The EOSC Core

26 April 2022

EOSC Future with C-SCALE DICE EGI-ACE OpenAIRE NEXUS Reliance ARCHIVER

The EOSC Future, C-SCALE, DICE, EGI-ACE, OpenAIRE-Nexus, Reliance and ARCHIVER projects are funded by the European Union Horizon Programme calls INFRAEOSC-03-2020 and INFRAEOSC-07-2020 and H2020-ICT-2018-20

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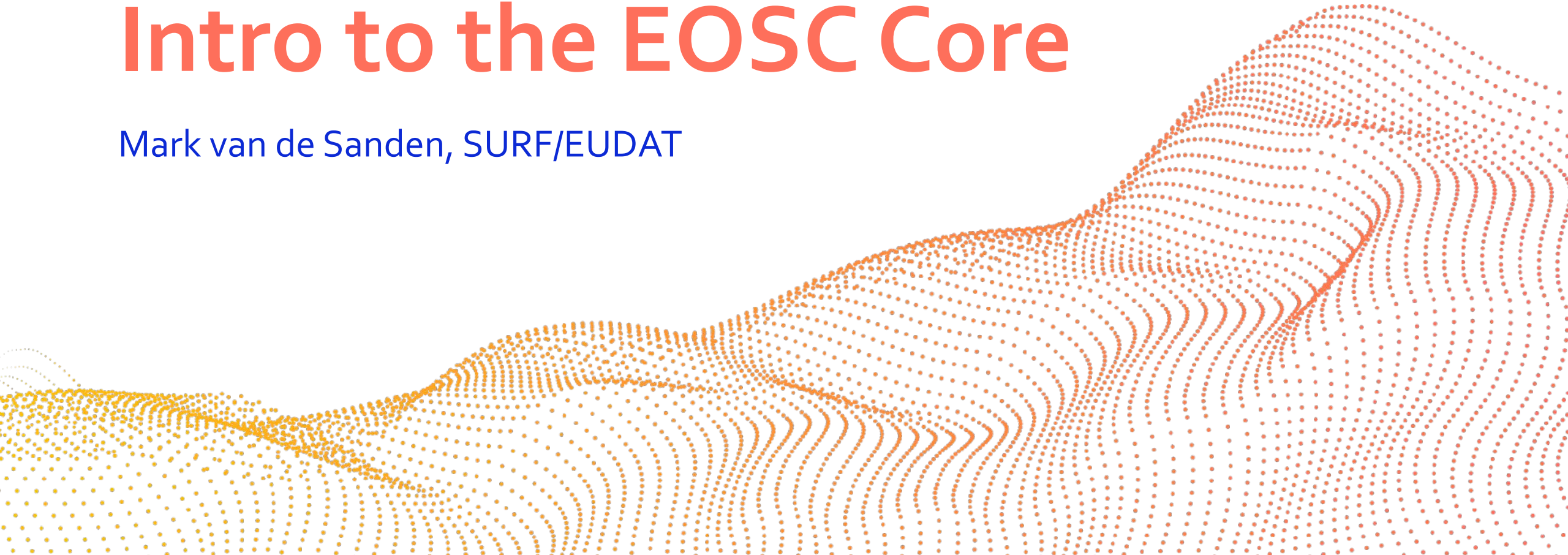
Outline

- **Intro to the EOSC-Core**
  Mark van de Sanden, SURF/EUDAT
- **AAI**
  Christos Kanellopoulos, GEANT
- **Monitoring**
  Kostas Koumantaros, GRNET
- **Accounting for Services**

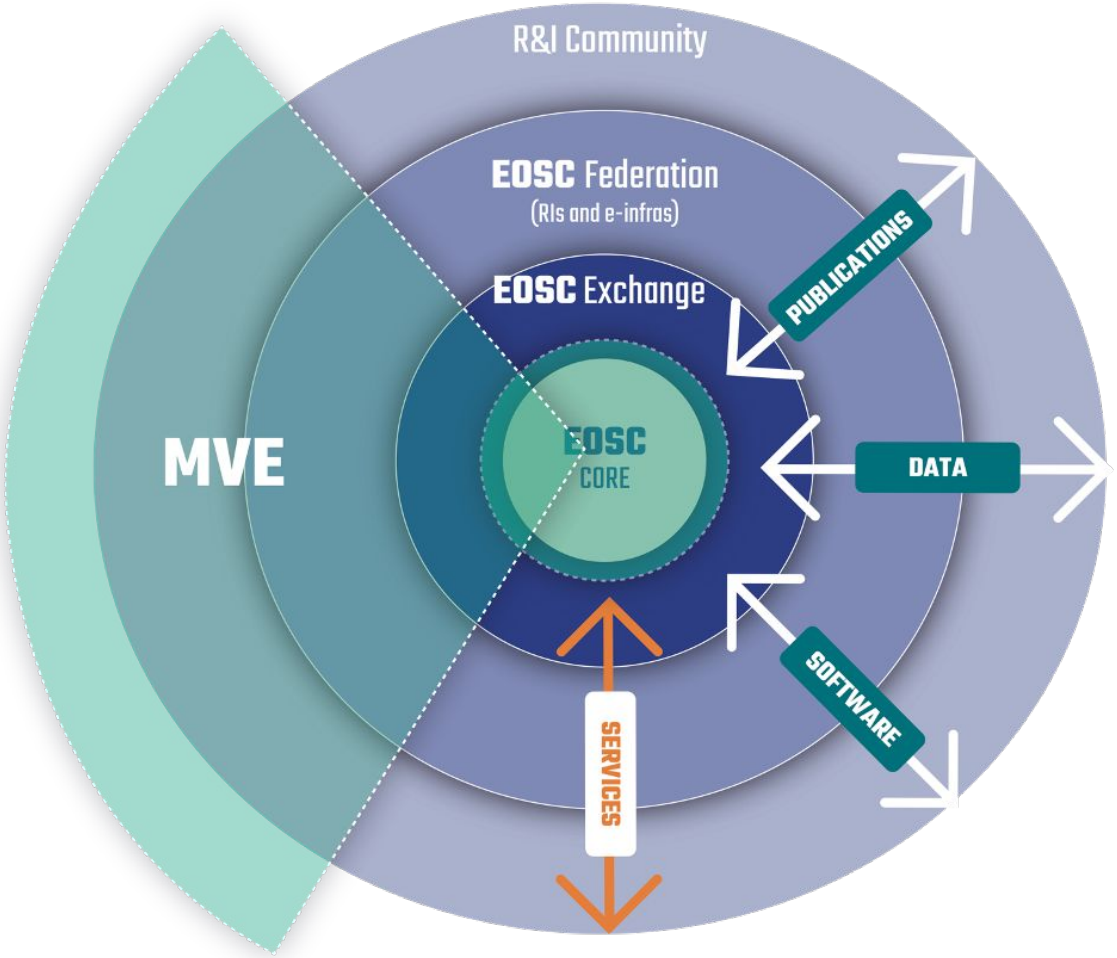
  Kostas Koumantaros, GRNET
- **Accounting for Research Products**
  Andreas Czernia, Bielefeld University
- **Order Management**
  Roksana Wilk, Cyfronet
- **Helpdesk**
  Pavel Weber, Karlsruhe Institute of Technology
- **Q&As**

Intro to the EOSC Core

Mark van de Sanden, SURF/EUDAT



Minimal Viable EOSC



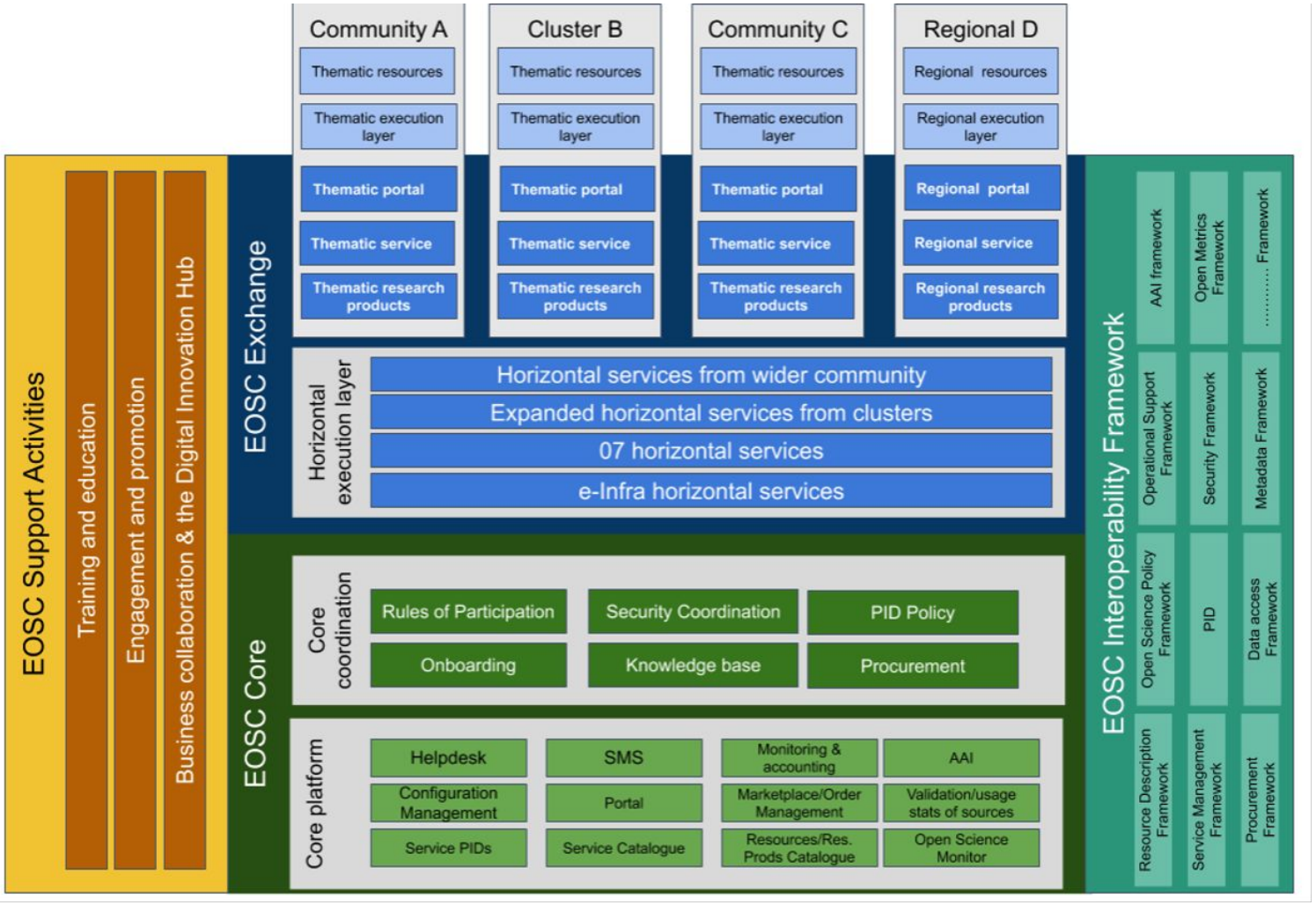
MVE includes:

- 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)

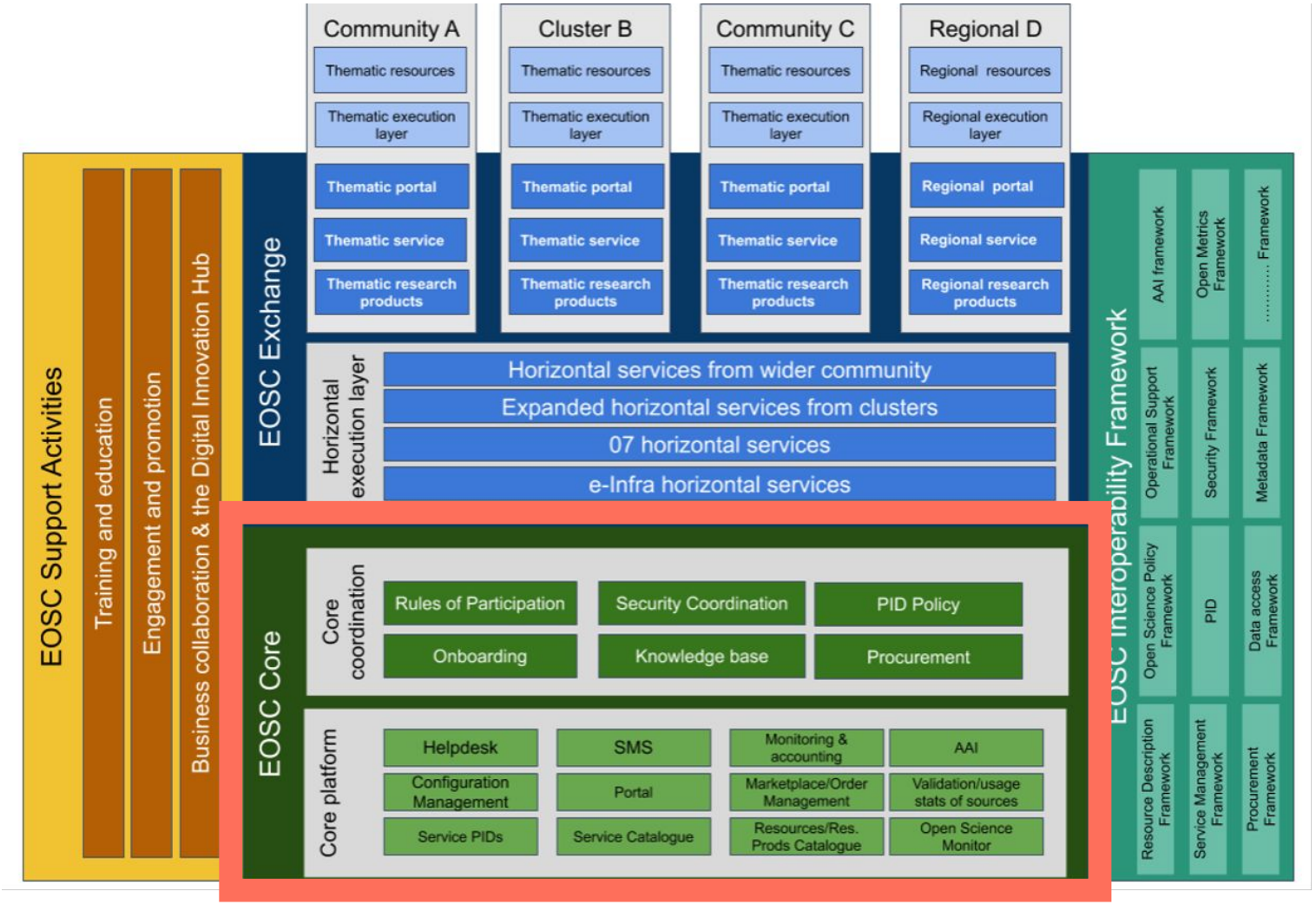
Guiding principles

- 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

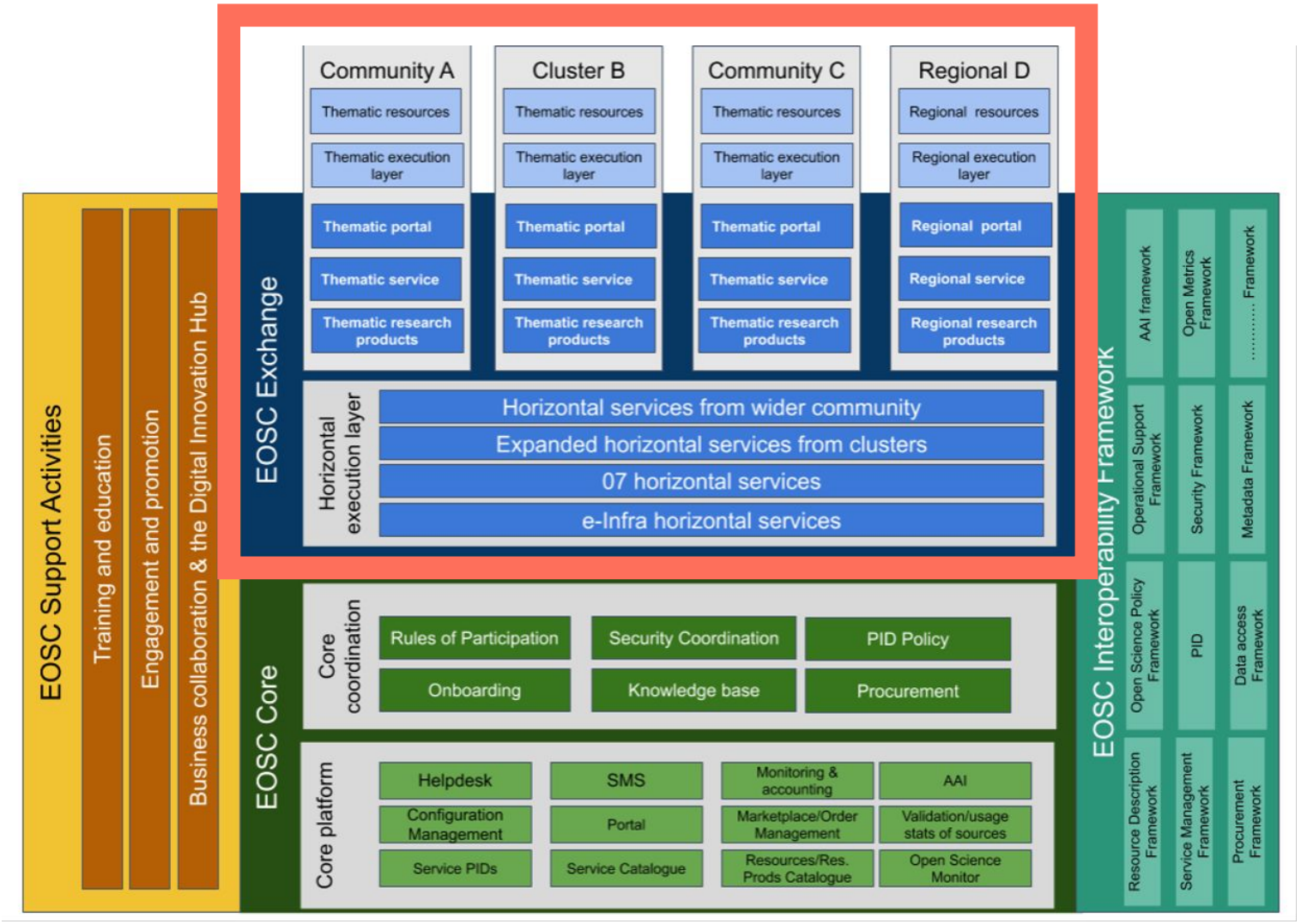


EOSC Architecture - Core



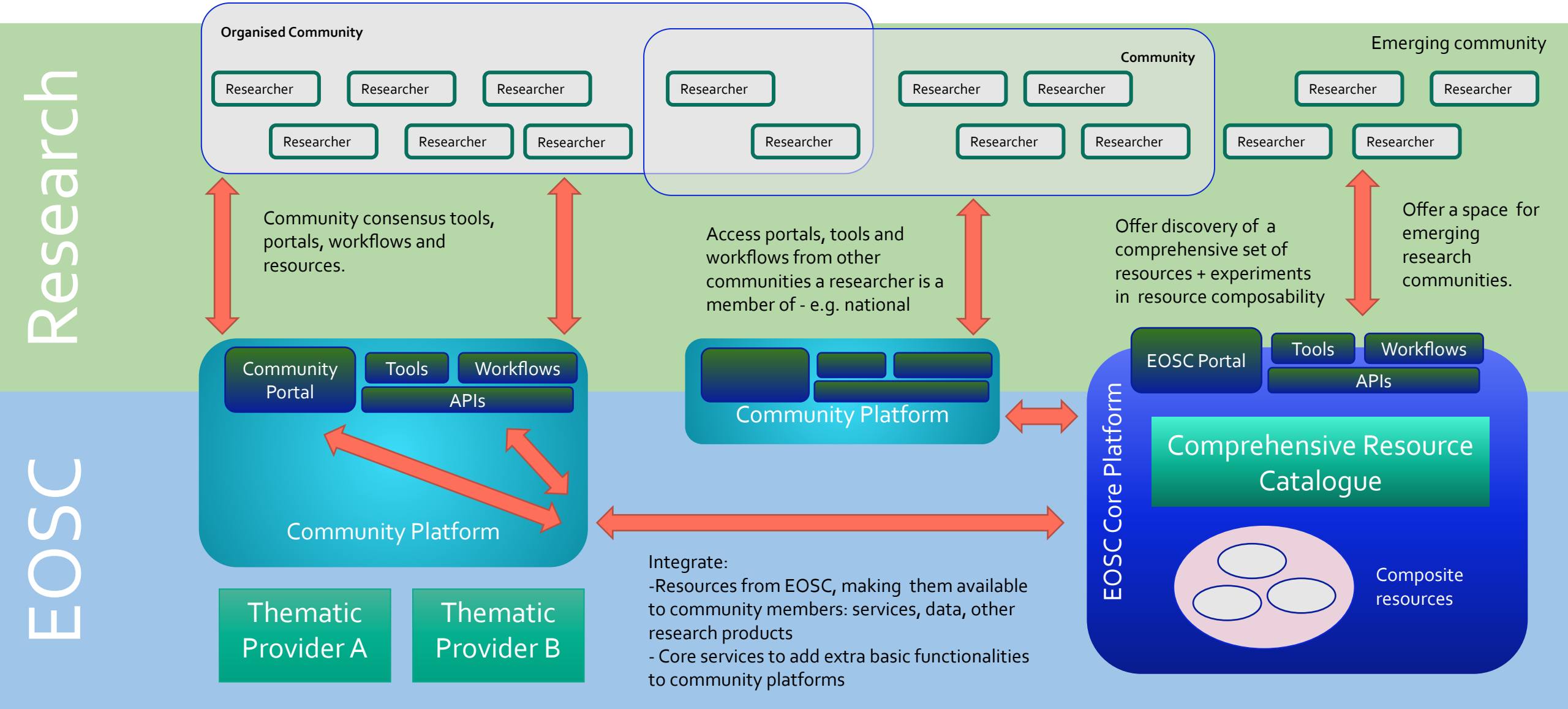
- Core platform
  - Portal
  - AAI
  - Config management
  - Service management
  - Helpdesk
  - Services & research products catalogue
  - …
- Coordination
  - Policies
  - Security
  - …

EOSC Architecture - Exchange

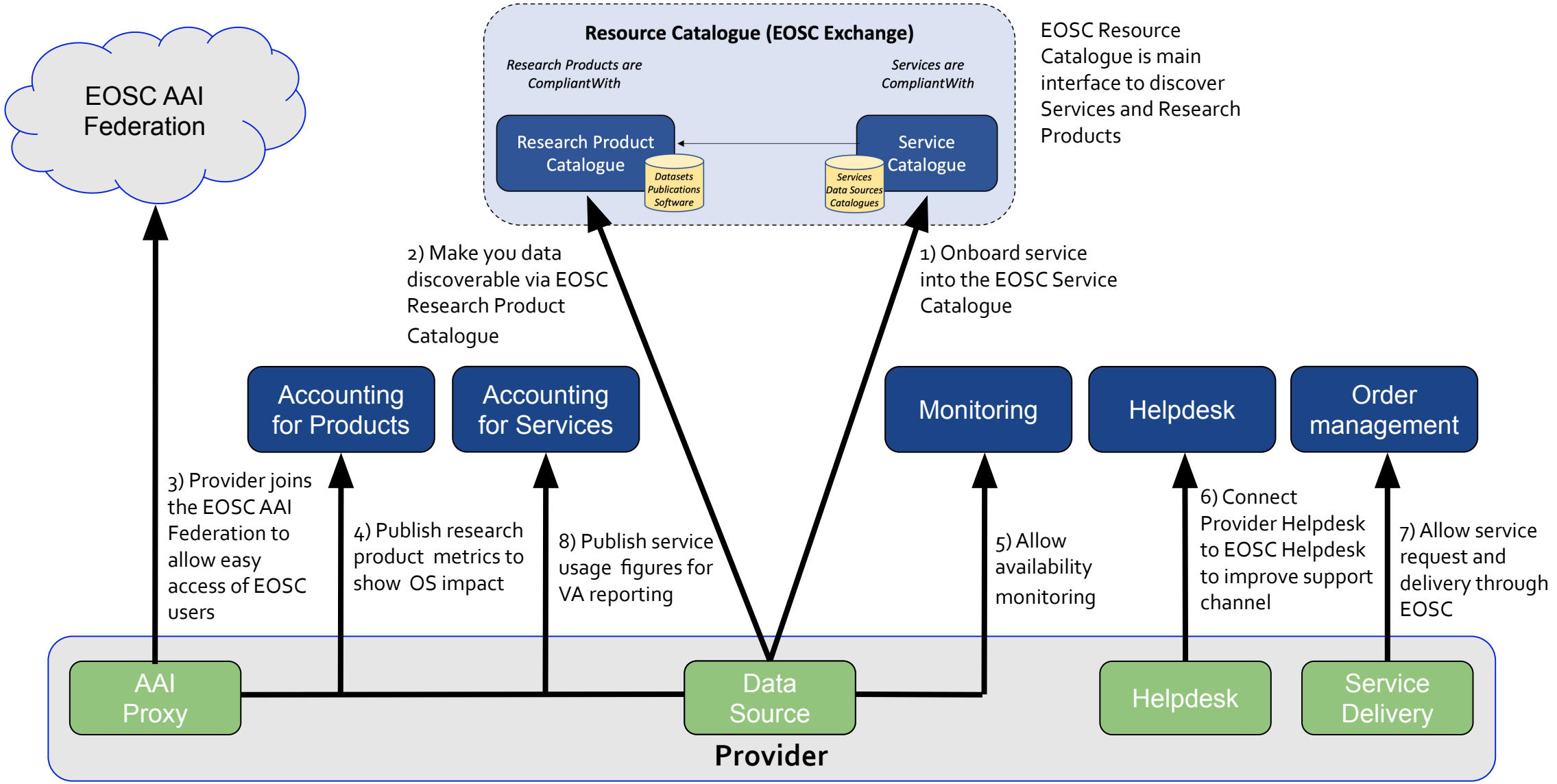


- Community
  - Resources
  - Portal
  - Thematic services
- Horizontal execution layer
  - 07 Projects
  - e-Infra
  - Clusters
  - Community

Community view: different modes of collaboration



Different levels of integration with EOSC Core Platform



EOSC Future High Level Roadmap

User Experience

M6

1. Researchers can access and combine:
   a. EOSC Compute & Storage resources
   b. Horizontal services
2. Researchers can see examples of complex workflows
   a. using multiple resource providers

M18

1. Researchers can orchestrate data analysis on computing resources provided by multiple e-Infra resource providers
2. Integration with researchers' storage systems

M30

1. 'Composability indicators' associated to EOSC resources
2. Researchers can access fully integrated/ end-to-end workflows for various research topics
3. Execution framework

AAI

Christos Kanellopoulos, GEANT

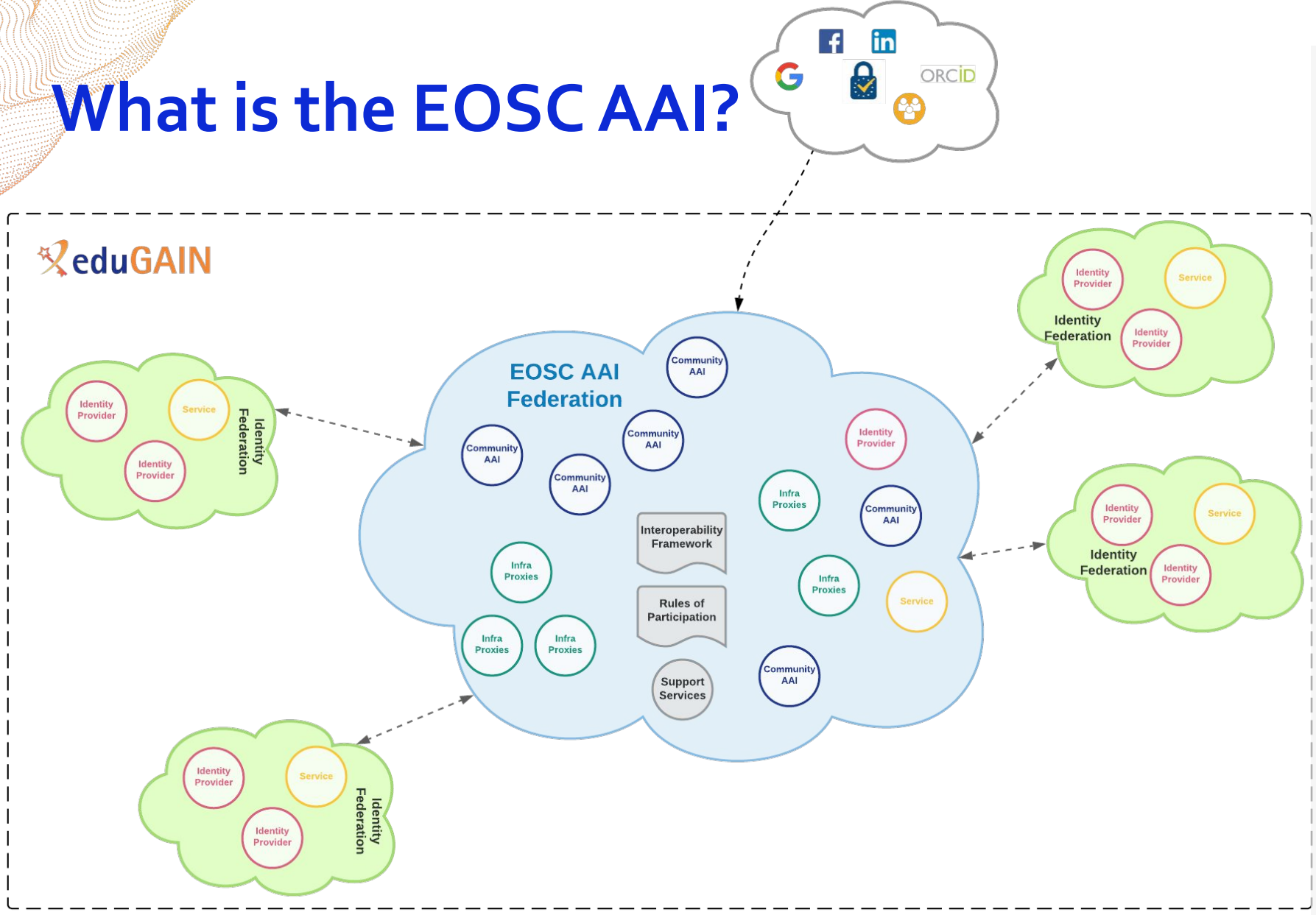
What is the AAI?

- AAI stands for Authentication and Authorization Infrastructure
- Science Clusters, Research Infrastructures and e-Infrastructure Providers have been been implementing their AAIs using the AARC Blueprint Architecture in order to manage their users and the access rights to resources
  - The AARC Blueprint Architecture (BPA) provides a set of building blocks for software architects and technical decision makers who are designing and implementing access management solutions for international research collaborations.

What is the EOSC AAI?

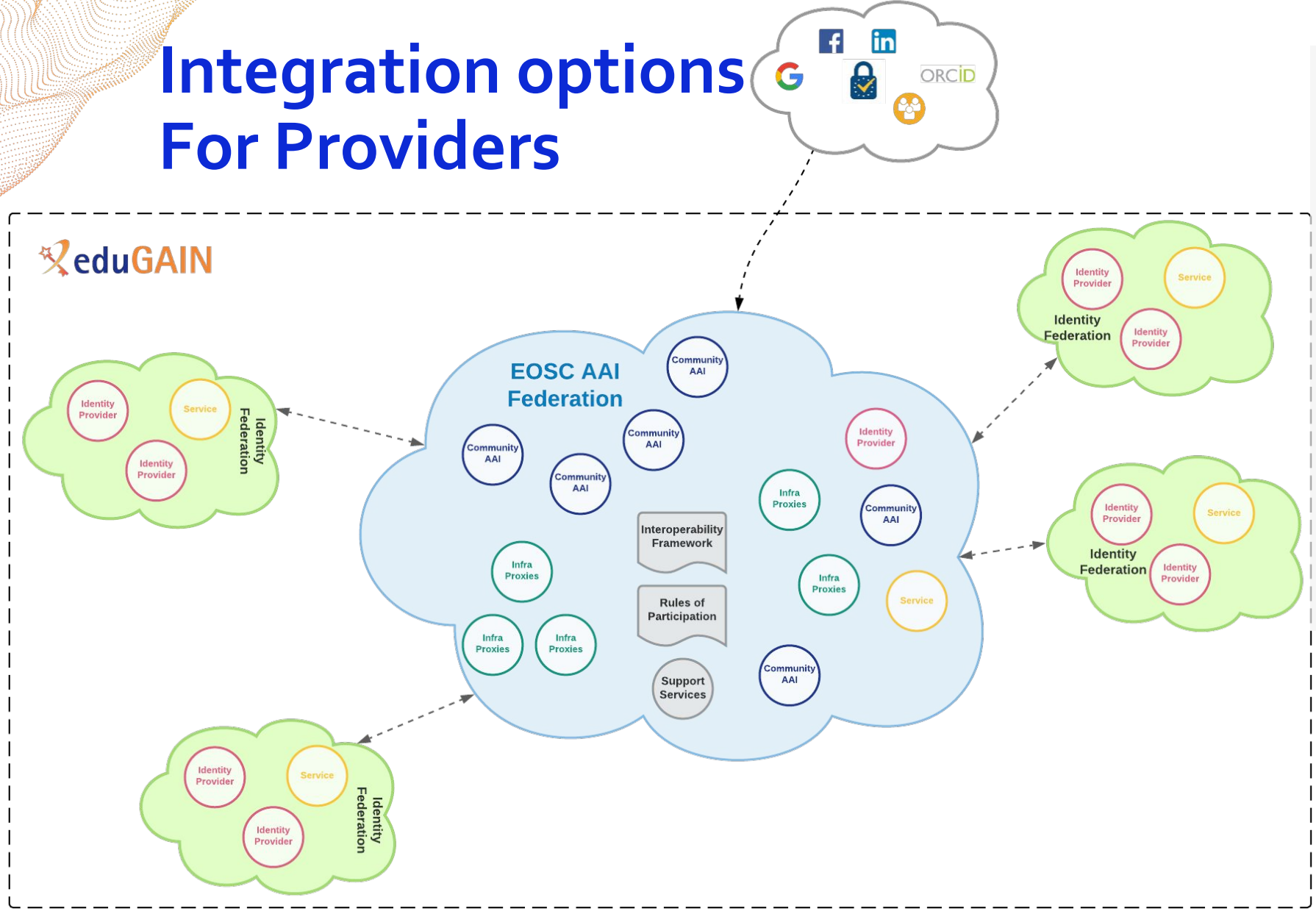
- The goal for the EOSC AAI is to provide the trust mortar with which we join the many bricks of the current set of scientific communities, collaborations and infrastructures together.
    - *The term "EOSC AAI" has sometimes been interpreted as a singular instance of the EOSC AAI Architecture. Nothing could be further from the truth. The EOSC AAI is a set of principles and governance structures for how the architecture evolves and grows over time.*
- The EOSC AAI is comprised of the AAIs of the Science Clusters, Research Infrastructures and e-Infrastructure Providers, which are being brought together through the EOSC AAI Federation

What is the EOSC AAI?



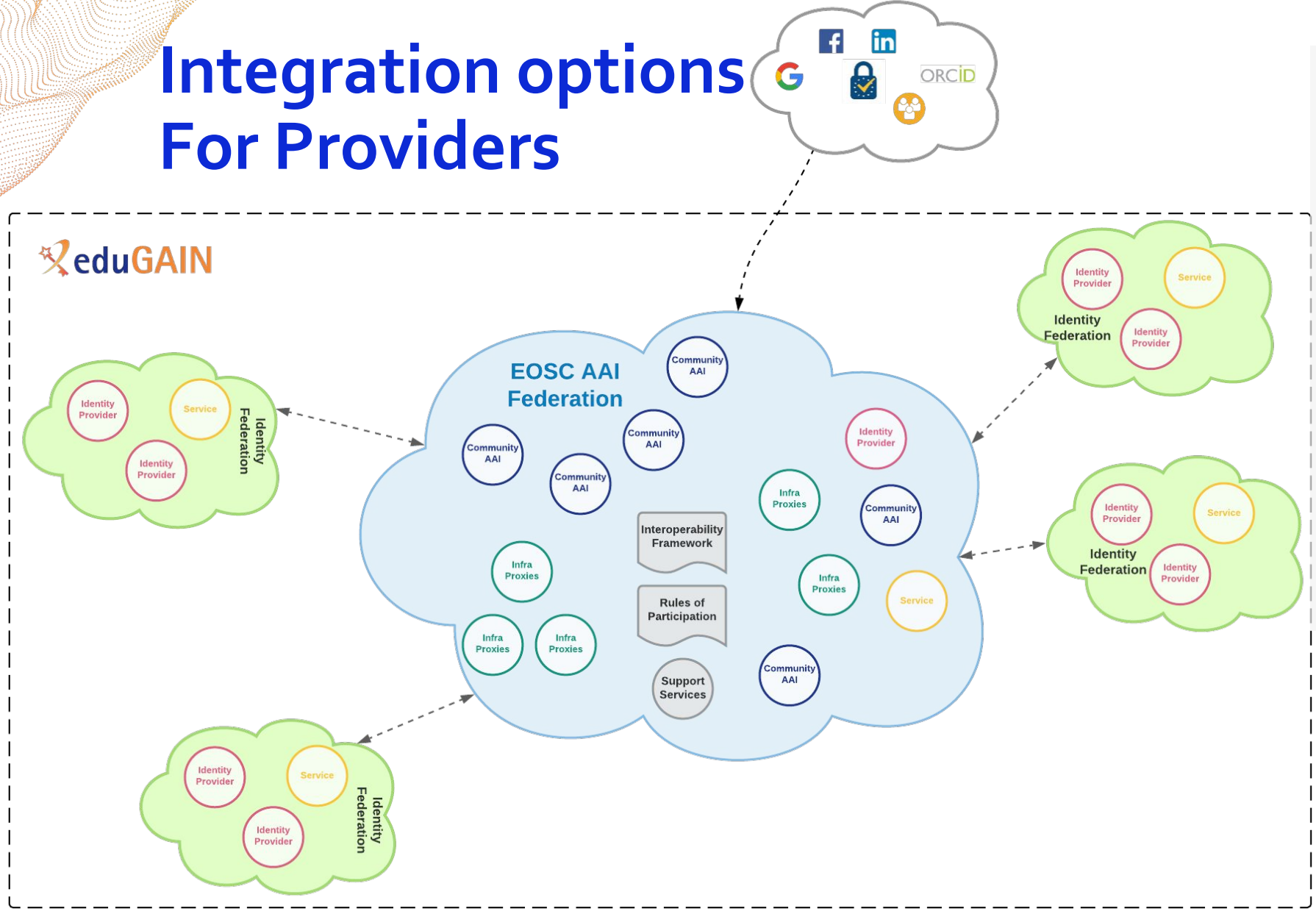
- Community AAIs and Infrastructure Proxies connect once with the EOSC AAI Federation (register metadata, URN namespaces, policies etc)
- Technical interoperability conformance tested and monitored by the EOSC AAI Federation.
- GDPR and Security Policy conformance (Policy Notices, Acceptable Use Policy etc) assessed by the EOSC AAI Federation.
- Community AAIs and Infrastructure Proxies discovery and establish trust with the rest of the Community AAIs and Infrastructure Proxies through the EOSC AAI Federation
- The EOSC AAI Federation participates in the eduGAIN Inter-Federation to discovery and establish trust with Identity Providers and Services Providers that the EOSC AAI Federation requirements

Integration options For Providers



National Academic Federations

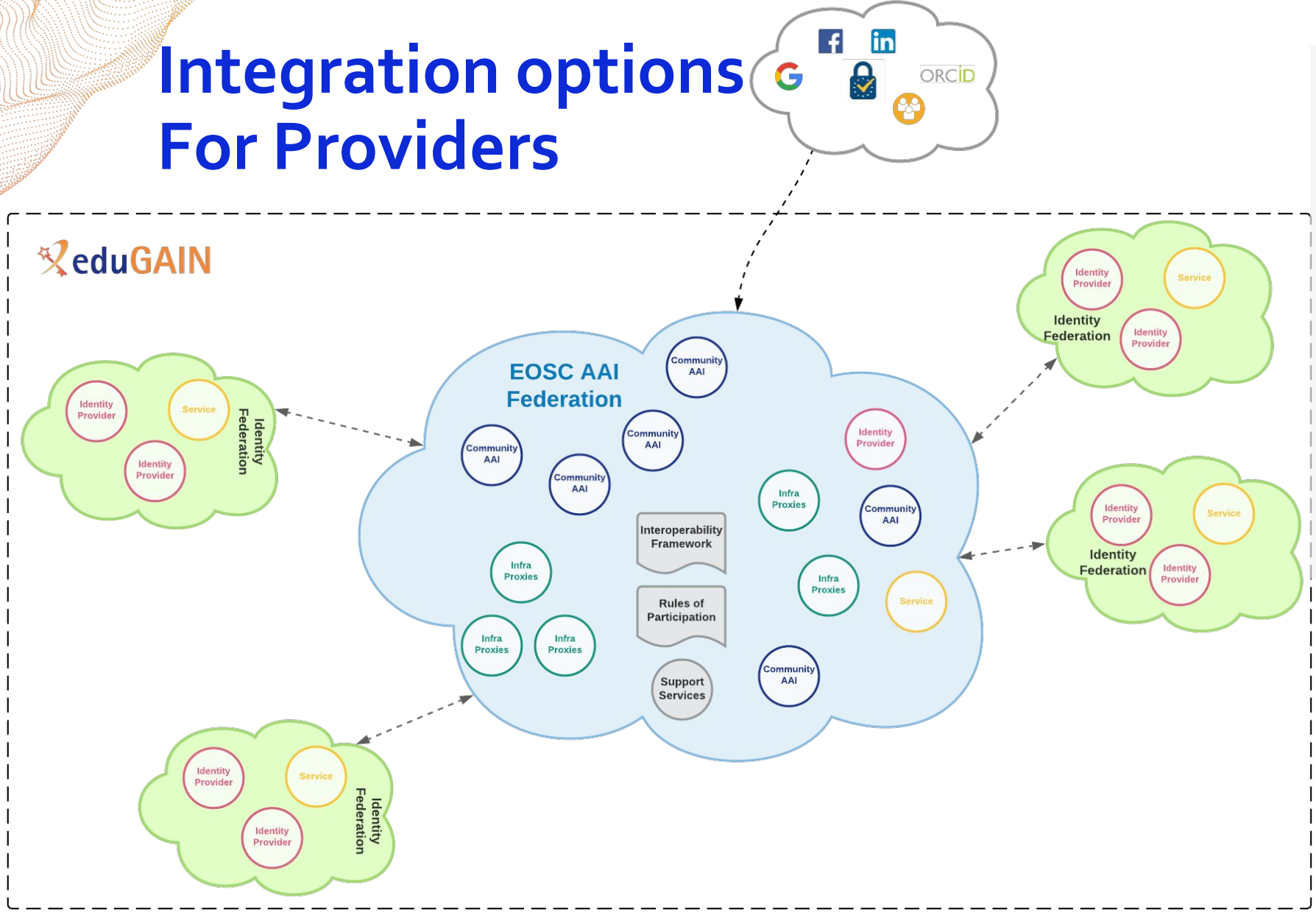
Integration options For Providers



National Academic Federations

Infrastructure Proxies operated by Research Infrastrures

Integration options For Providers



National Academic Federations

Infrastructure Proxies operated by Research Infrastrures

Infrastructure Proxies operated by e-Infrastrures

EOSC AAI Roadmap

- October 2022
  - The EOSC AAI Federation is fully operational. EOSC AAI e-Infrastructure SP-proxies and cluster community AAIs fully integrated to EOSC AAI Federation. Community AAIs can integrate.
  - Initial technical guidelines to connect IdP and AAI proxies from public and private sector service providers to the EOSC Federated AAI
  - Use case: A researcher from PaNOSC can access an ESCAPE resource with the PaNOSC (UmbrellaID) identity. Cross Research Infrastructure Access.

EOSC AAI Roadmap

- October 2023
  - A researcher can do the full lifecycle of data processing, storage, analysis, and publishing supported by resources available and transparently integrated through EOSC.
  - Community AAIs seamless integration with EOSC AAI federation through self-service onboarding.
  - Technical interoperability guidelines for supporting cross-sector access to the EOSC Federated AAI.

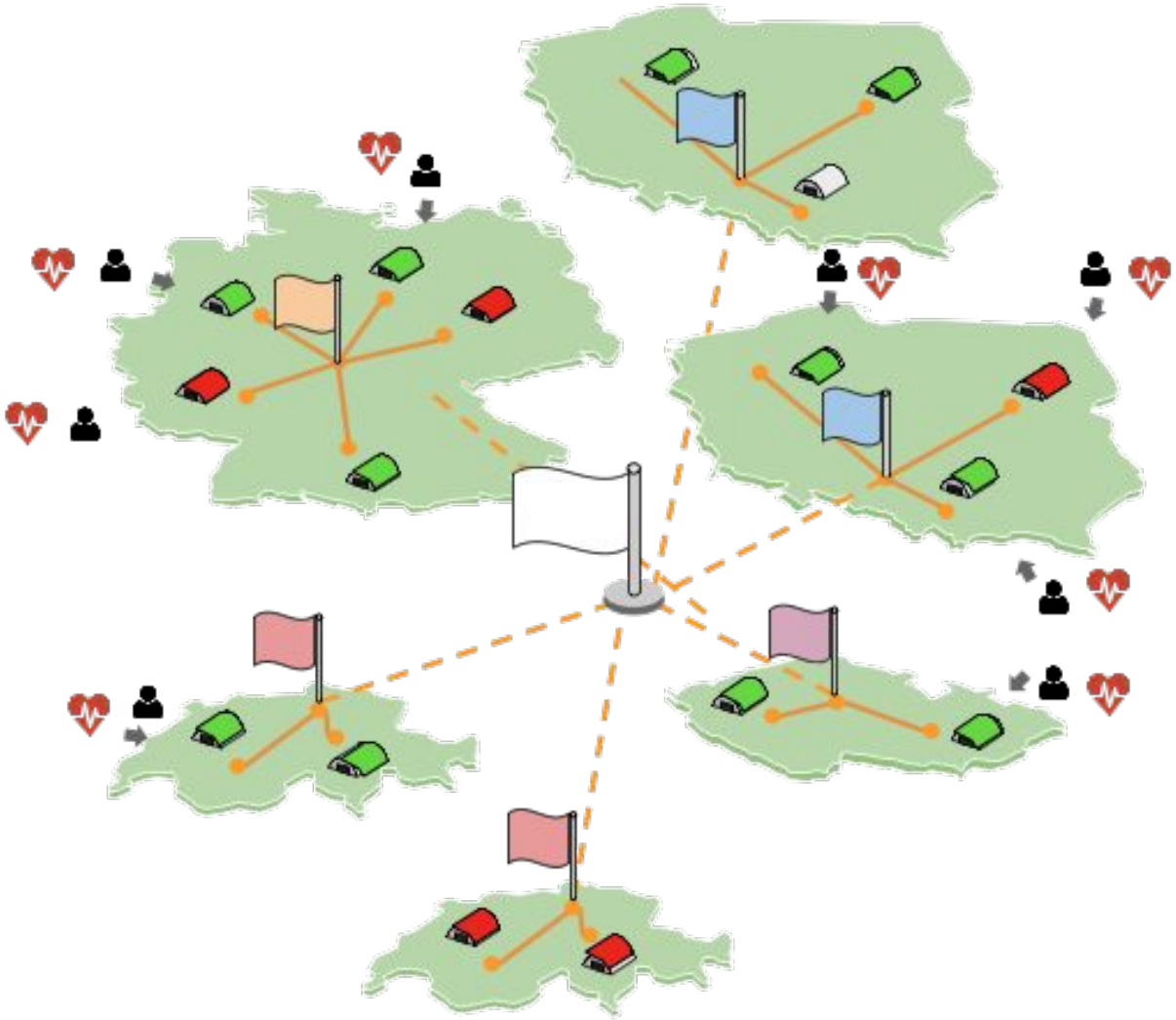
Monitoring

Kostas Koumantaros, GRNET

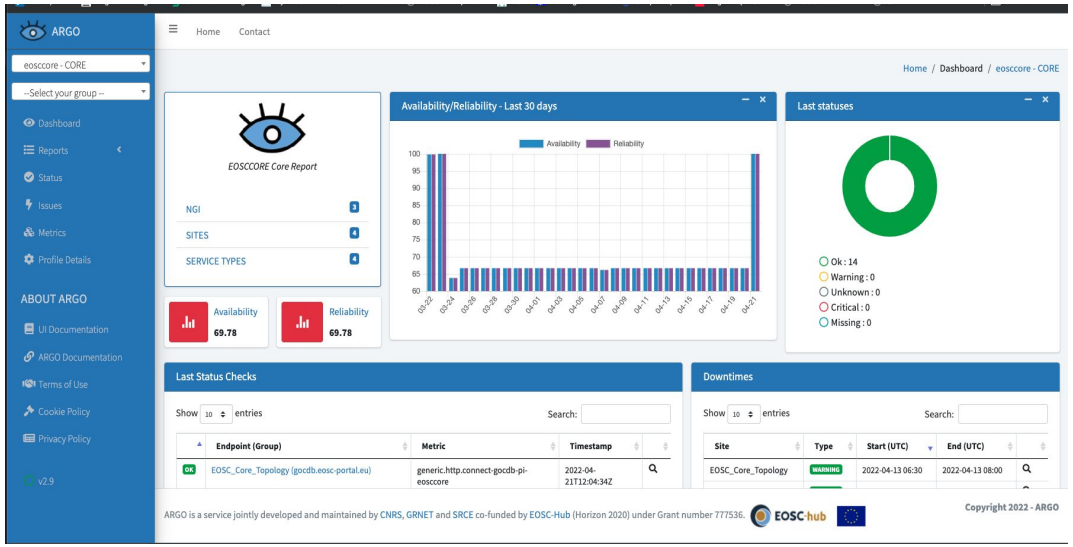
EOSC Monitoring Service

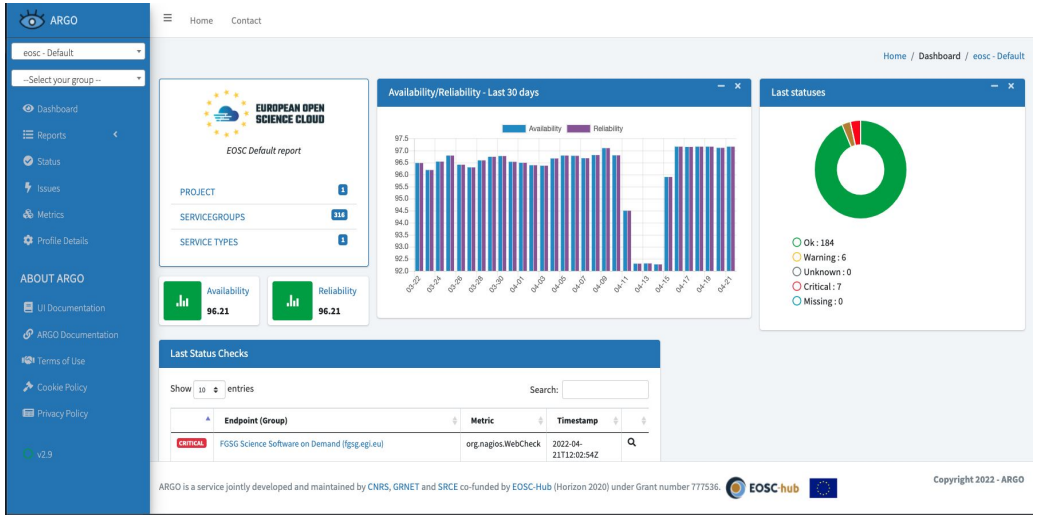
EOSC Monitoring Service is trying to emulate the user behaviour and constantly monitor the Services to provide:

- Real time status reports
- Availability and reliability reports
- Real time alerts



EOSC Monitoring





EOSC Core Monitoring

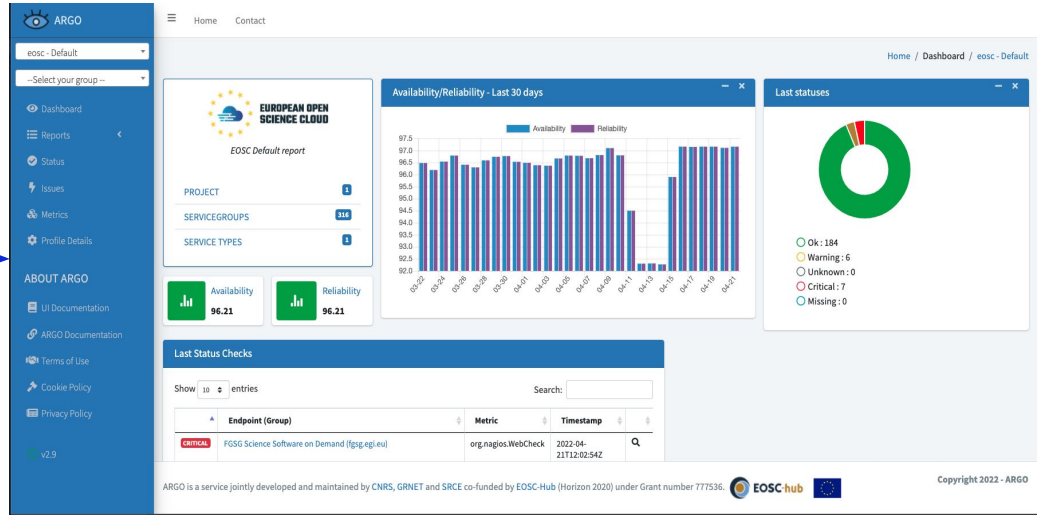
https://eosccore.ui.argo.grnet.gr/

EOSC Exchange Monitoring:

https://argo.eosc-portal.eu/

Integration Option 1

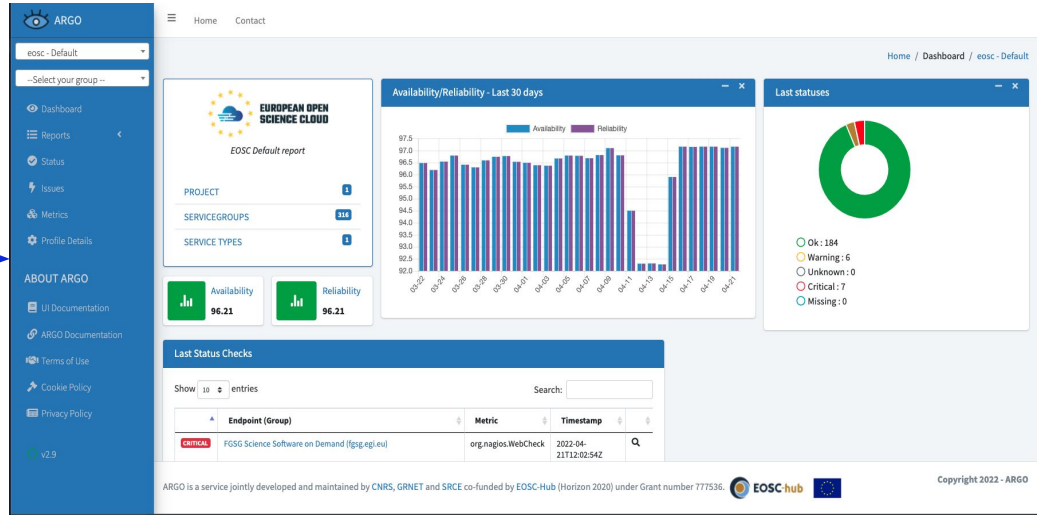
Monitor an Onboarded Service (central one)



https://argo.eosc-portal.eu/

Integration Option 2

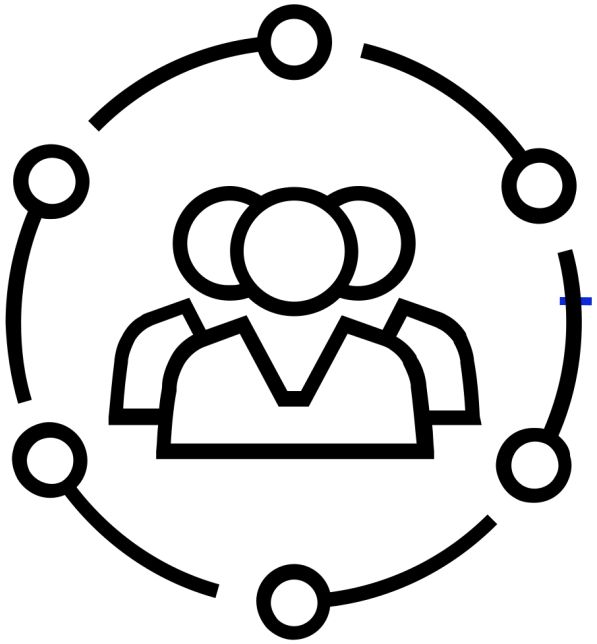
Monitor an Infrastructure (community)



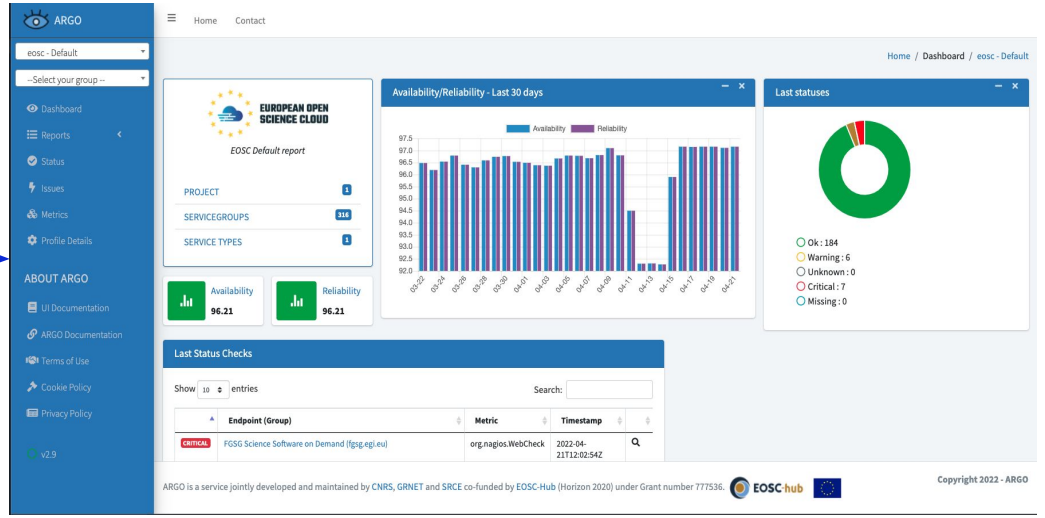
Community Instance

Integration Option 3

Integrate External Monitoring service



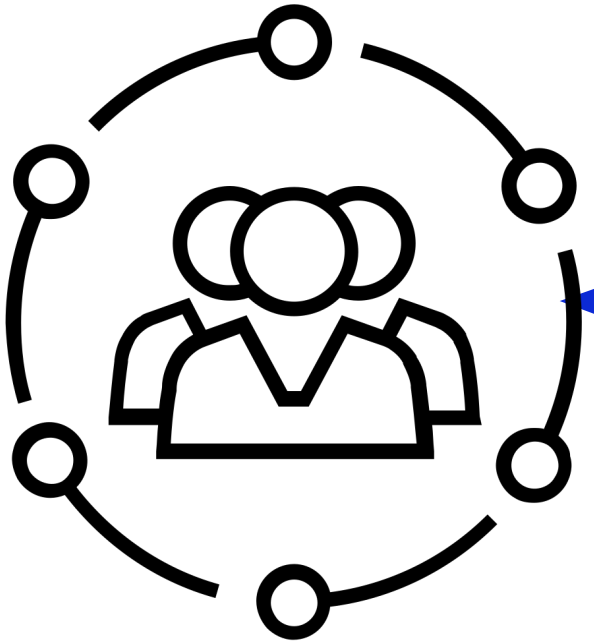
Predefined data



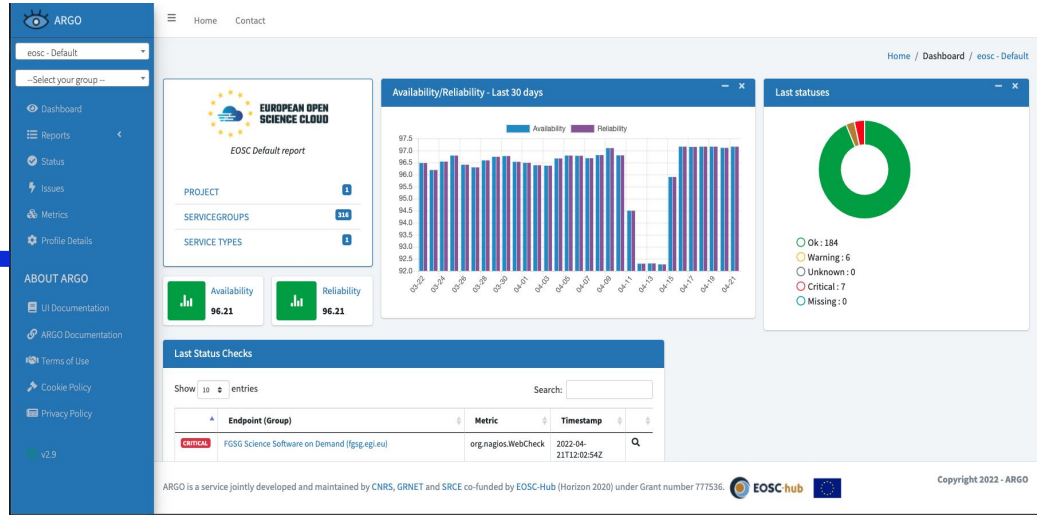
Instance

Integration Option 3

Third-party services exploiting EOSC Monitoring data



API for A/R Results
API for Status Results
Real Time status results via AMS



EOSC-Exchange Monitoring

RoadMap

- Allows checking of services based on availability of their web pages/endpoints. Can support better integration via specific metrics. (Oct 22)
- Automated/self-service integration of monitoring probes and metrics offered to providers. Monitoring can track availability and reliability and accounting of usage based on parameters in provider and resource profiles (location, sector, organisation type). (Sep 22)
- Automated monitoring includes automated thresholds, raising issues, or alarms in the Service Management System based on results. (Sep 23)

Documentation & Contact Info

- Documentation: https://argoeu.github.io/argo-monitoring/
- Contact: https://eosc-helpdesk.eosc-portal.eu

Accounting for Services

Kostas Koumantaros, GRNET

Accounting for Services (WiP)

One of the major gaps identified is the need to aggregate, exchange and visualise Virtual Access (VA) metrics between different e-infrastructures, service providers and INFRAEOSC-07 projects so that they can be presented to different Stakeholders (Service Providers, EC Projects,Research Communities, EC and Consumers/Researchers)

- Define VA Accounting record format:
  - Should likely hold as a minimum: KPIs, description/definition of the KPIs, time period, service type, service endpoint, service provider
  - Should be in a machine-readable format (e.g. JSON, XML)
- Define VA Accounting Transport/ API Architecture:
  - Should be able to accept input from a number of different sources (eg. all INFRAEOSC-07 projects)
  - Should be able to offer VA accounting records to a number of different clients - dashboards (external or internal)
- Define VA accounting storage and analysis mechanism:
  - Should be scalable
  - Should make basic associations between metrics and providers;
- Define a presentation layer for the VA accounting for:
  - Service providers
  - EC/projects/officials
  - Consumers

Accounting for Services - Model

METRICS DEFINITIONS | METRICS UNITS | METRICS TYPE

Metrics Definitions

Add a new metric definition

Show 10 entries

Search:

Metric Name	Metric Description	Unit	Metric Type	Actions
apirequests.nexus	null	API reqs	aggregated	Actions
datasources.nexus	null	#	aggregated	Actions
datatransferred.nexus	null	TB	aggregated	Actions
gateways	null	#	aggregated	Actions
messagesperday	# of messages per day for AMS	#	aggregated	Actions
metric_test	description	#	aggregated	Actions

Return to the list of Metric definitions

METRICS TABLE | CHART

Metrics Table

Show 10 entries

Search:

Resource Id	Start	End	Value
msg-devel.argo.grnet.gr	2022-01-05T09:13:07Z	2022-01-05T09:14:07Z	900.0
msg-devel.argo.grnet.gr	2022-01-06T09:13:07Z	2022-01-06T09:14:07Z	1000.0
msg-devel.argo.grnet.gr	2022-01-07T09:13:07Z	2022-01-07T09:14:07Z	2000.0
msg-devel.argo.grnet.gr	2022-01-08T09:13:07Z	2022-01-08T09:14:07Z	3000.0
msg.argo.grner.gr	2022-02-01T00:00:00Z	2022-02-01T23:59:59Z	300.0
msg.argo.grner.gr	2022-02-02T00:00:00Z	2022-02-02T23:59:59Z	301.0
msg.argo.grner.gr	2022-02-03T00:00:00Z	2022-02-03T23:59:59Z	302.0
msg.argo.grner.gr	2022-02-04T00:00:00Z	2022-02-04T23:59:59Z	303.0
msg.argo.grner.gr	2022-02-05T00:00:00Z	2022-02-05T23:59:59Z	304.0
msg.argo.grner.gr	2022-02-06T00:00:00Z	2022-02-06T23:59:59Z	305.0

Showing 1 to 10 of 23 entries

Previous 1 2 3 Next

Accounting for Services (WiP)

Proof of Concept available at https://acc.devel.argo.grnet.gr/

The PoC supports

- OIDC to handle Authentication/Authorisation
- Support the capability to Create/Update/Delete Metric Definitions
- Support the capability to Create/Update/Delete Metrics

Road Map

- Demo Instance Available by June 2022
- Beta Version Available by September 2022

Accounting for Research Products

Andreas Czerniak, Bielefeld University Library

Accounting for Research Products

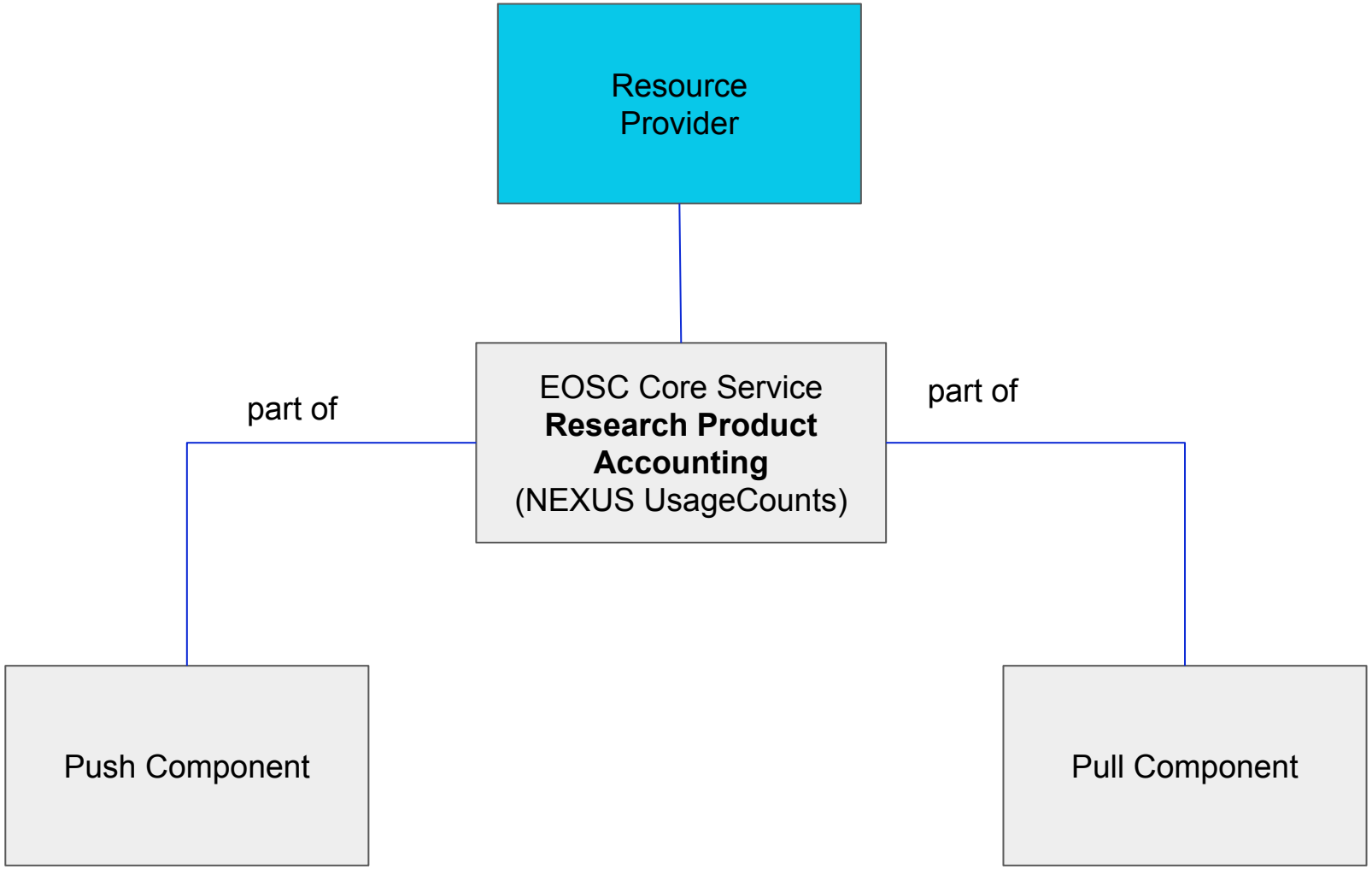
- Research Products accounting service is able to aggregate (push and pull) usage indicators for different types of EOSC research products, like datasets, articles, books, etc.

- Collects usage data or usage statistics reports for EOSC research catalogue products and from the distributed network of Providers using **open standards and protocols**

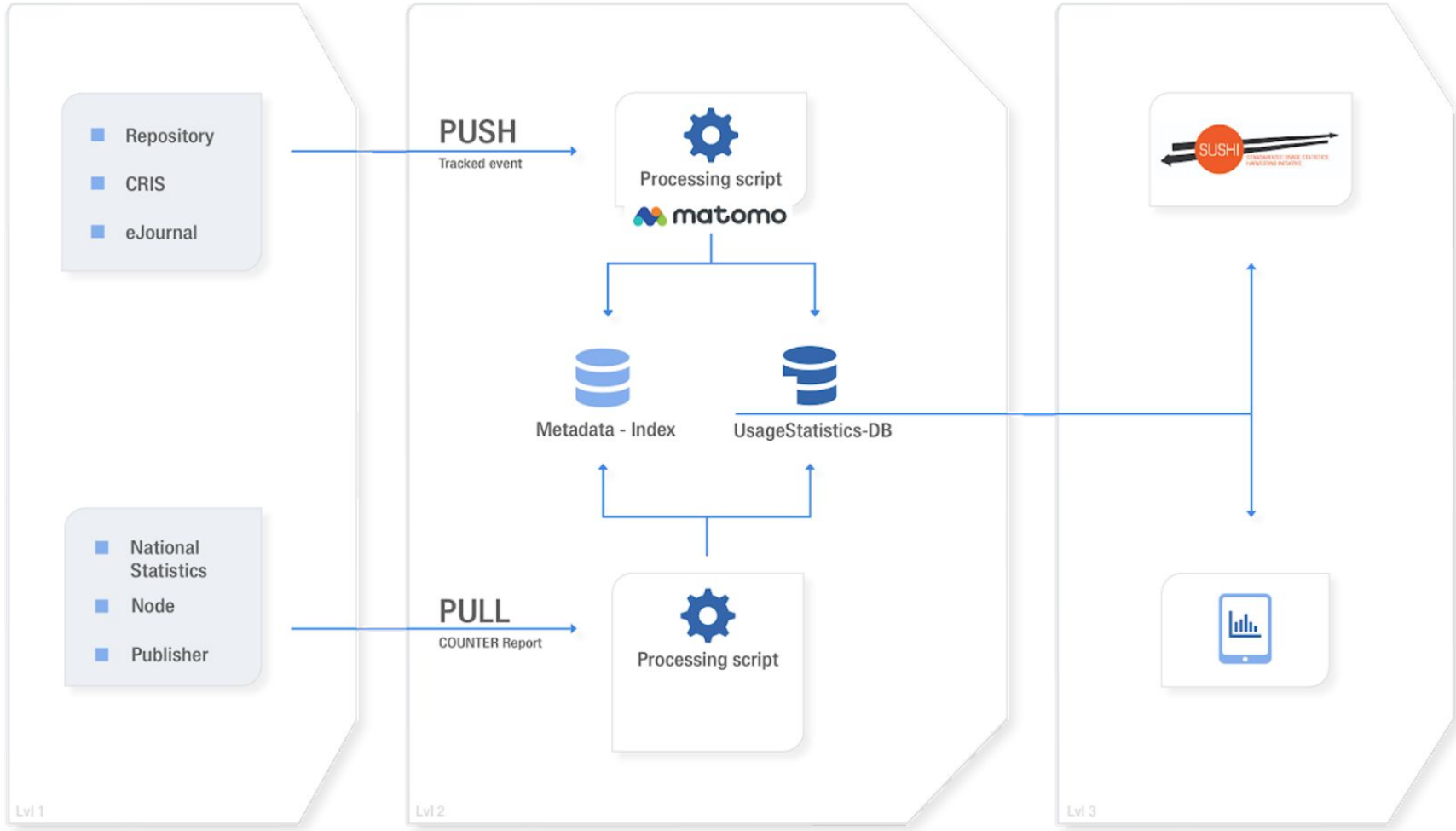
- Generates reliable, consolidated and comparable usage metrics, compatible with the ***COUNTER*** *Code of Practice* standards

- Research Products accounting is provided by OpenAIRE UsageCounts Service

Accounting for Research products



Accounting for Research products Architecture



Accounting for Research Products FactSheet

- Statistics on usage activity of Research Products
- Provision of standardized usage statistics reports via SUSHI-Lite API
- Complements existing citation mechanisms and assists stakeholders like (institutional repository managers, research communities, research organizations, funders, and policy makers) to track and evaluate research from an early stage
- Enrichment of EOSC Resource Catalogue with usage statistics indicators visible to end-users

Accounting for Research Products Roadmap

- WP4
  - M18: Usage statistics for datasets (views, downloads) will be collected and made available.
  - M18: Research Product Usage Stats integrated with EOSC Resource Catalogue

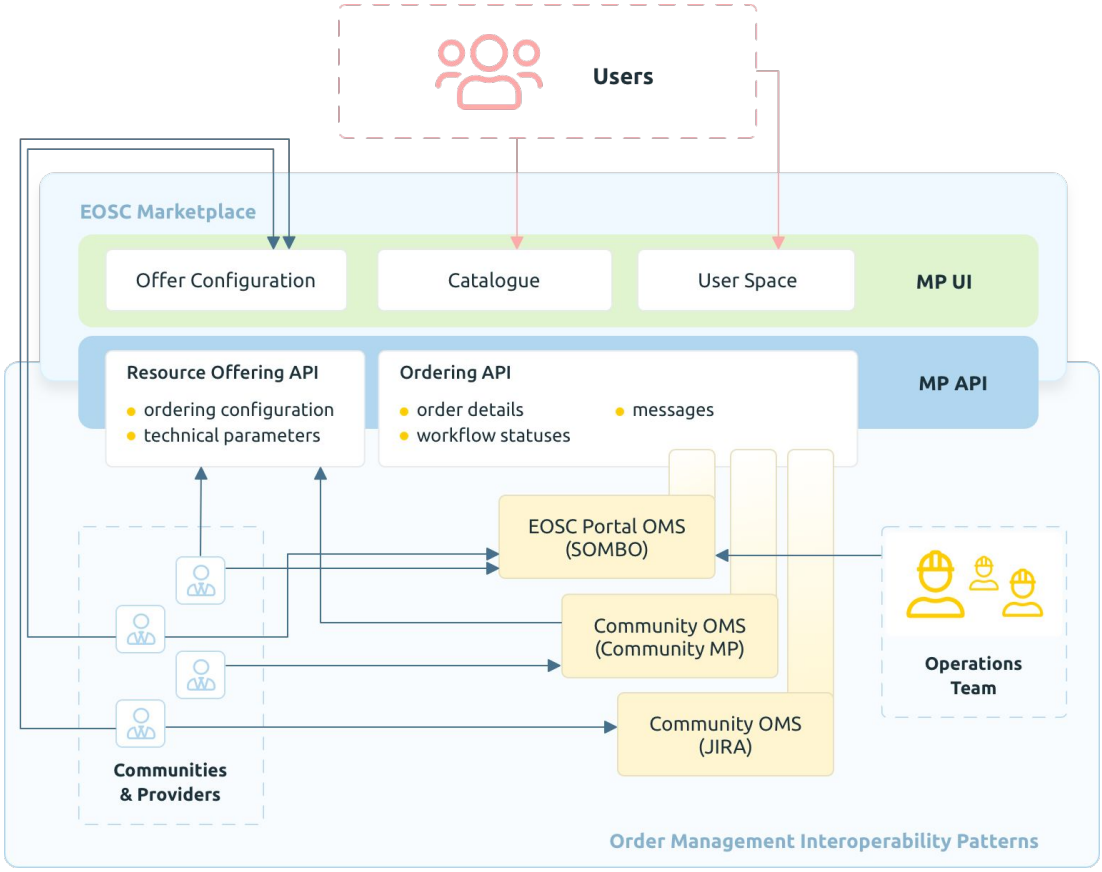
Order Management

Roksana Wilk, Cyfronet

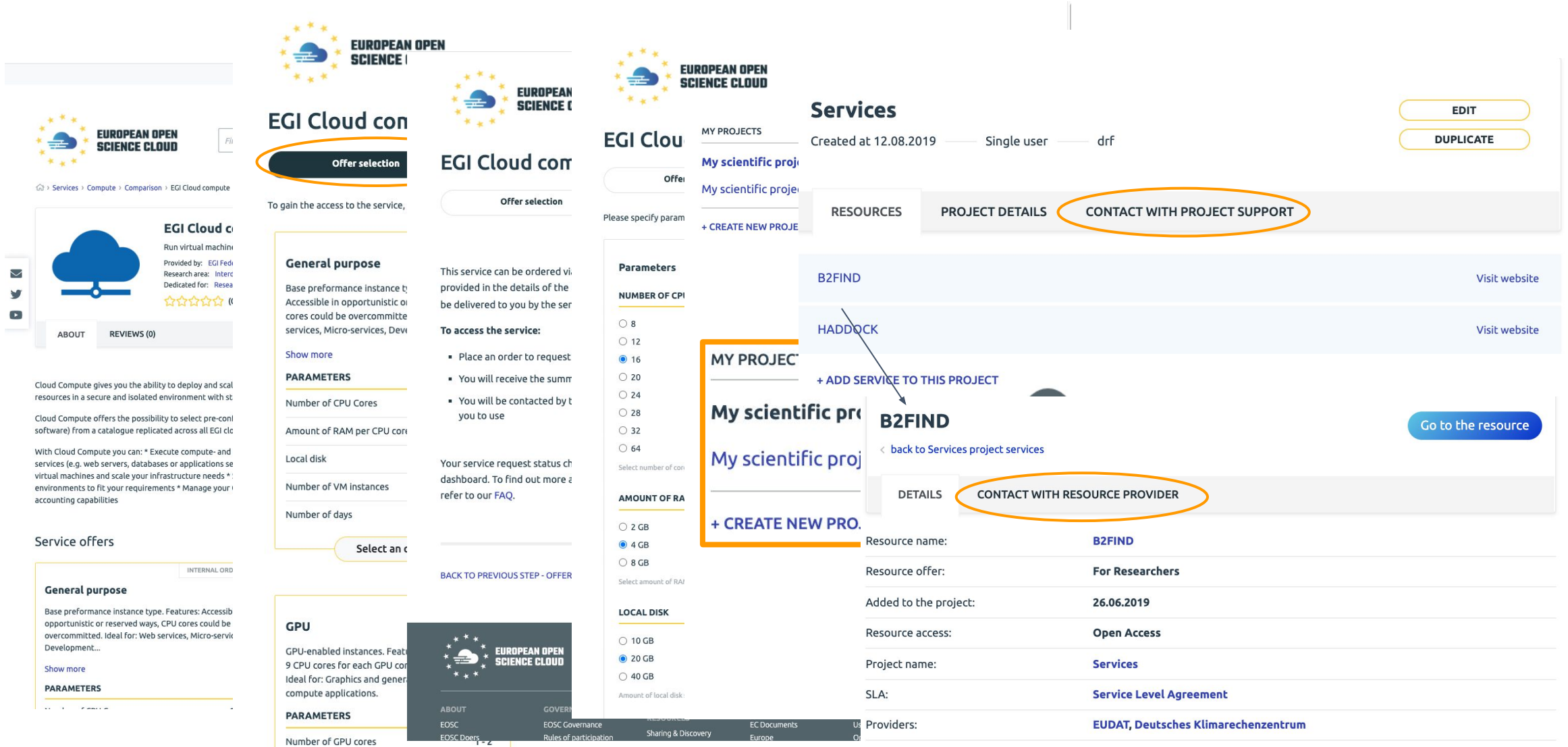
What is it all about

- For EOSC Exchange **providers** and **provider communities** to attract, support and serve the EOSC users

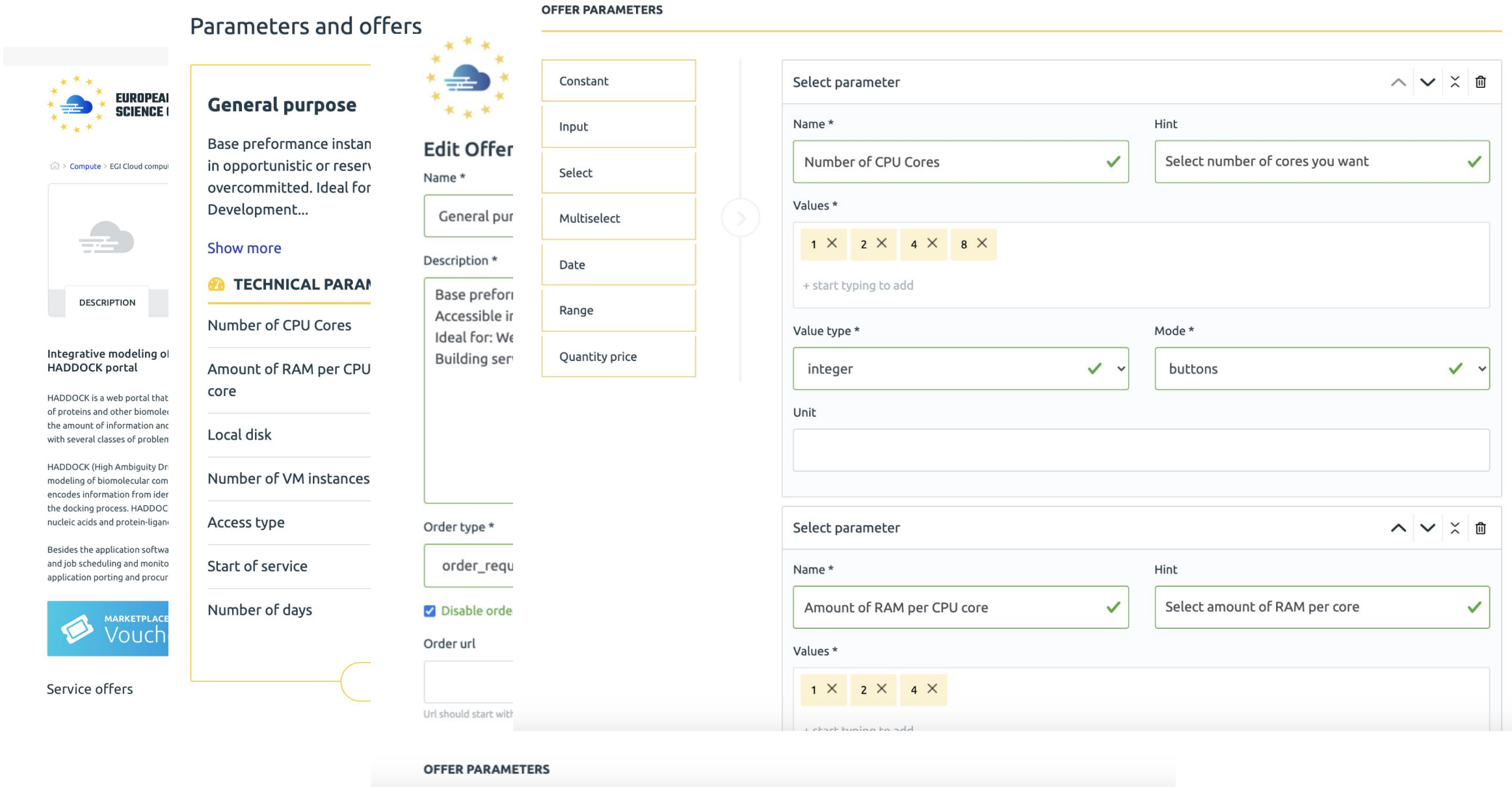
- For **EOSC users** a unified channel to discover, access, order and compose EOSC Resources gaining support from their providers



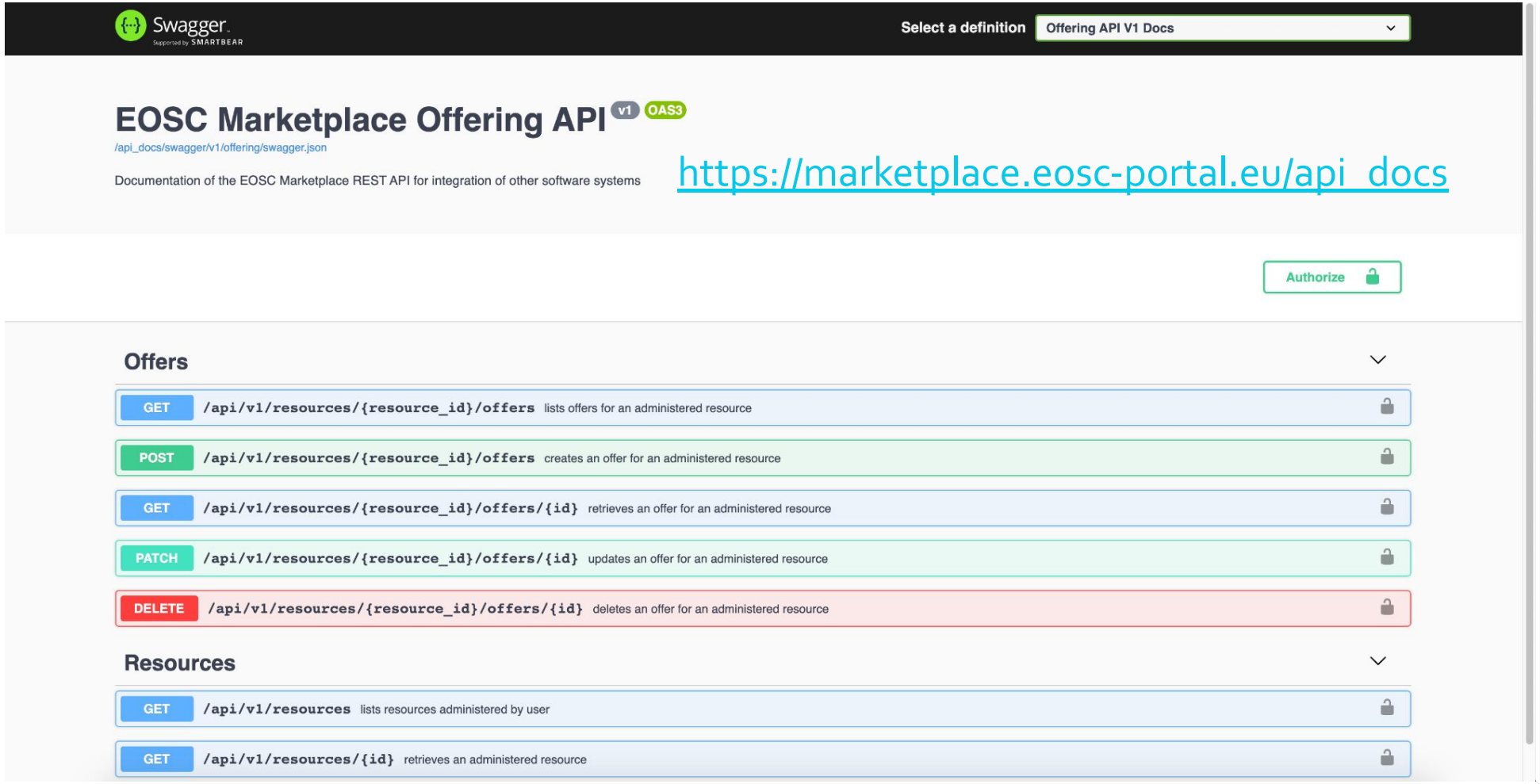
User’s perspective



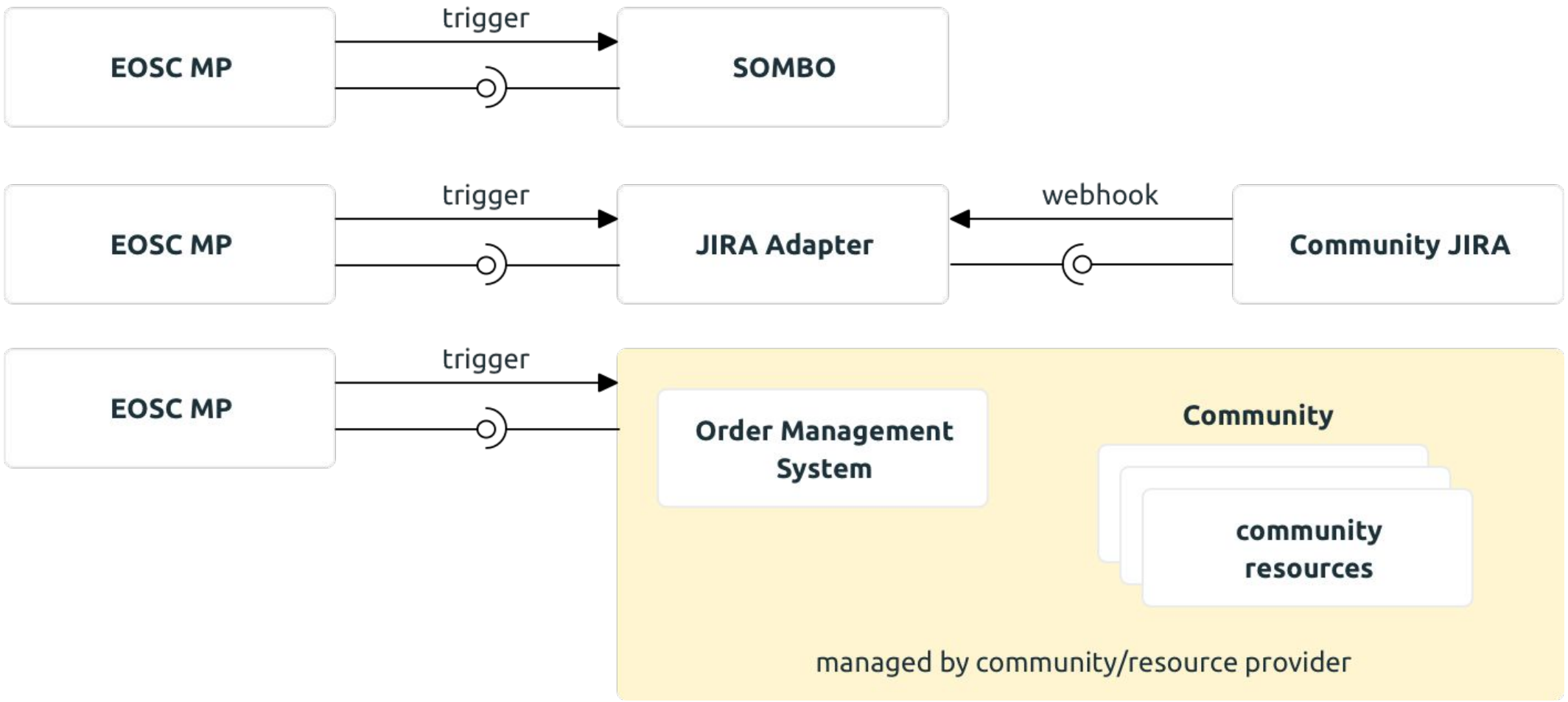
Provider’s perspective



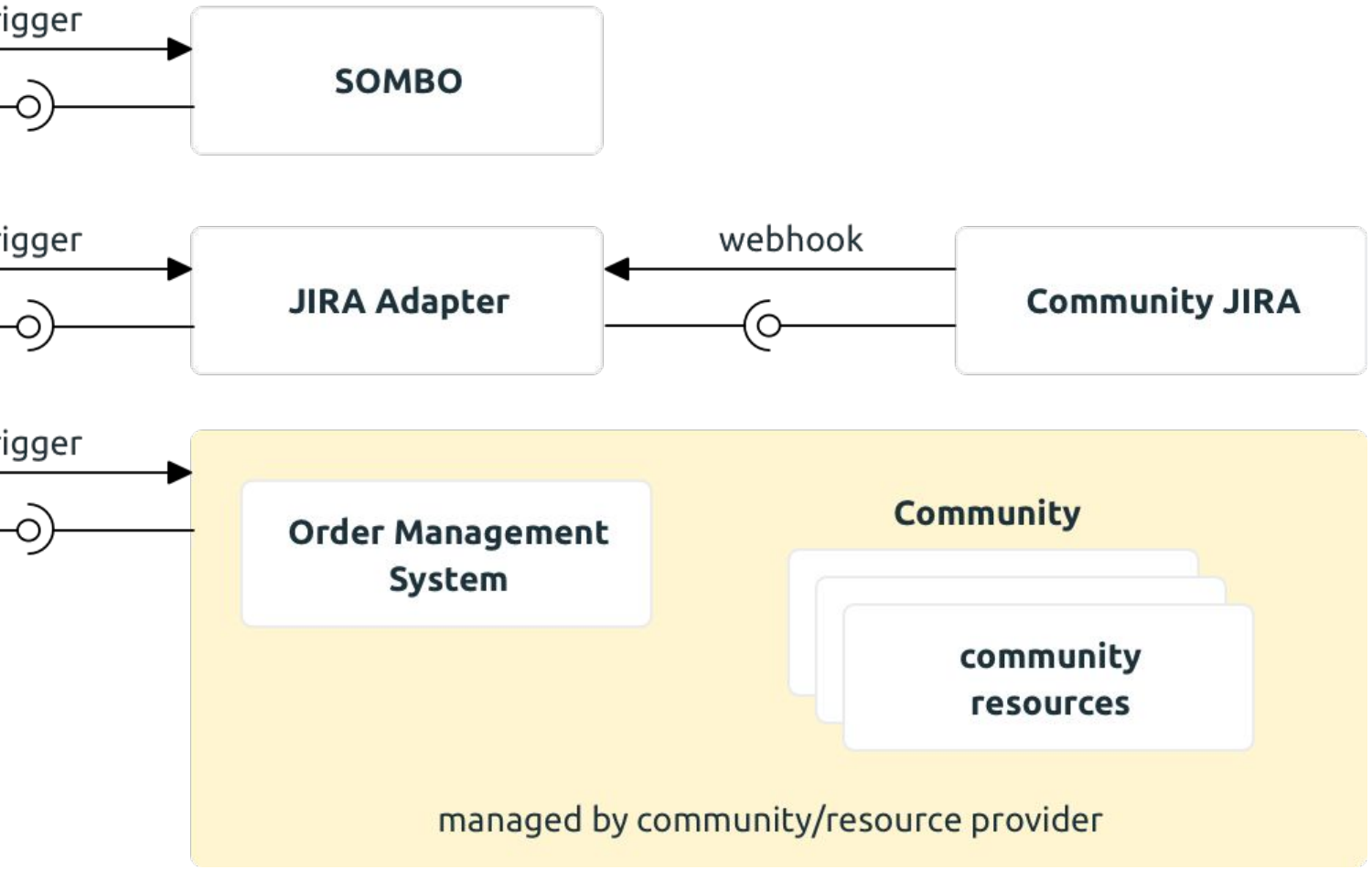
Offering API



Order Management interoperability patterns



Order management interoperability patterns



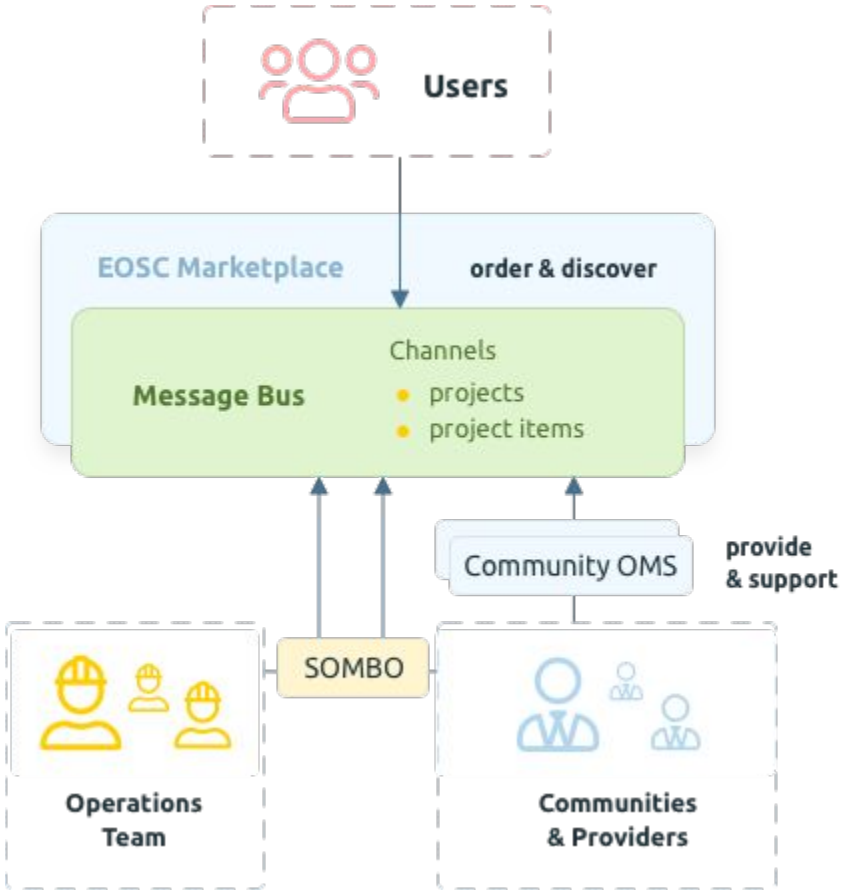
The back-office service resource orders management with no adoption cost

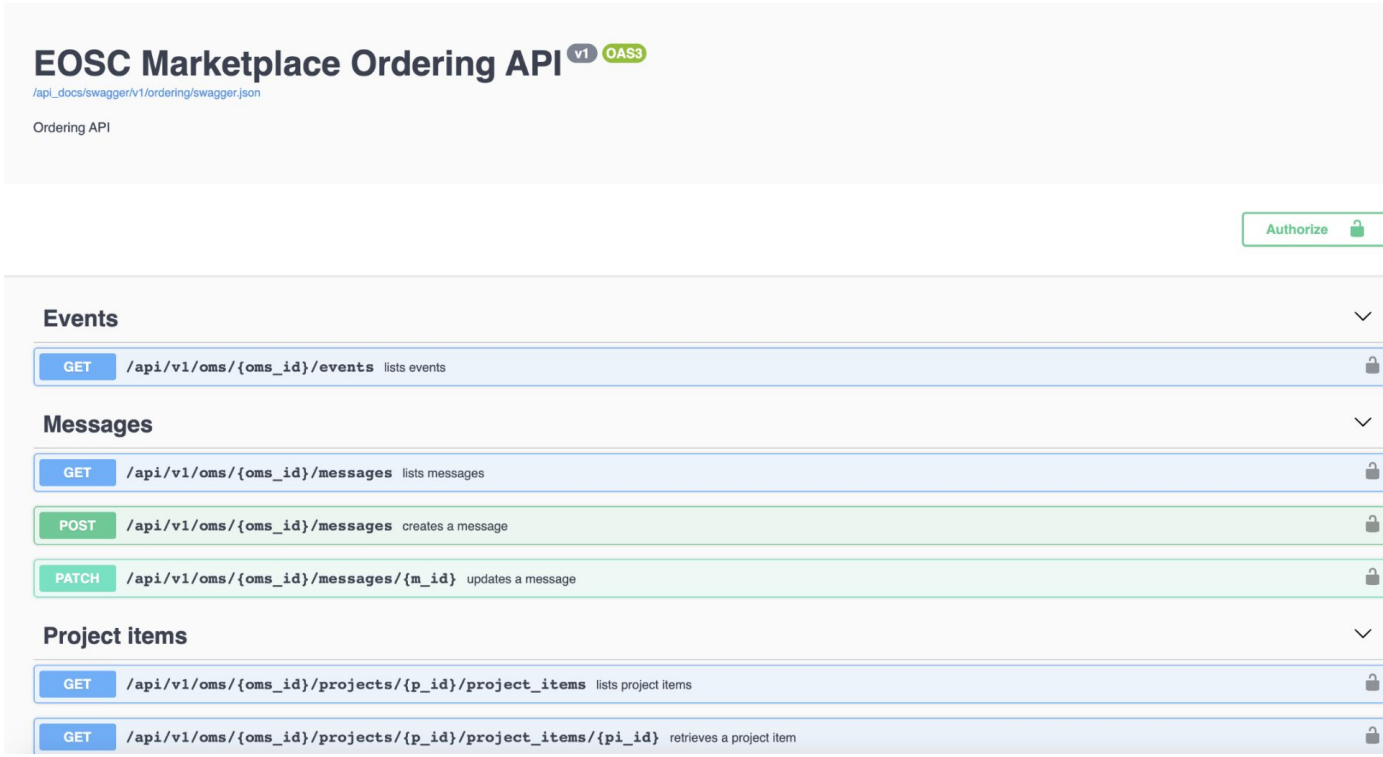
On-premise Jira integration - a reference for other integrations

Tailor-made provider / community order management system - with the use of REST API, or a reference Python client

Support for custom order processing workflows

Integration V3 with the ordering process





EOSC Order Management: The Future

NEXT STEPs

- **Virtual Access and other procurement models support**
- **EOSC Service Accounting Integration**
- **EOSC Service Monitoring Integration**

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a.pulapa@cyfronet.pl

M30

1. 'Composability indicators' associated to EOSC resources
2. Researchers can access fully integrated/ end-to-end workflows for various research topics
3. Execution framework

EOSC Helpdesk

Pavel Weber, KIT

EOSC Helpdesk

- The **Helpdesk** in the EOSC ecosystem is a backbone service which facilitates:
  - Instant communication
  - Proactive support for EOSC customers/users
  - Stable operation of EOSC Services
  - Support for the users of EOSC service providers and research communities

EOSC Helpdesk

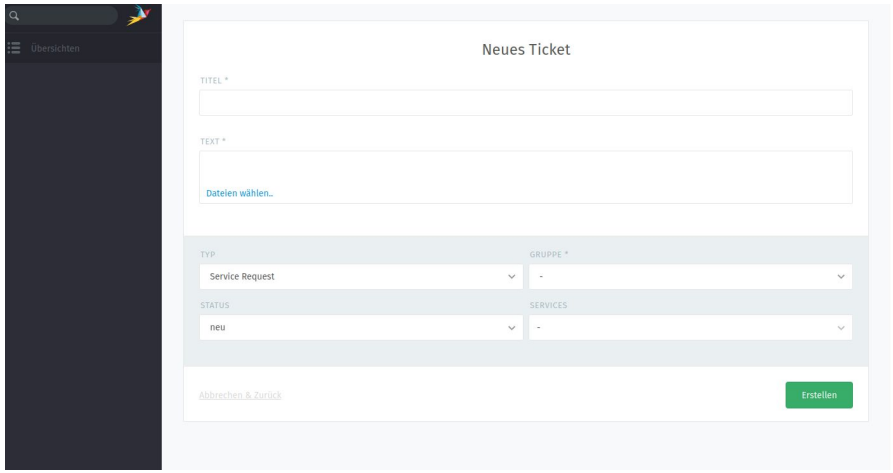
Reference card

Helpdesk URL	https://eosc-helpdesk.eosc-portal.eu
Helpdesk Email	eosc-support@scc.kit.edu
Helpdesk page in EOSC Portal	https://eosc-portal.eu/contact-us
Interoperability guidelines	Confluence wiki

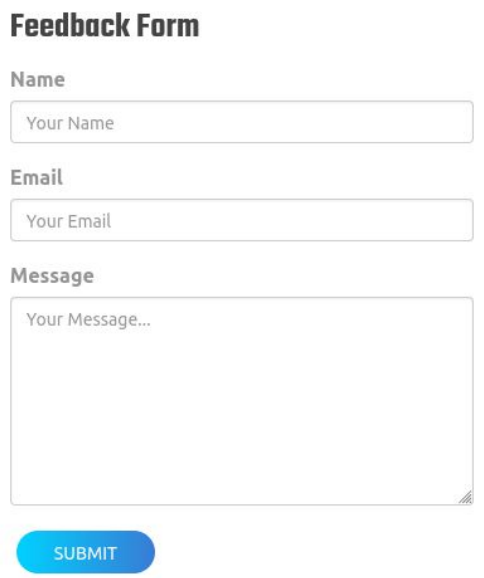
EOSC Helpdesk: Ticket Submission

Email

Helpdesk Dashboard



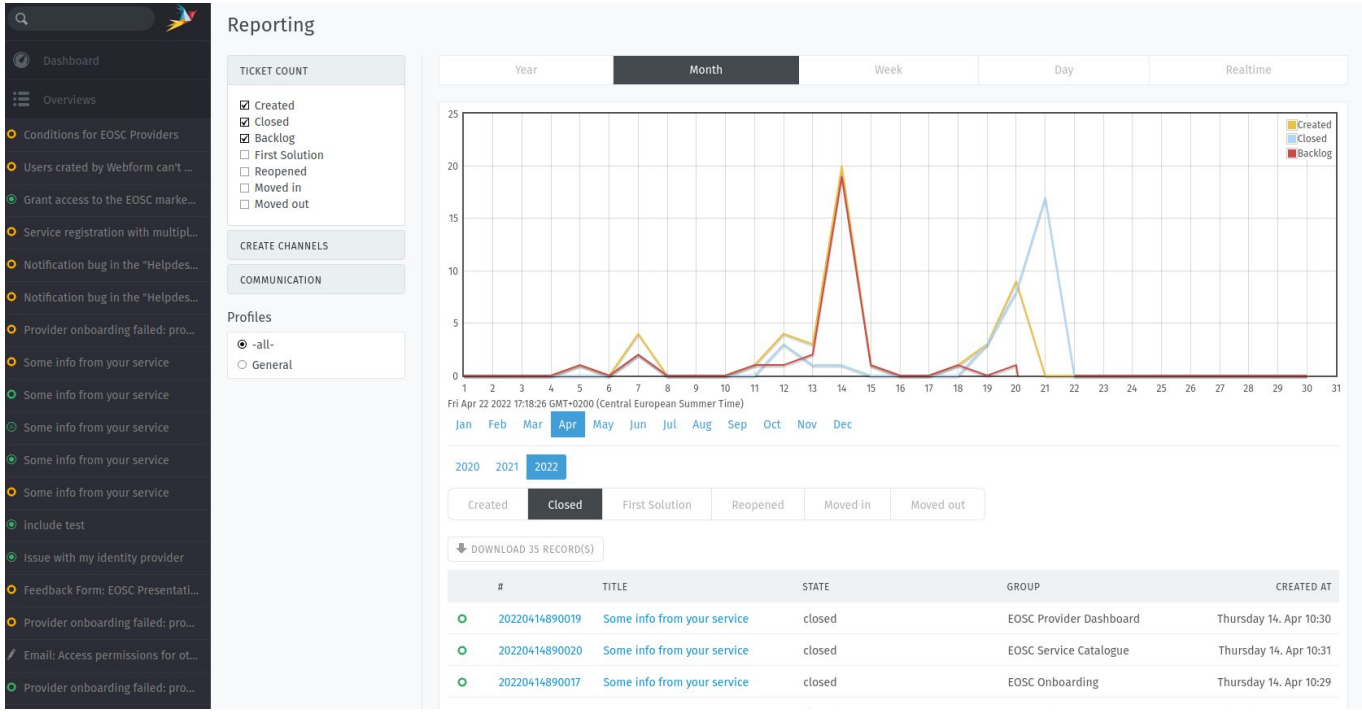
Feedback Form



EOSC Helpdesk: Major Features

EOSC Helpdesk

- User friendly Customer Interface
- Dashboard for helpdesk stuff
- Smart search
- Customizable fields
- History of changes
- Escalation
- Reporting
- Flexible notifications
- Integration via REST API



EOSC Helpdesk: Benefits for Providers

EOSC Helpdesk is available as-a-service for EOSC Providers

The main benefits are:

- No need to maintain own helpdesk
  - EOSC Helpdesk offers providers to support their users
  - Single/Multiple Support Groups
- Branded provider/community portal (currently in development)
- If provider has a helpdesk it can be integrated in multiple ways with EOSC Helpdesk (more on that in the next slide)
- Multiple ways for customers to contact provider (email, via portal, webform, chat if requested)
- Channel of instant communication with whole EOSC Community

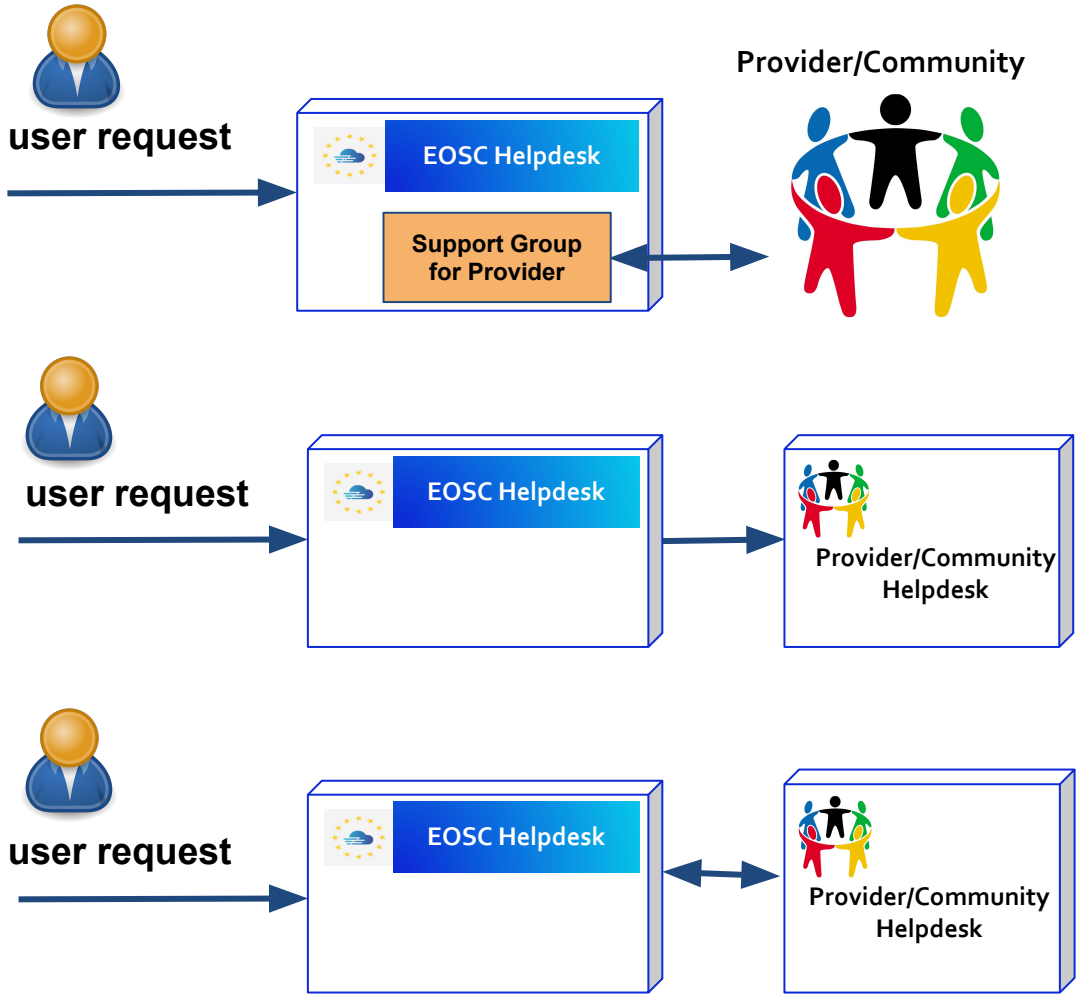
Support Group - is a group of experts who provide support and assistance for defined class of incoming requests

EOSC Helpdesk: Integration Options for Provider

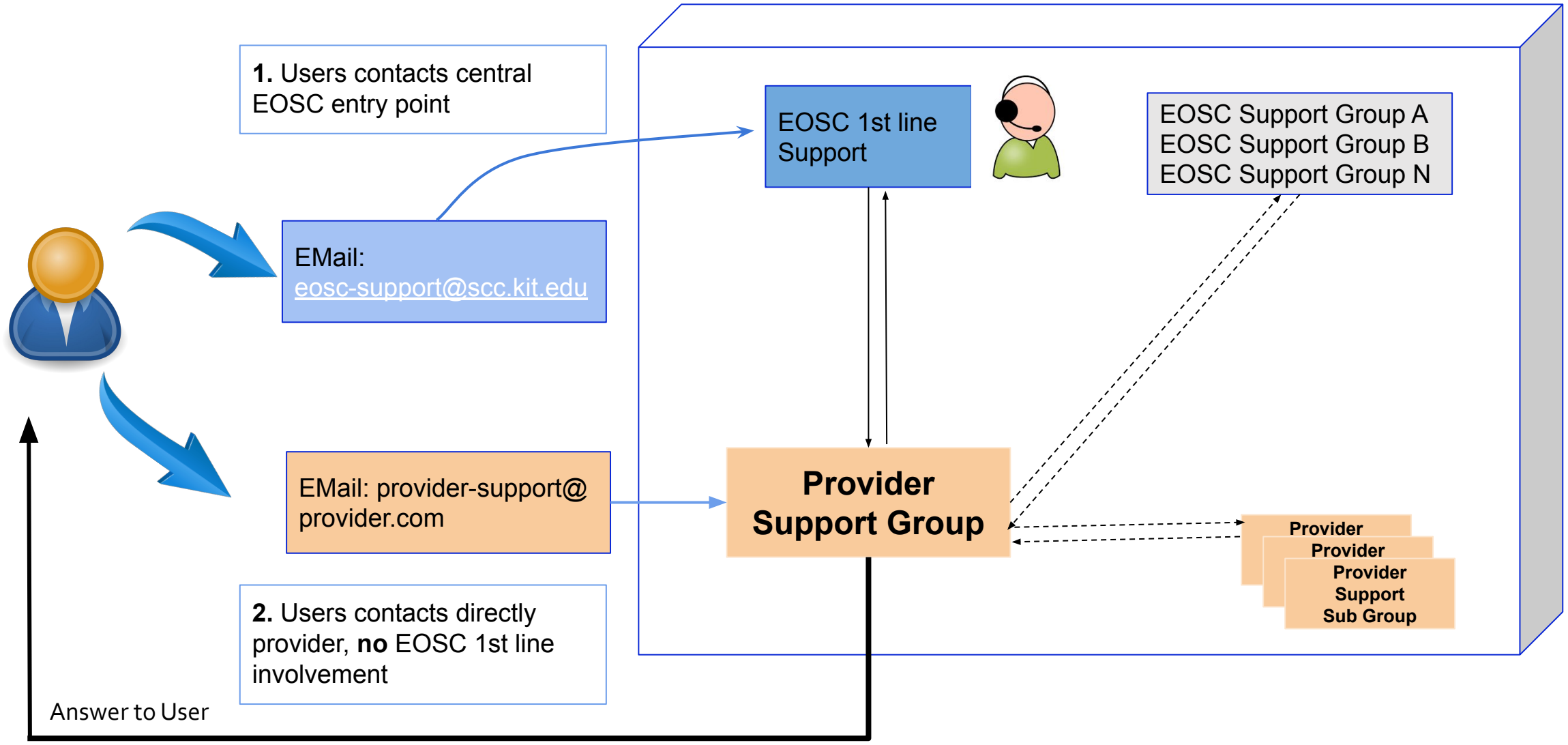
Three main integration options for Providers:

- Direct usage (as-a-service):
  - Support group or multiple groups
  - Implementation of custom workflows
- Ticket redirection:
  - EOSC Helpdesk just a contact point which redirects tickets to provider's mailing list or ticket system
- Full integration
  - Bidirectional synchronization of tickets in EOSC and provider's helpdesk

  Prerequisite: provider's helpdesk API in place



EOSC Helpdesk: Typical Workflow for Provider



EOSC Helpdesk: Roadmap and Next Steps

- EOSC Helpdesk is in production for EOSC and ready for providers

Short term plan (2022)

- Integration with EGI and EUDAT Helpdesks
  - Full synchronization
  - Ticket redirection
- Enable Helpdesk-as-a-service pilots for providers and research communities
  - Request -> Analysis of requirements -> Specification ->Deployment
  - Customization
- Helpdesk Offers for Providers in EOSC Portal during onboarding process

Next year 2023

- Dedicated branded portals for providers and research communities

EOSC Helpdesk: Where to Start

If you as Service Provider would like to learn more about integration:

- Open ticket at https://eosc-helpdesk.eosc-portal.eu/
- Request access to Helpdesk Test Instance as agent
- Examine features and functions, test workflows
- Start integration with production EOSC Helpdesk

Thank you!