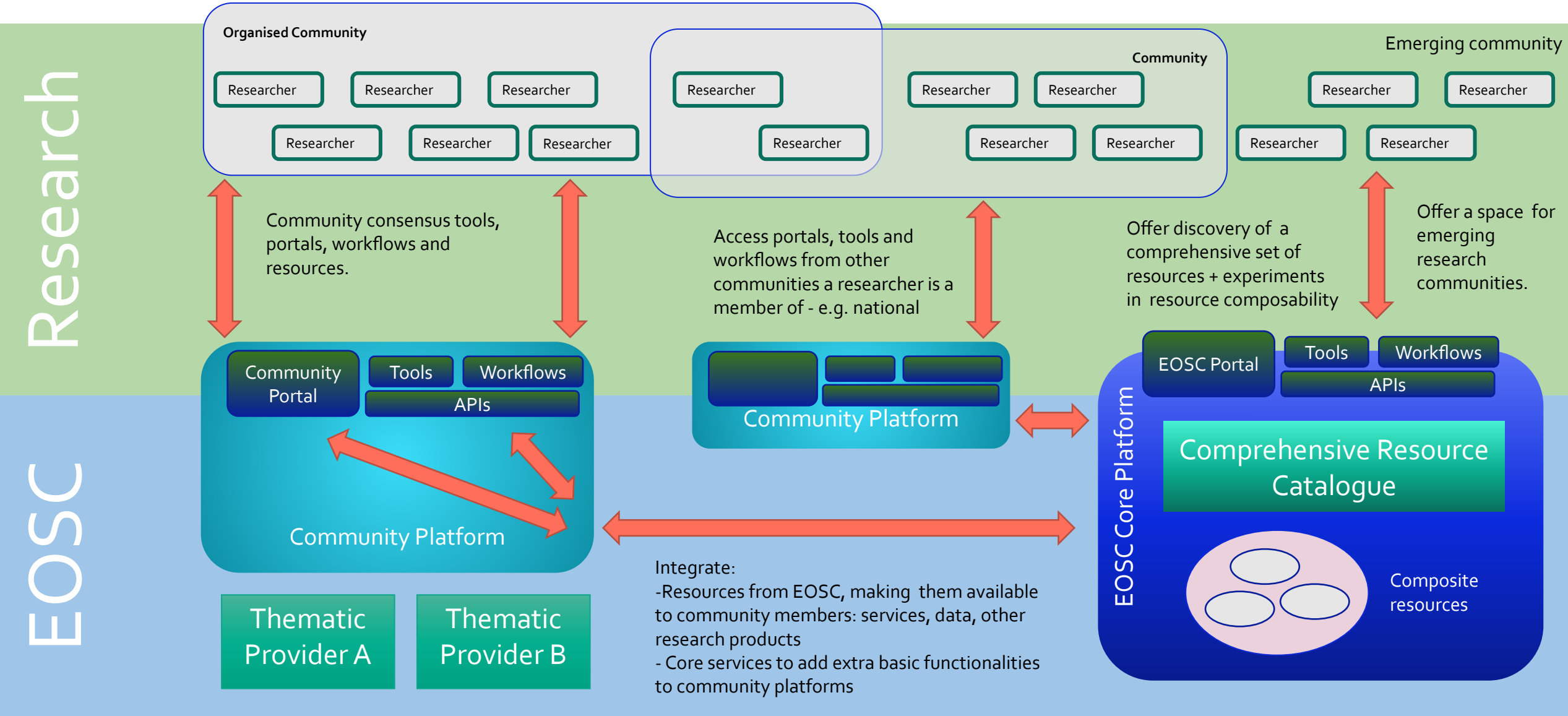


- Resource Description Framework (services and research products)
- (Persistent) Identifiers
- AAI
- Metadata and Ontologies
- Accounting
- Monitoring
- Order management
- Helpdesk

EOSC Resources



Community view: different modes of collaboration



EOSC Interoperability Framework

Current status and next steps in EOSC Future

The EOSC Interoperability Framework (IF)

AARC EOSC-hub EOSC ENHANCE FAIRSFAIR ADVANCE

EOSC Interoperability Guidelines

Standards, APIs, policy frameworks to compose EOSC resources

INFRAEOSC-07 projects

Cluster projects

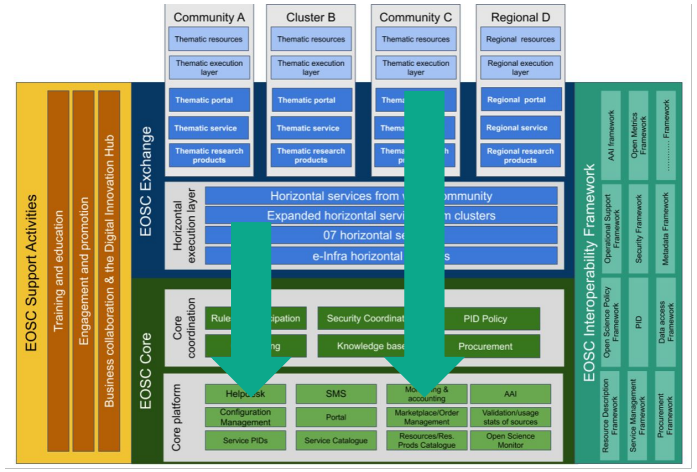
Regional projects

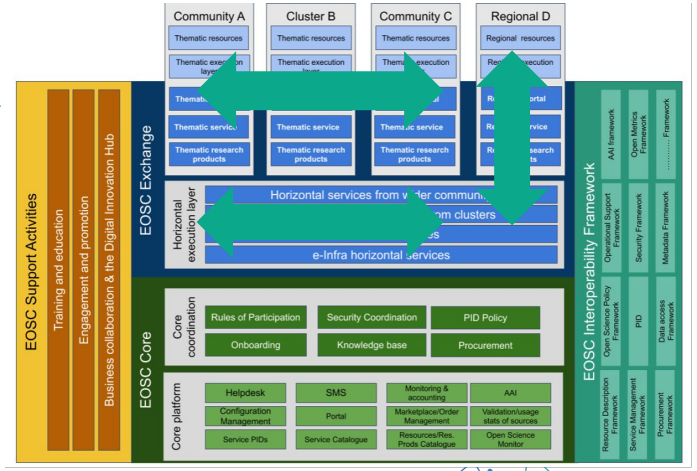
EOSC Future

EOSC Interoperability Framework

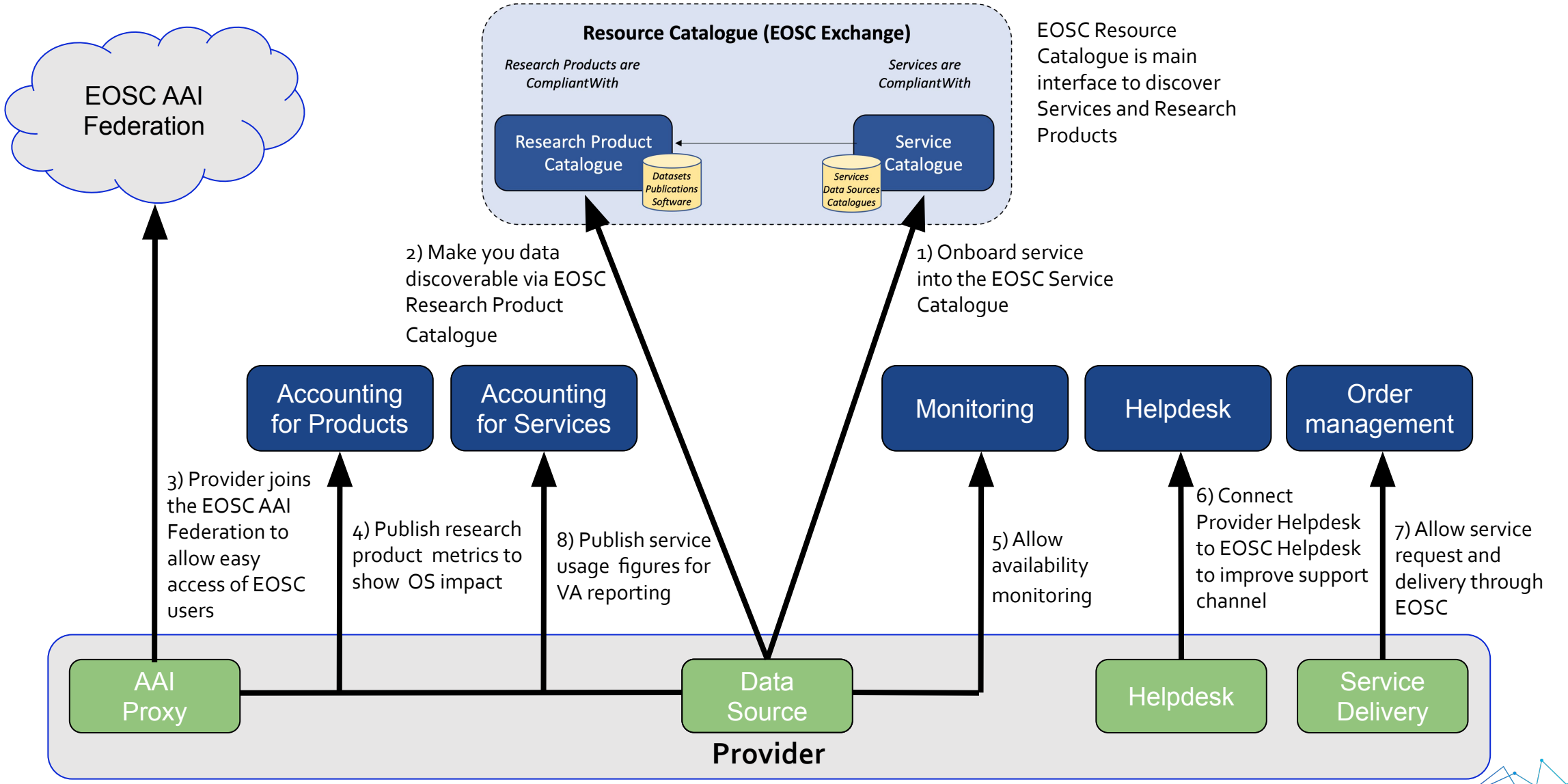
Governance and services for proposing, accepting, registering and promoting EOSC Interoperability Guidelines.

From scattered interoperability guidelines to an overall framework





Different levels of integration with EOSC Core Platform



Illustrative use case: examples of enabling interoperability

Diego Scardaci
EGI

Paolo Manghi
OpenAIRE

Data Transfer and Analysis Workflow enabled by the EOSC Interoperability Framework

Setting the scene

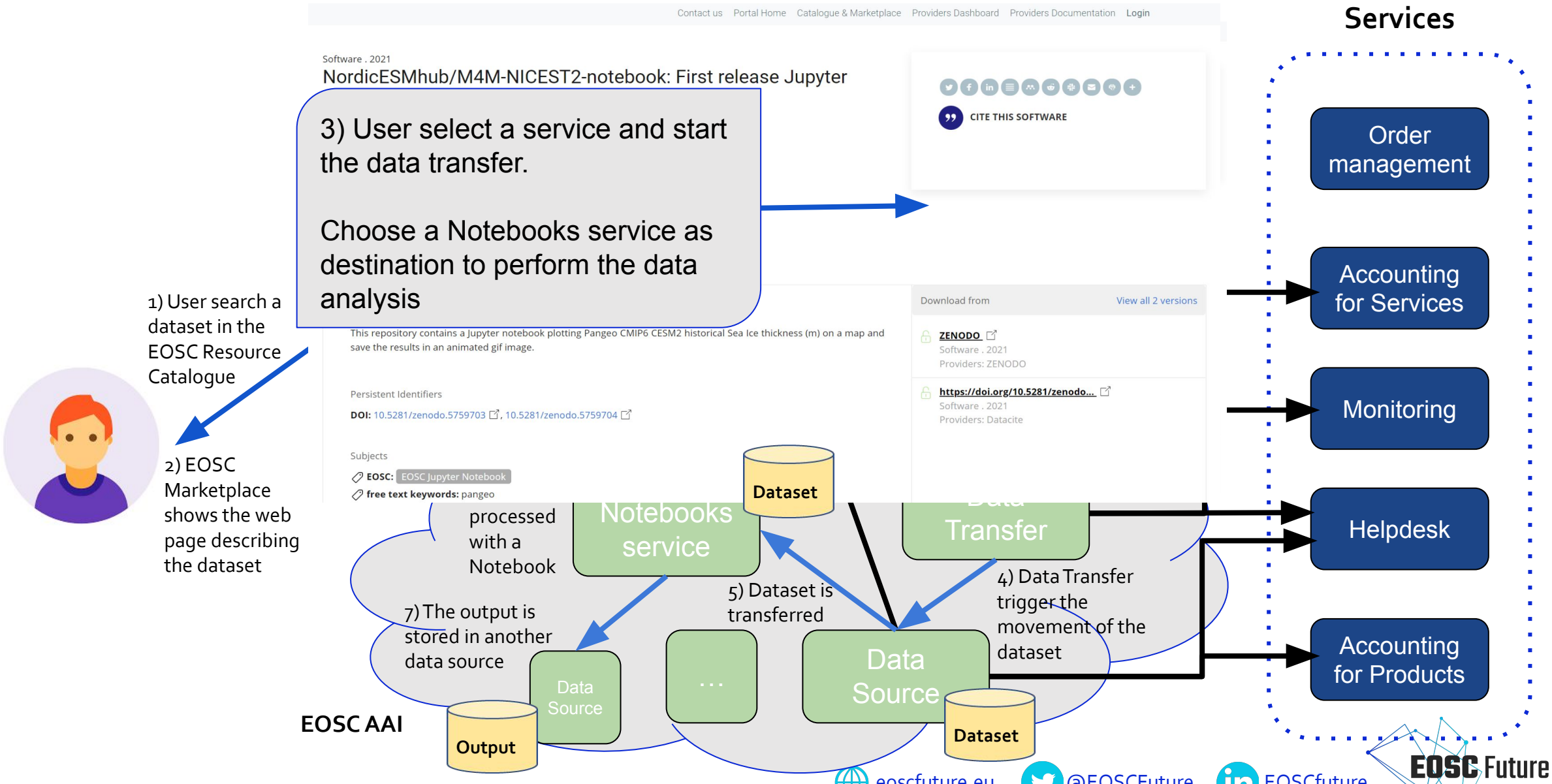
This use case shows :

- How the **EOSC Interoperability Framework** (EOSC IF) allows the identification of services and research products that can work together.
- In our example:
  - A Data Transfer service interoperable with a Data Source
  - A service able to process Notebooks
- How integration with the EOSC-Core services (AAI, Helpdesk, Monitoring, etc.), which is enabled by the EOSC IF, can improve the user experience

The case shown in the slides is oriented towards **single researchers navigating in the EOSC Portal**

- The researcher searches for a dataset in the EOSC Marketplace
- The EOSC IF capabilities supporting this case can be also exploited via APIs
  - Fit better to large communities willing to integrate the EOSC IF capabilities in their workflows

The Use Case


EOSC Core Services
Order management
Accounting for Services
Monitoring
Helpdesk
Accounting for Products
Contact us
Portal Home
Catalogue & Marketplace
Providers Dashboard
Providers Documentation
Login
Software . 2021
NordicESMhub/M4M-NICEST2-notebook: First release Jupyter
CITE THIS SOFTWARE
3) User select a service and start the data transfer.
Choose a Notebooks service as destination to perform the data analysis
1) User search a dataset in the EOSC Resource Catalogue
2) EOSC Marketplace shows the web page describing the dataset
This repository contains a Jupyter notebook plotting Pangeo CMIP6 CESM2 historical Sea Ice thickness (m) on a map and save the results in an animated gif image.
Persistent Identifiers
DOI: 10.5281/zenodo.5759703, 10.5281/zenodo.5759704
Subjects
EOSC: EOSC Jupyter Notebook
free text keywords: pangeo
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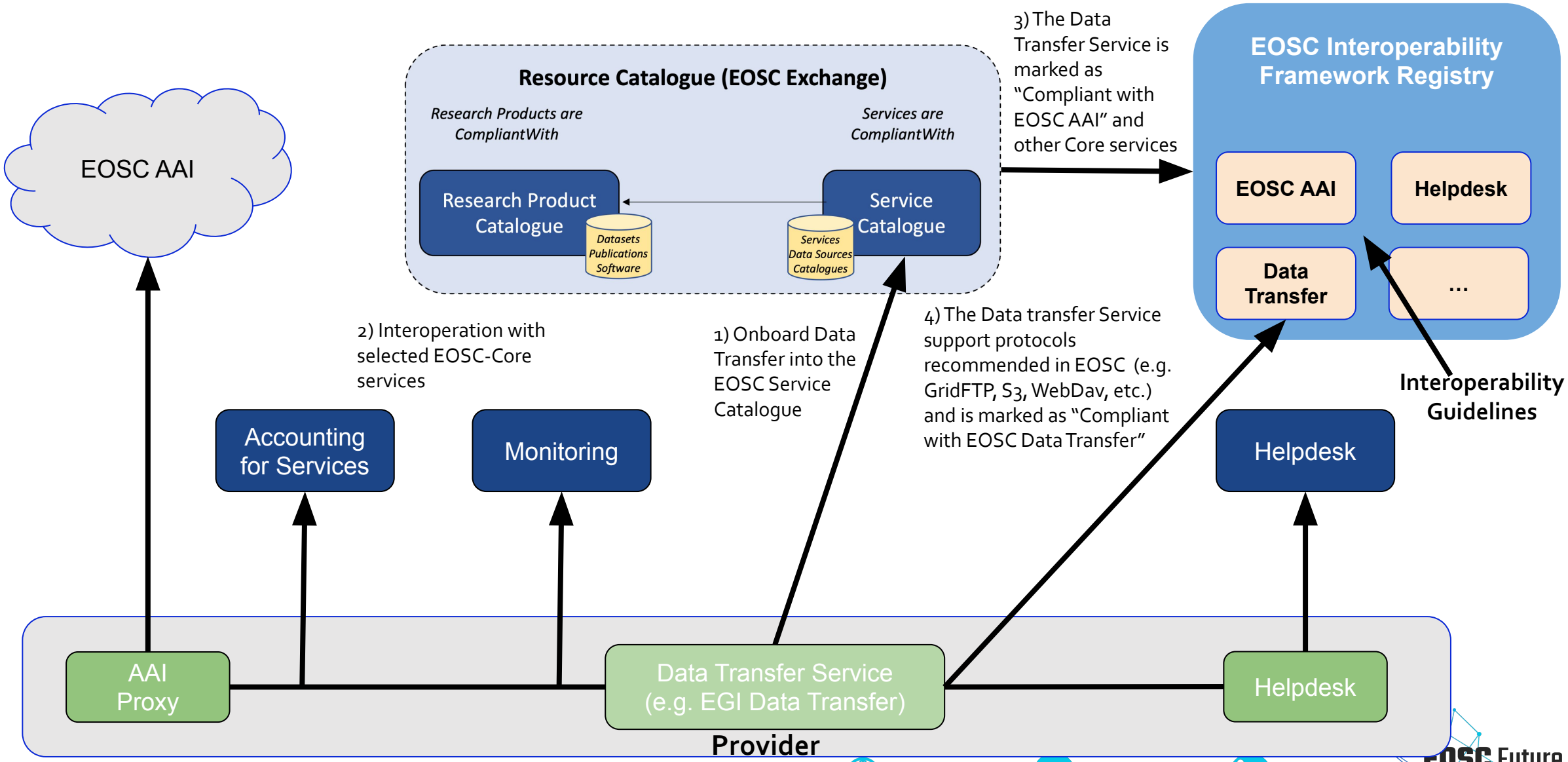
ZENODO
Software . 2021
Providers: ZENODO
https://doi.org/10.5281/zenodo...
Software . 2021
Providers: Datacite
Dataset
processed with a Notebook
Notebooks service
Data Transfer
4) Data Transfer trigger the movement of the dataset
5) Dataset is transferred
7) The output is stored in another data source
Data Source
...
Data Source
Output
Dataset
EOSC AAI

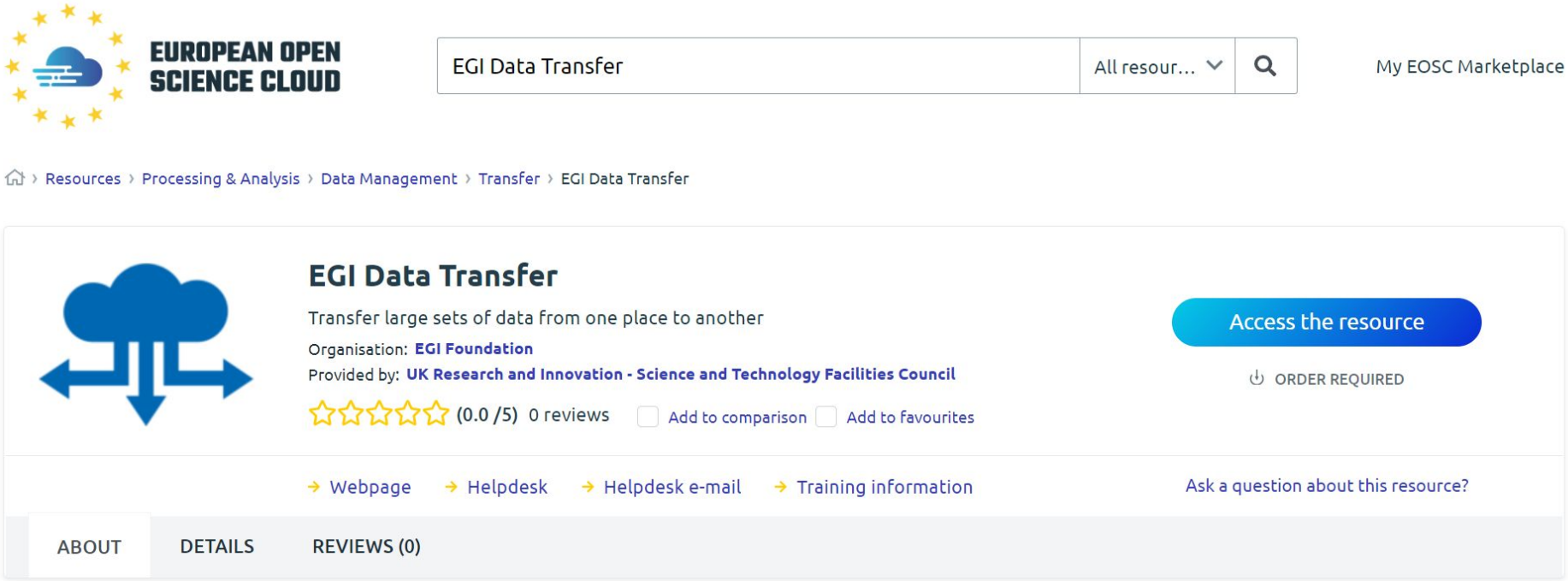
How to make this use case possible

- **Enrolled services and research products in EOSC**
  - Making a data source and all its datasets available in EOSC
  - Making a data transfer service available in EOSC
  - Making a Notebook service available in EOSC
- **Integration with EOSC-Core Services**
  - Enabling common AAI, Integrated Helpdesks, Monitoring, Accounting, Order Management
- **Making EOSC Resources interoperable**
  - Register Interoperability Guidelines in the EOSC IF Registry
  - Rules to check if 2 different EOSC Resources are compatible

Making a Data Transfer service available in EOSC

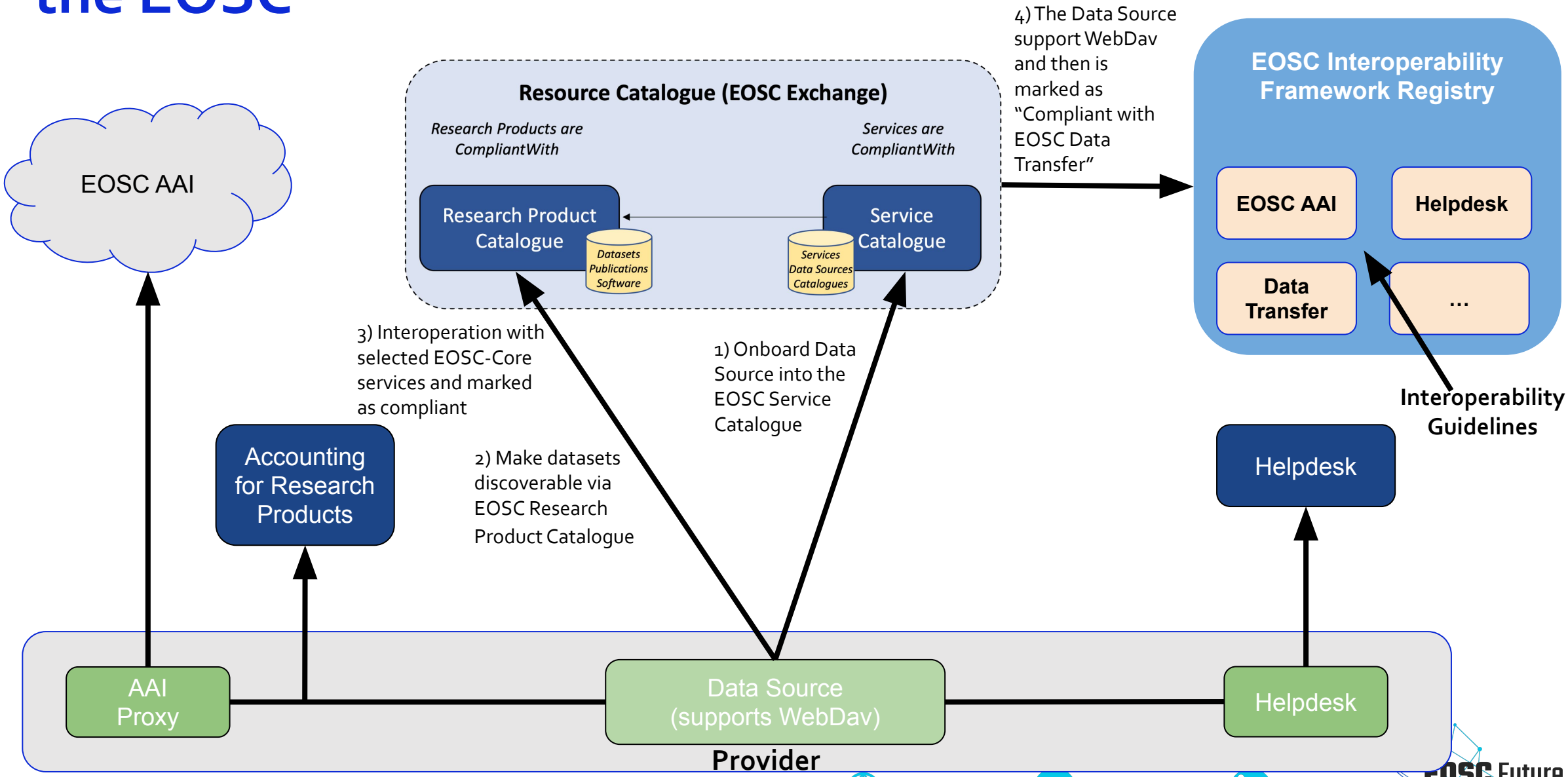


Navigate to a Data Transfer service in the EOSC Portal



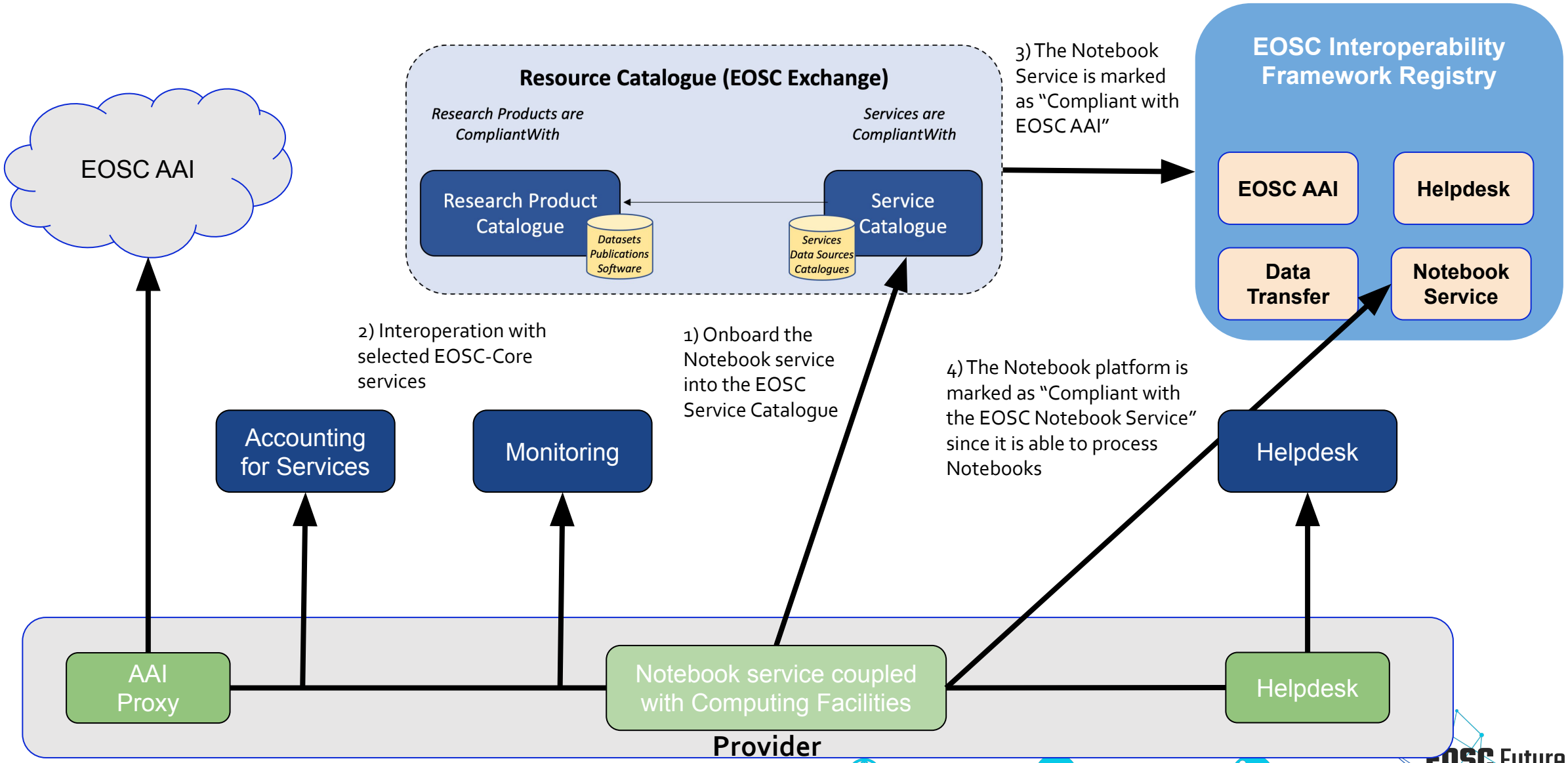
Compliant with EOSC AAI
Supported Protocols: GridFTP, S3, WebDav, etc

Making a Data Source and its datasets discoverable in the EOSC

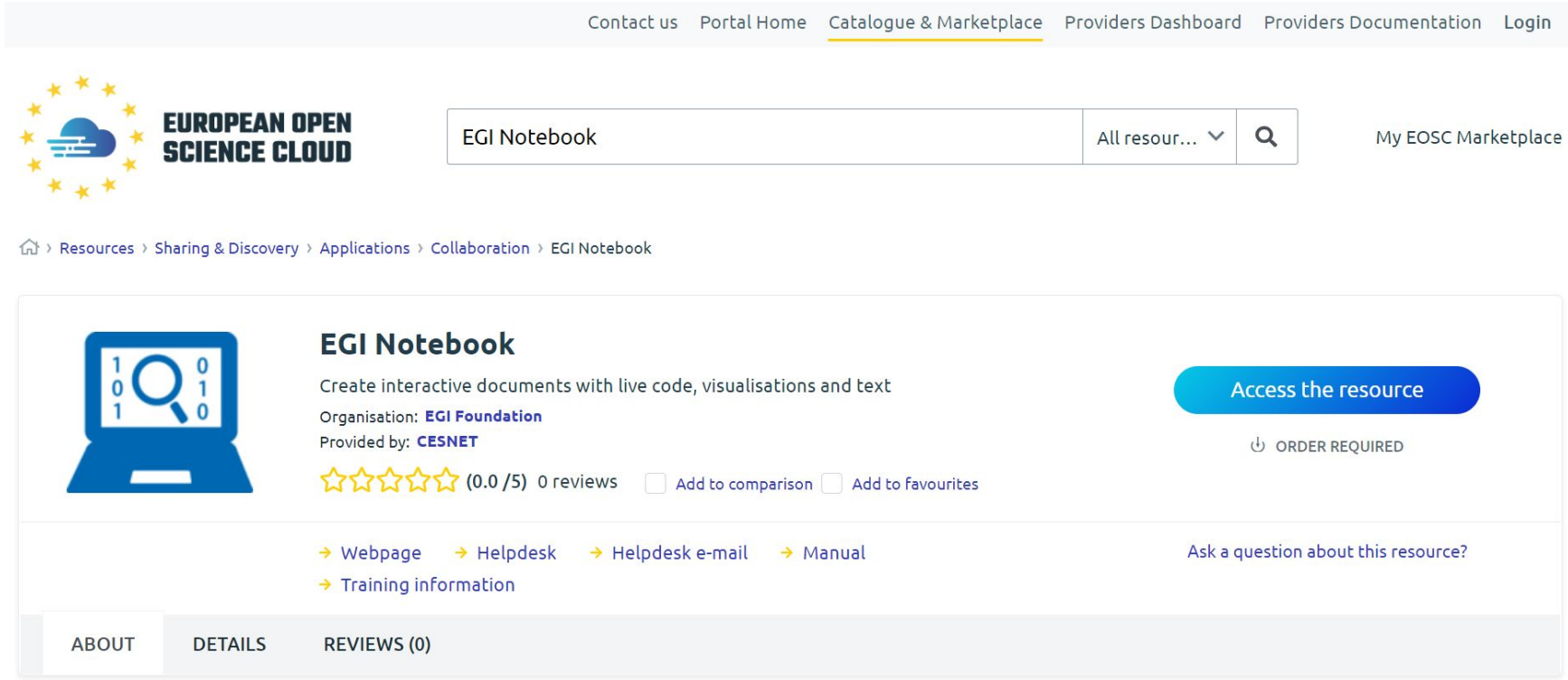


Navigate to a Dataset in the EOSC Portal

Making a Notebook service available in EOSC



Navigate to a Notebooks service in the EOSC Portal



Getting support through the EOSC Helpdesk

Single point of contact

EOSC First line of support for ticket triage

Benefits for EOSC Users

Create a ticket

EOSC Helpdesk

Interoperation

Interoperation

Interoperation

Helpdesk

Data Transfer Service (e.g. EGI Data Transfer)

Provider

Helpdesk

Data Source

Provider

Helpdesk

Notebook service coupled with Computing Facilities

Provider

Only relevant tickets reach the providers

Providers manage tickets with their tools

Benefits for EOSC Providers

Governing the EIF

Michelle Williams

GEANT Association

The EOSC IF must be built, promoted and maintained with structure, fairness and transparency.

It does not seek to replace existing community guidelines with its own versions

It will not reinvent existing 'ISO-style' certification models

EOSC channels will be used to announce newly adopted/deprecated guidelines to the research community at large

It will support the identification of gaps in interoperability solutions, and will assist with technical interoperability in the future

It intends to confirm the readiness of each proposed interoperability artifact

EOSC Interoperability Registry

Initial scope:

- Output of EOSC Hub, EOSC Enhance, AARC and OpenAIRE projects
- the 'Main Standards and Interfaces as a Starting Point for EOSC Future' (Appendix D of the supporting document)

Objectives:

- become a library of accepted artefacts, and
- a supporting tool for the governance
- to help track each Guideline through the proposal and consultation process.
- become a de facto EOSC Knowledge Base.

The registry will…

- be publicly available,
- link resources, services and research products to supported guidelines
  - help resources/service owners integrate with the resource catalogue
  - help users discover resources on the basis of the guidelines they support
- help identify gaps in interoperability.

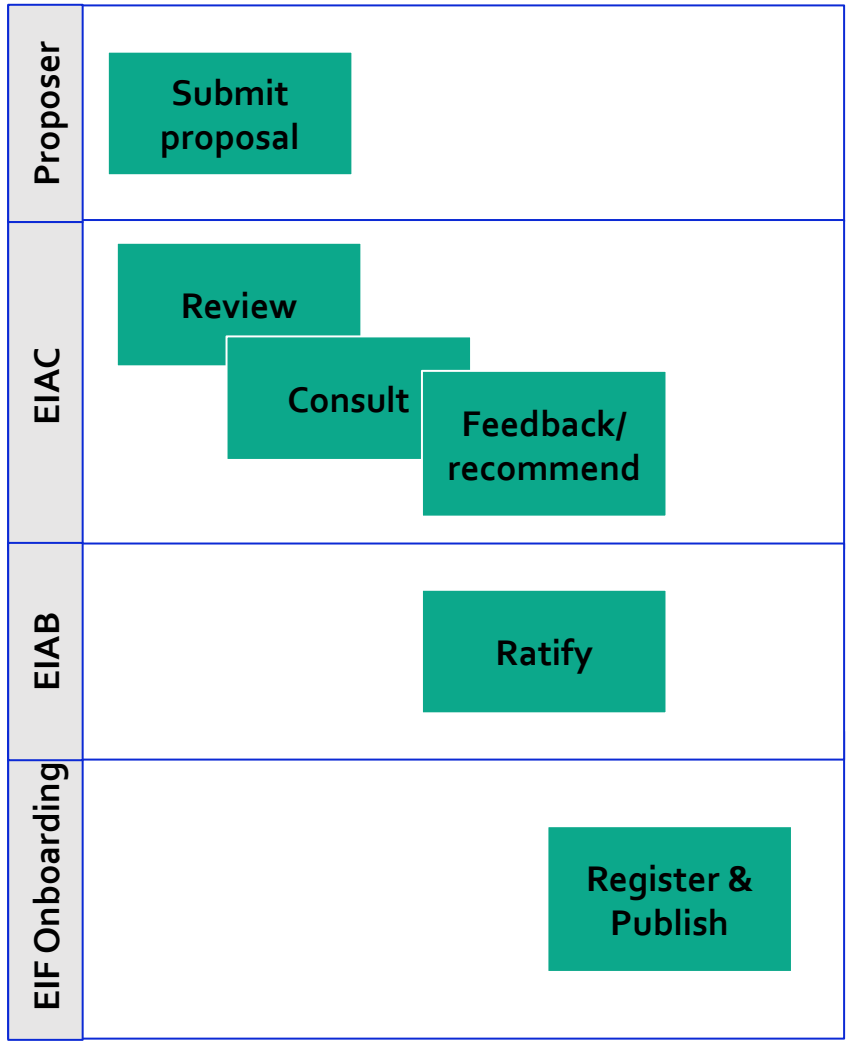
Governing bodies

"An overarching, independent group that will assess whether requests for inclusion into the EOSC IF are compliant with a minimum set of requirements"*

Body	Responsibility	Interim body for duration of EOSC Future project
EOSC Interoperability Advisory Board (EIAB)	Responsible for • overseeing the EOSC IF; • endorsing guidelines, based on the recommendations of the EIAC.	EOSC Future Technical Coordination Board
EOSC Interoperability Area Chairs (EIAC)	Responsible for: • performing the initial assessment of the proposed guidelines • making recommendations for inclusion to the EIAB.	EOSC Future WP3 task leads (calling in community experts to help with the review process as needed).

*Minimum requirements are initially set out in Appendix A of the supporting document

Proposal Process

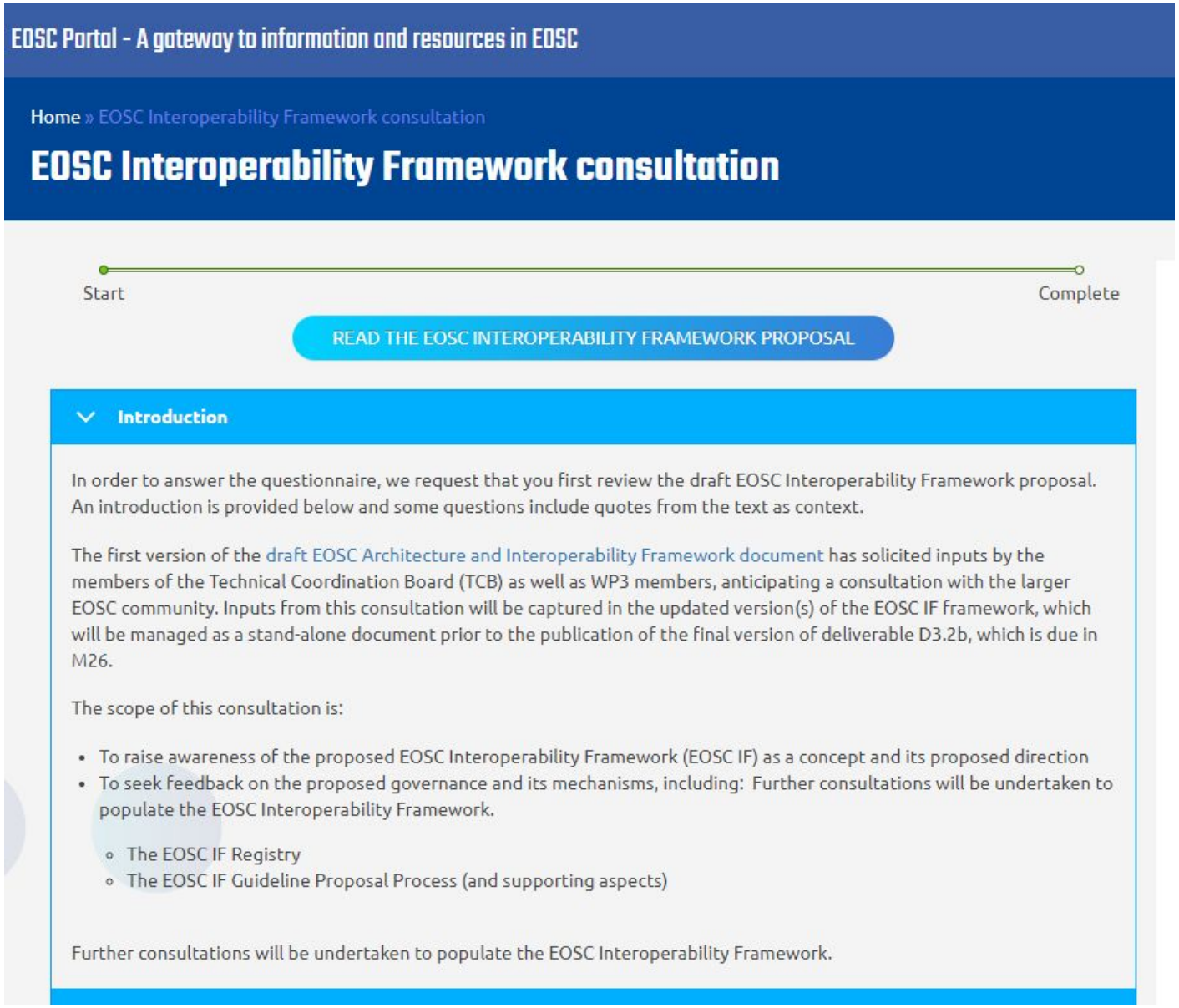


- EOSC IF governance will support proposal, consultation and ratification
- a proposed process to is outlined in Appendix A.
- A guardian or owner can propose inclusion using a proposal form (Appendix B)
- it is proposed that Appendix D forms the basis of the EOSC IF.

How to provide feedback

Sarah Jones

GEANT Association



Your feedback is vital!

Consultation survey: https://eosc-portal.eu/eosc-interoperability-framework-consultation

Next steps

Consultation:

- Opens today!
- Ends 15th April

Implementation:

- iterate the governance model, proposal process, etc, to include feedback
- publish final versions
- agree data model for describing Interoperability Guidelines
- create the registry
- populate the registry (with 'starting point')
- aiming to be operational by autumn

Q&A

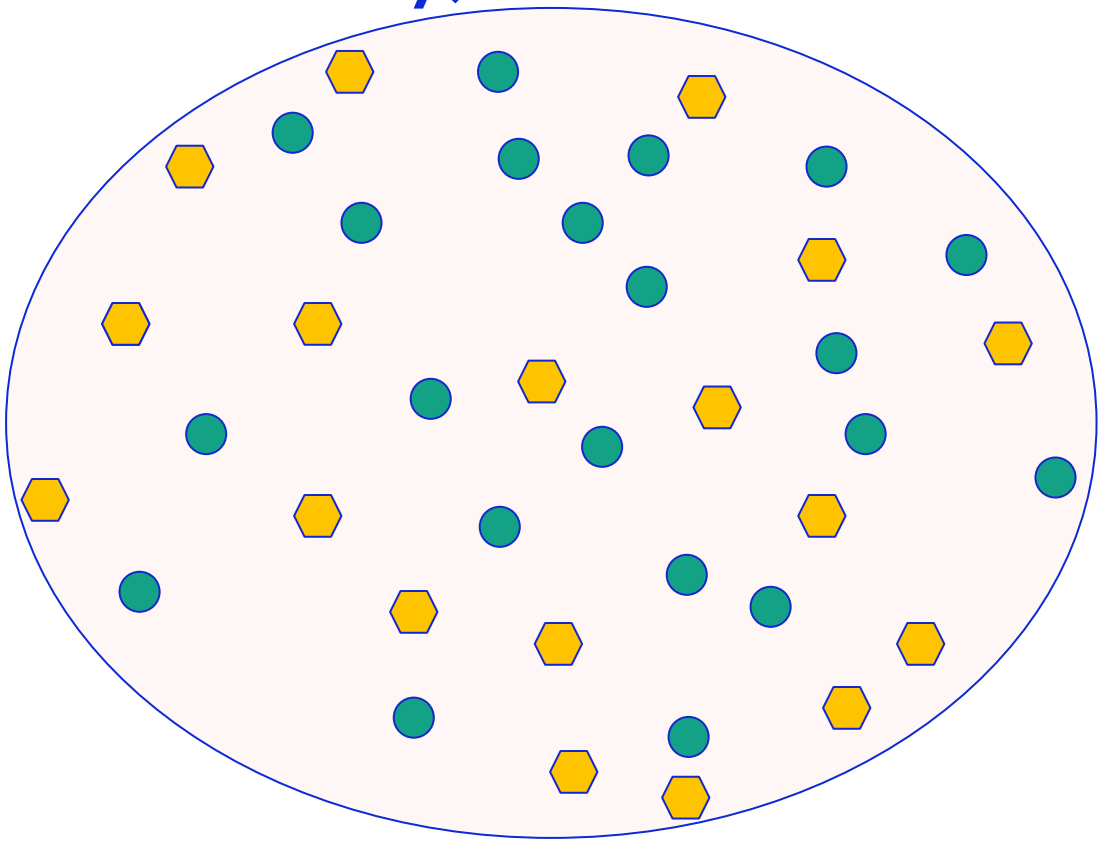
Slido:

Get in touch

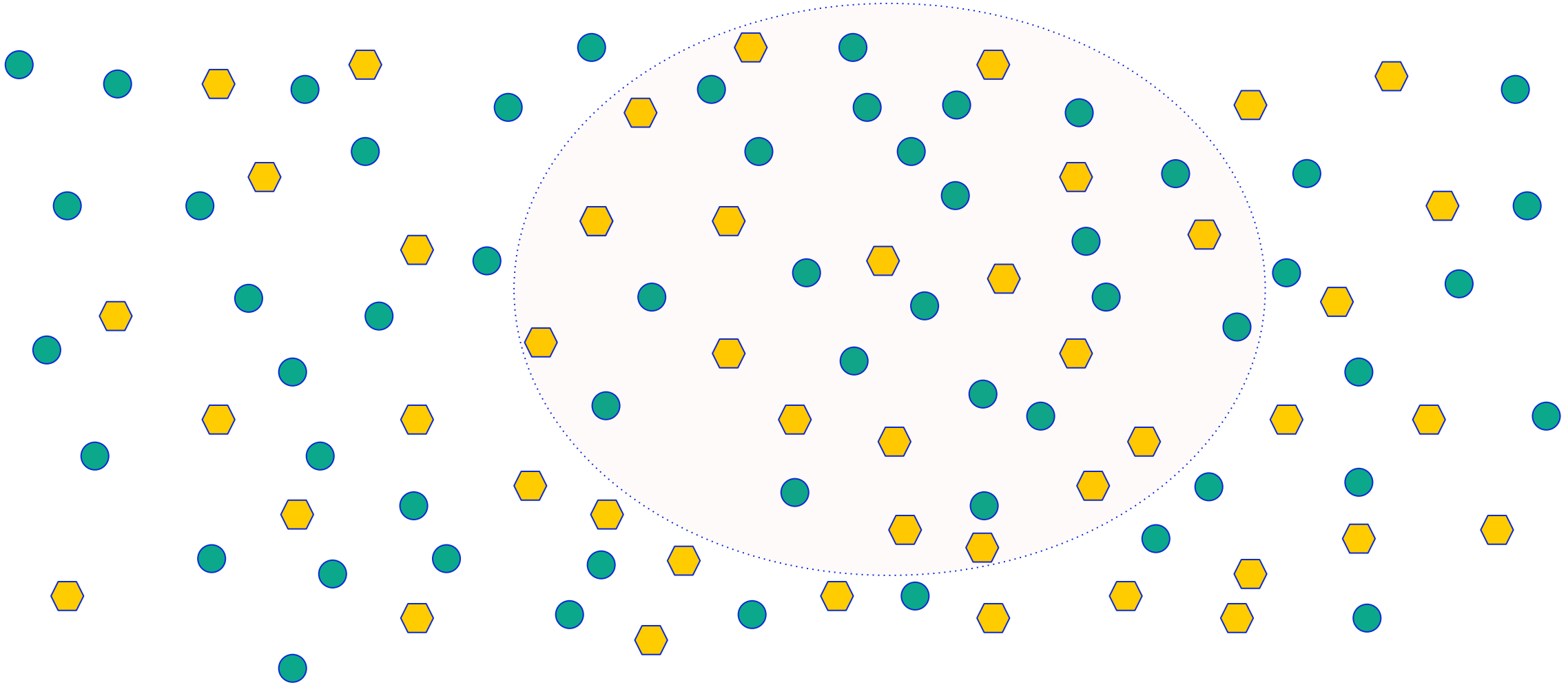
eoscfuture.eu @EOSCFuture EOSCfuture

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

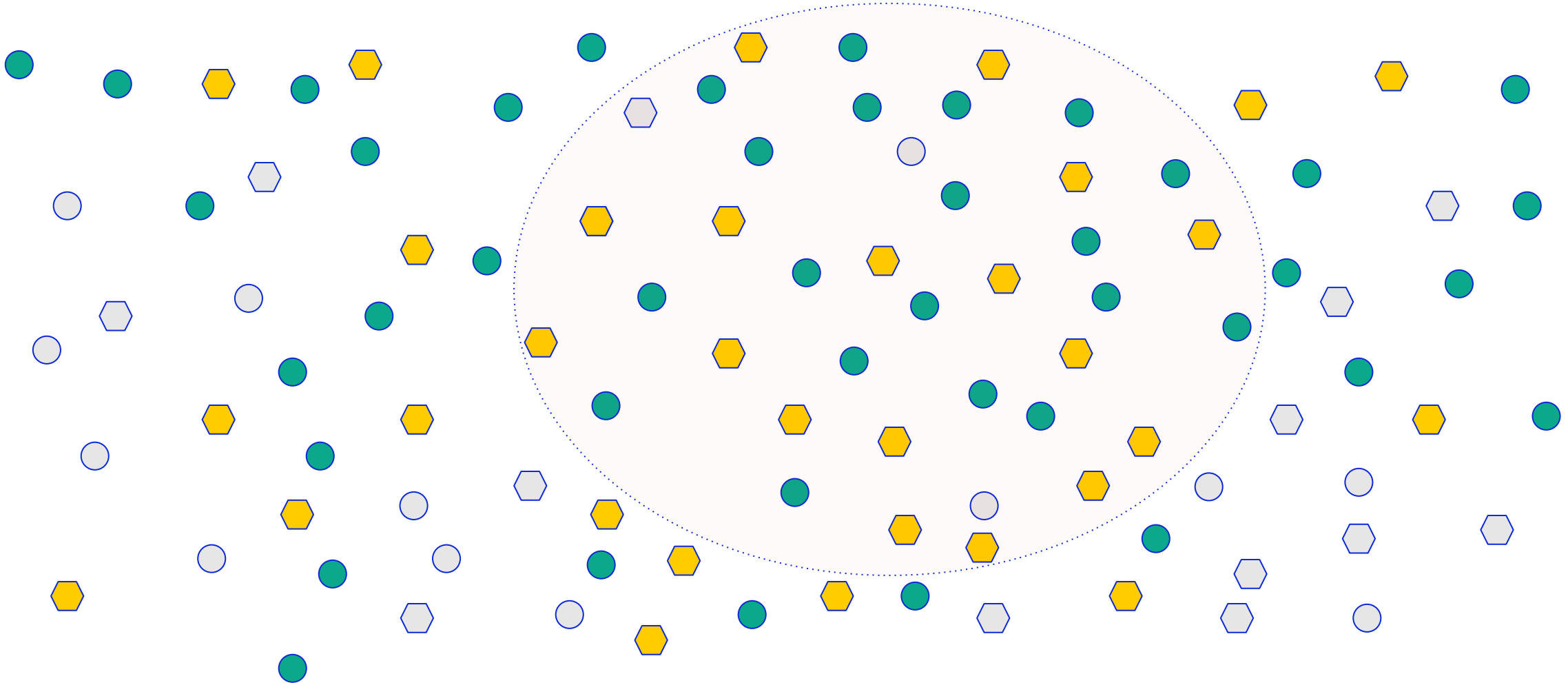
Without Interoperability
(limited to my own community)



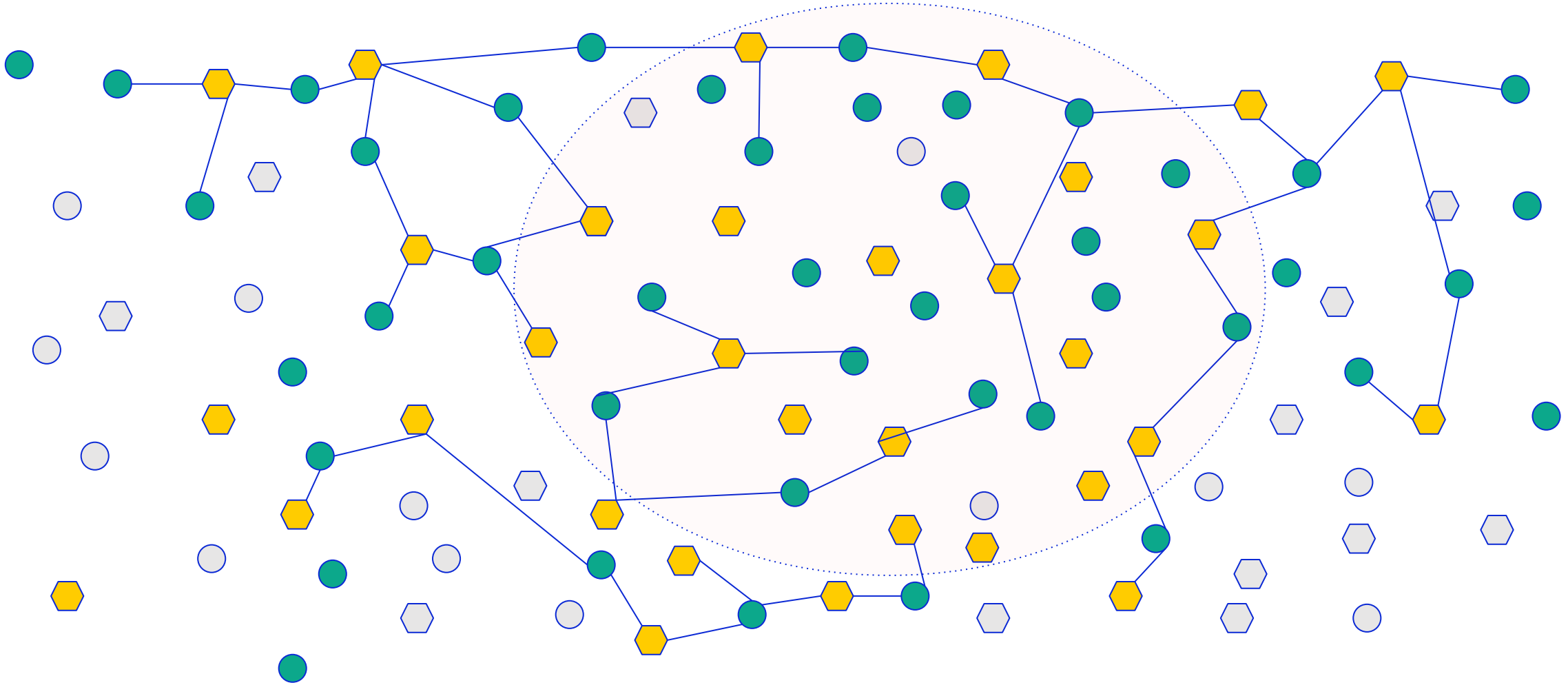
With Findability (Catalogue Interoperability)



With Accessibility (AAI, interoperable authorization)
(fewer things – but you can be sure you can access)



With Technical Interoperability
(Compliance with EOSC Interoperability Framework)



Connecting Interoperable Resources into Workflow