

Proiectul NI4OS-Europe: obiective și activități

EOSC: scopul și evoluții actuale

Evenimentul Național NI4OS-Europe de Formare
în Domeniul Științei Deschise pentru Utilizatori
Finali din Moldova

18 noiembrie 2021, online

Dr. Petru Bogatencov, Asociația RENAM

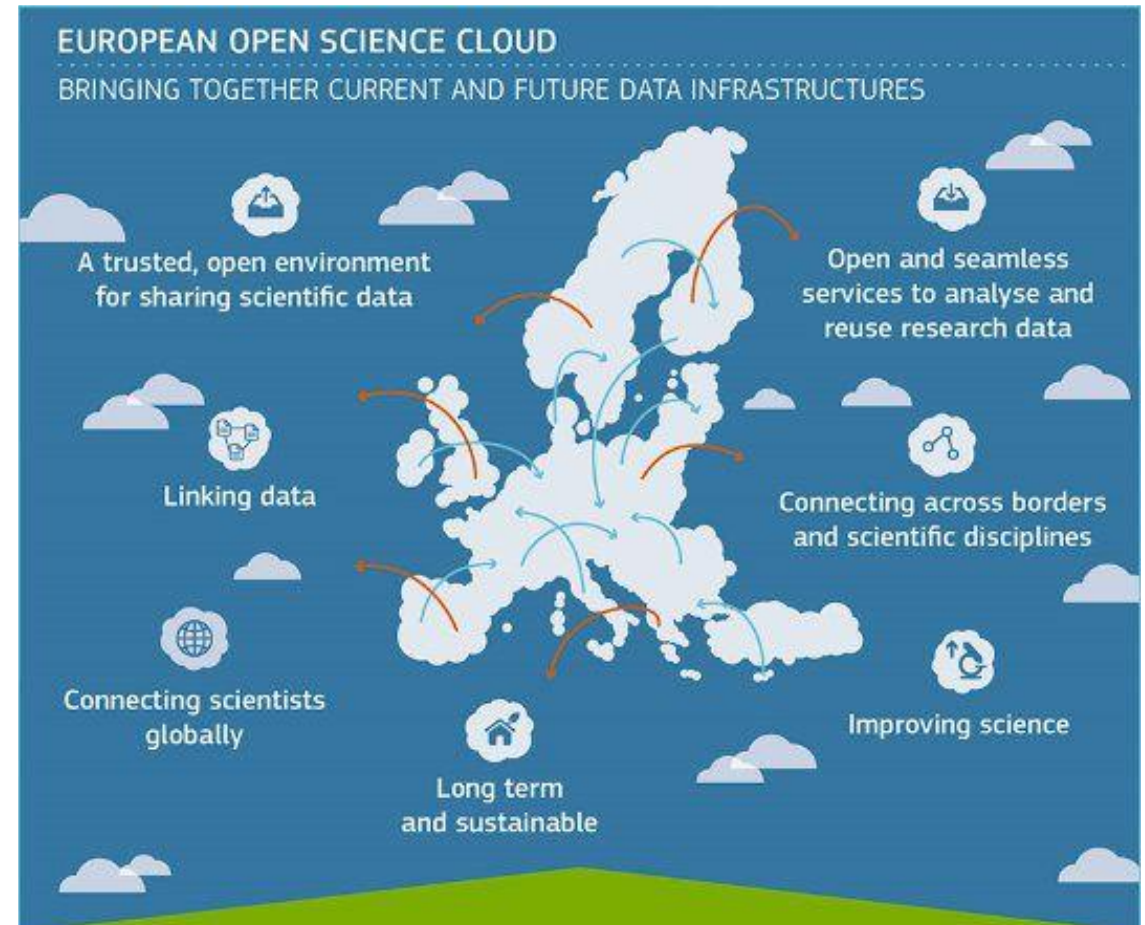


European Open Science Cloud

Vision

To ensure that European scientists reap the full benefits of data-driven science, by offering “1.7 million European researchers and 70 million professionals in science and technology a virtual environment with free at the point of use, open and seamless services for storage, management, analysis and re-use of research data, across borders and scientific disciplines”

2016 Communication on the “European Cloud Initiative”



What is EOSC?



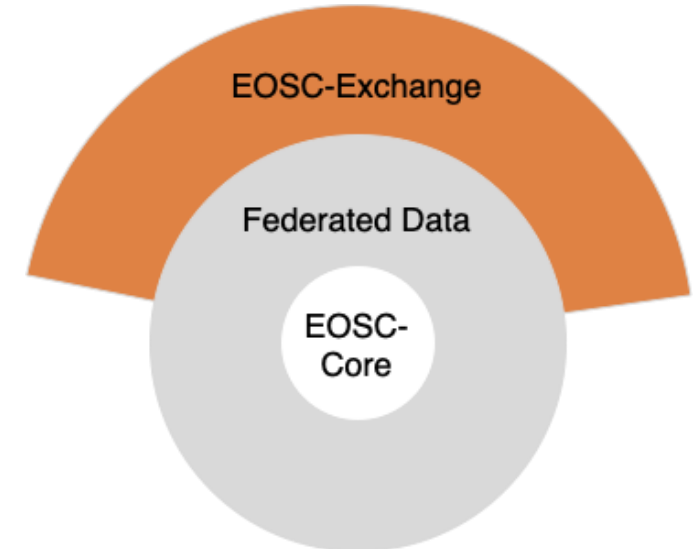
What is the European Open Science Cloud EOSC? - <https://www.eosc.eu/about-eosc>

A web of FAIR data and services

Federation of eInfra and research infrastructures – federated ‘system of systems’

Multi-disciplinary environment in which data can be brought together with services to perform analyses and address societal challenges. In this environment researchers can:

- publish
- find and
- re-use data, tools and services



Aims to enable multidisciplinary discovery & use



EOSC Benefits

Researchers

Widen the opportunities for collaboration and facilitate sharing and re-use research data-not only across research projects but also across sectors and countries

Allow researchers, with limited resources, to draw from this pool of data and services, compensate for national gaps, and develop their research

Policy

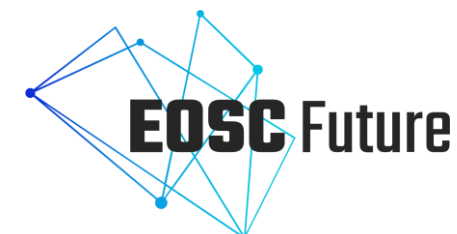
EOSC connects to stakeholders from other regions of Europe and thereby facilitates the sharing of knowledge and experiences

Countries that are already advanced in FAIR data and Open Science policies can share their best practices and lead in developing EOSC

Economic

The sharing of resources and services creates economies of scale

Federating existing research services and data infrastructures, EOSC will leverage national and european investments



EOSC – Focus on Researcher



Researchers are the first and ultimate target group of EOSC.



Their role within the EOSC is two-fold:

primarily users of the EOSC services

offer their assets (research output: data, software and other tools) to the EOSC



Not formed in homogeneous networks



Many individual researchers may not (yet) be aware about the EOSC or may be skeptical about it

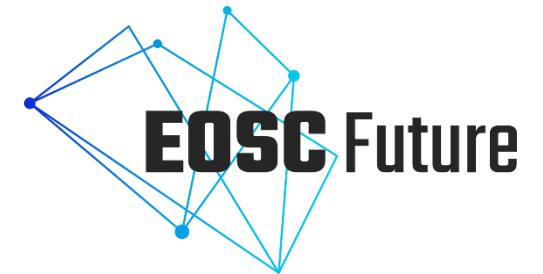
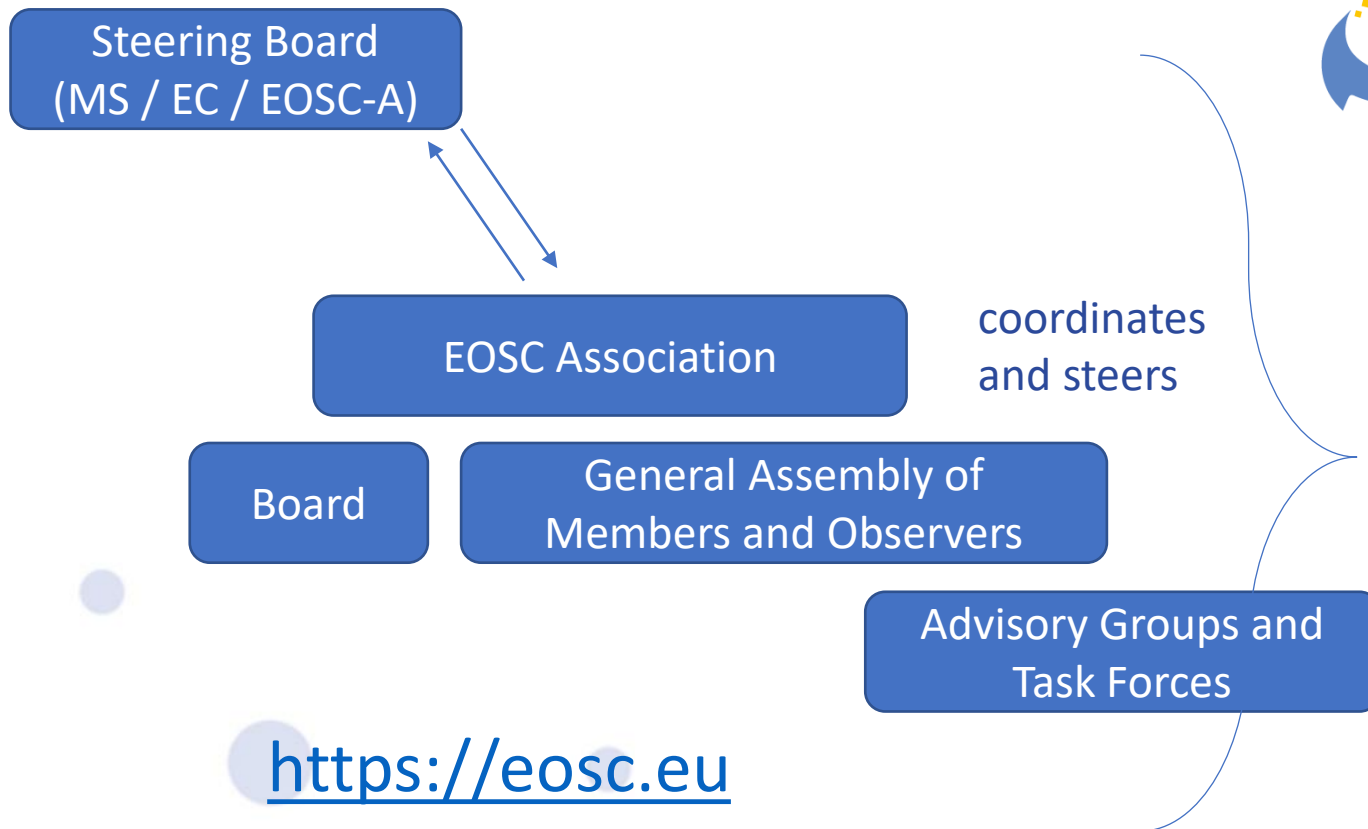


Need to reach out to mediate target groups

What's EOSC for you as a researcher

- Access to data from various repositories in Europe
- Access to services to store, analyse, share data
- Access to free compute resources e.g. via EGI-Ace, DICE and C-SCALE
- Support for data management, Open Science and FAIR
- A place to connect with other research communities

How is EOSC governed and implemented

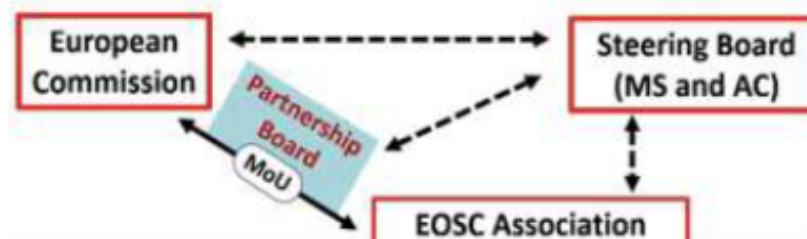


Implementation through many projects

Current EOSC Governance 2021 and beyond

- 1st constitutional GA on 17th Dec 2020
- Board of Directors (9) and 2021 budget
- Official webpage: <https://www.eosc.eu/>
- Statutes published | [Link](#)
- Ongoing work:
 - ✓ MoU with the European Commission
 - ✓ Secretary General
 - ✓ Operational and Advisory bodies
 - ✓ Bylaws

Governance of the Partnership



General Assembly (GA)

- Is the supreme authority of the Association.

Board of Directors

- The President is the Chair of the Board.
- The Board is appointed by Delegates of the GA

Secretary General

- The Secretary General is entrusted with the day-to-day management of the Association, leads the Secretariat.

Operational & Advisory Bodies

- Working groups and task forces to address issues or concerns relating to the mission and operations of the Association.

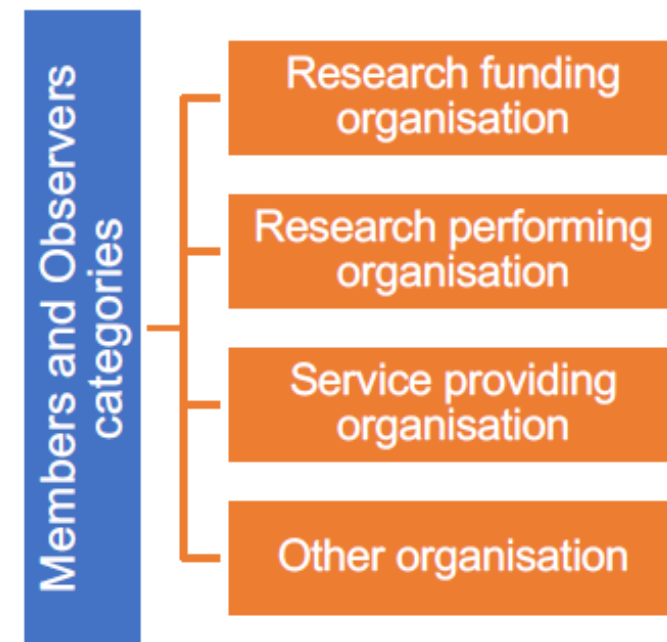
□ Current EOSC Governance 2021 and beyond

✓ Membership Categories

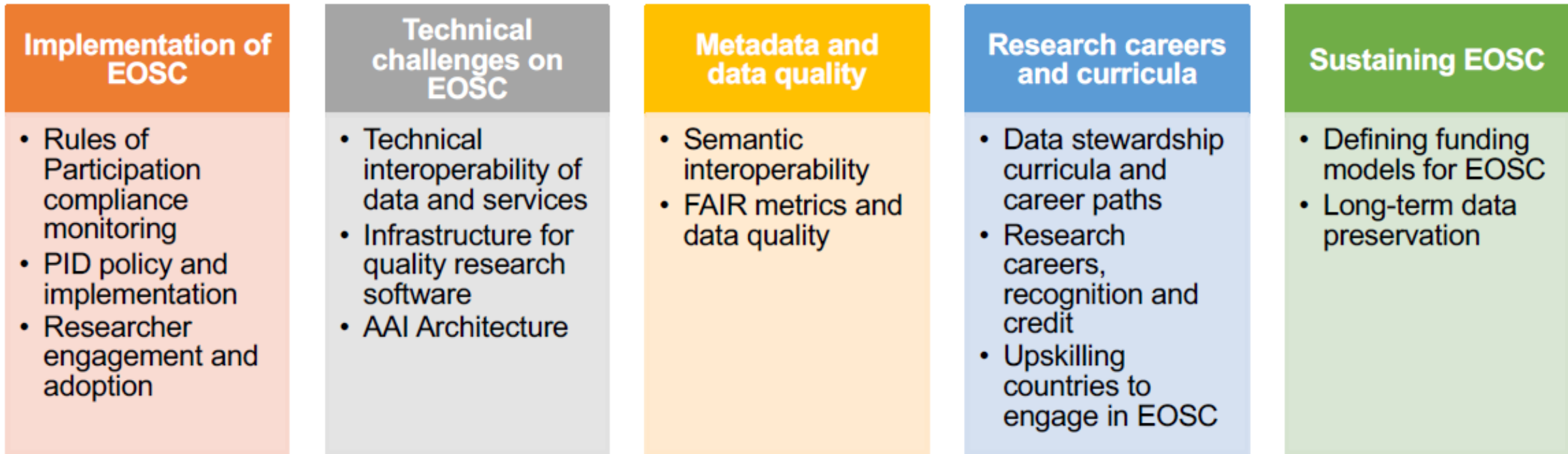
Members
<ul style="list-style-type: none">• Must be a legal entity.• Cannot be a department of national governments and ministries.• Should have a presence in an EU MS or AC, or any other country associated with the EU Framework Programme for Research and Innovation.• So far around 150 Members.

Observers
<ul style="list-style-type: none">• Must be a legal entity.• Cannot be a department of national governments and ministries.• May be established outside this area.• So far around 50 Observers.

Mandated Organisations
<ul style="list-style-type: none">• Each MS or AC that has one or more organisations that are Members of the Association may appoint one (1) Member to act as its Mandated Organisation, to represent national interests.• So far around 20 Mandated Organisations



EOSC Advisory Groups / Task Forces



- [TF draft charters](#)
- TF kick-off meetings during October 2021

EOSC Incentives for Researchers / Organizations

Brings together key stakeholders in the European research environment.

Mandated organisations are able to express views that represent the specificities of their national research system.

The **federation of infrastructures and interlinking of data sets** stimulate collaboration between institutions and researchers -not only across research projects- but also across professional sectors and countries.

Countries that are already **advanced in FAIR data and Open Science policies** can **share their best practices** and lead in developing EOSC.

EOSC Portal and Marketplace



Find resource...

- ✓ All resources Marketplace
- Access physical & infrastructures
- Aggregators & Integrators
- Processing & Analysis
- Security & Operations
- Sharing & Discovery
- Training & Support
- Other

Welcome to the EOSC Portal Catalogue and Marketplace

Integrated platform that allows easy access to lots of resources for various research domains along with integrated data analytics tools. Browse by scientific domain, resource category or provider and, if you need help, we are here for you!

Find EOSC Resources that suit your use case yourself

→ Browse through catalogue

Describe your use case and get support from our experts

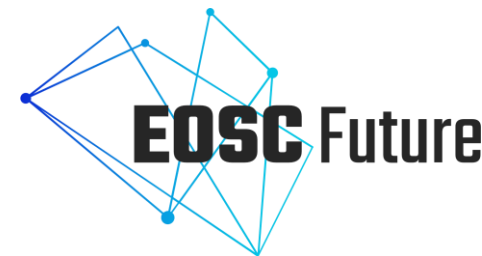
→ Go to your projects



Scientific Domains

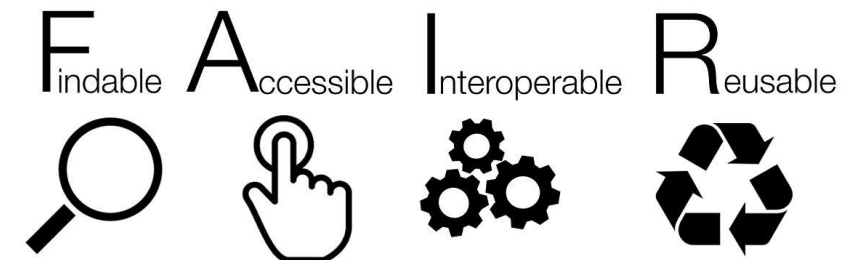
Categories

- ✓ Catalogue to browse for data and services
- ✓ Can search by resource type to find relevant tools
- ✓ Filter by scientific domains
- ✓ Virtual Tour:
<https://marketplace.eosc-portal.eu/?tour=overview>



EOSC services can help to make data FAIR

- Make data discoverable via catalogues
- Assign Persistent Identifiers to help gain credit
- Link data with papers and software
- Improve your citation rates



Main challenges we need to overcome to facilitate and accelerate the implementation of EOSC

- 1. Access to data** – we need an EOSC data search engine, comprehensive and simple enough as Google.
- 2. Access to services** must be supported by developing business and service models that allow providers to offer services within the EOSC ecosystem, to a restricted subset of users if required.
- 3. Interoperability** – cross-disciplinary Open Science can be seen as the ultimate goal of EOSC and this requires the use of formal standards, protocols and APIs.
- 4. Trust and sustainability**, moving beyond proof of concept to sustainable, production level services is critical to ensure researchers trust that the tools can be relied on.
- 5. Enablement: technology AND people:** offering support to help research groups put services in place is incredibly important and must be done in an integrated, coordinated way for EOSC

NI4OS-Europe

15 Member States and Associated Countries | 22 Partners



Participating countries

Greece	Hungary	Albania	Republic of Moldova
Cyprus	Romania	Bosnia-Herzegovina	Armenia
Bulgaria	Slovenia	North Macedonia	Georgia
Croatia	Serbia	Montenegro	




Mission



Support the **development and inclusion** of the national Open Science Cloud (OSC) initiatives in 15 Member States and Associated Countries in the overall scheme of EOSC governance



Spread the **EOSC and FAIR principles** in the community and train it



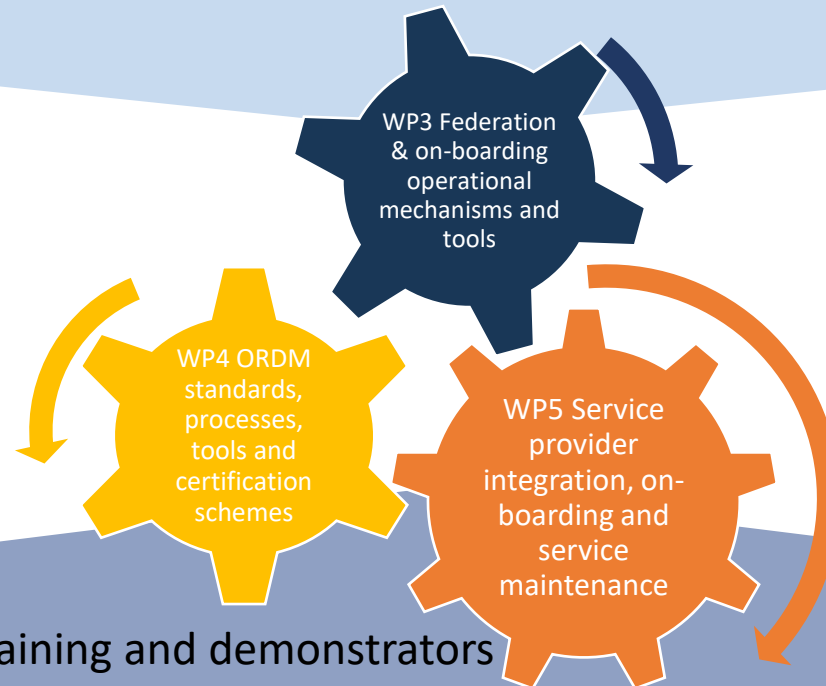
Provide **technical and policy support** in on-boarding of the existing and future service providers into EOSC



Organization

WP1 Management

WP2 EOSC national initiatives and policy support



WP6 User engagement, training and demonstrators

WP7 Communication, marketing, sustainability and innovation

Lines of action



Support the development and inclusion of the **National Open Science Cloud Initiatives** in 15 Member States and Associated Countries in the overall scheme of **EOSC governance**

EOSC national initiatives & policy support

Support the EOSC Governance structure by forming in partner countries

Support the building of sustainable governance by engaging the national initiatives

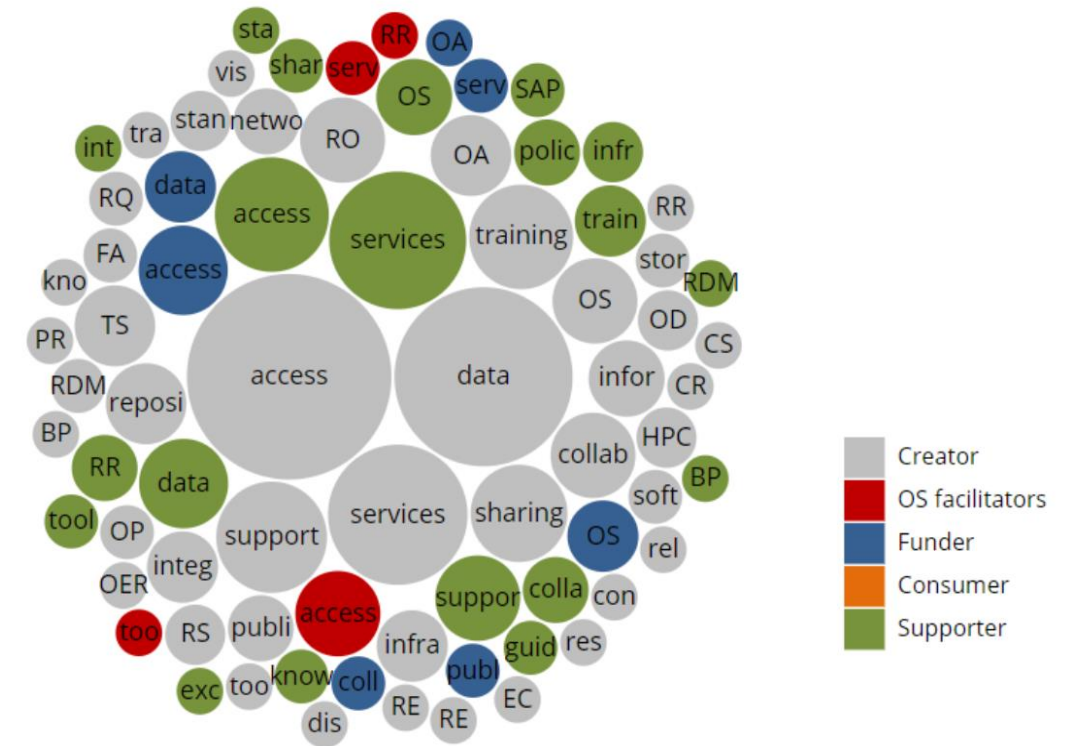
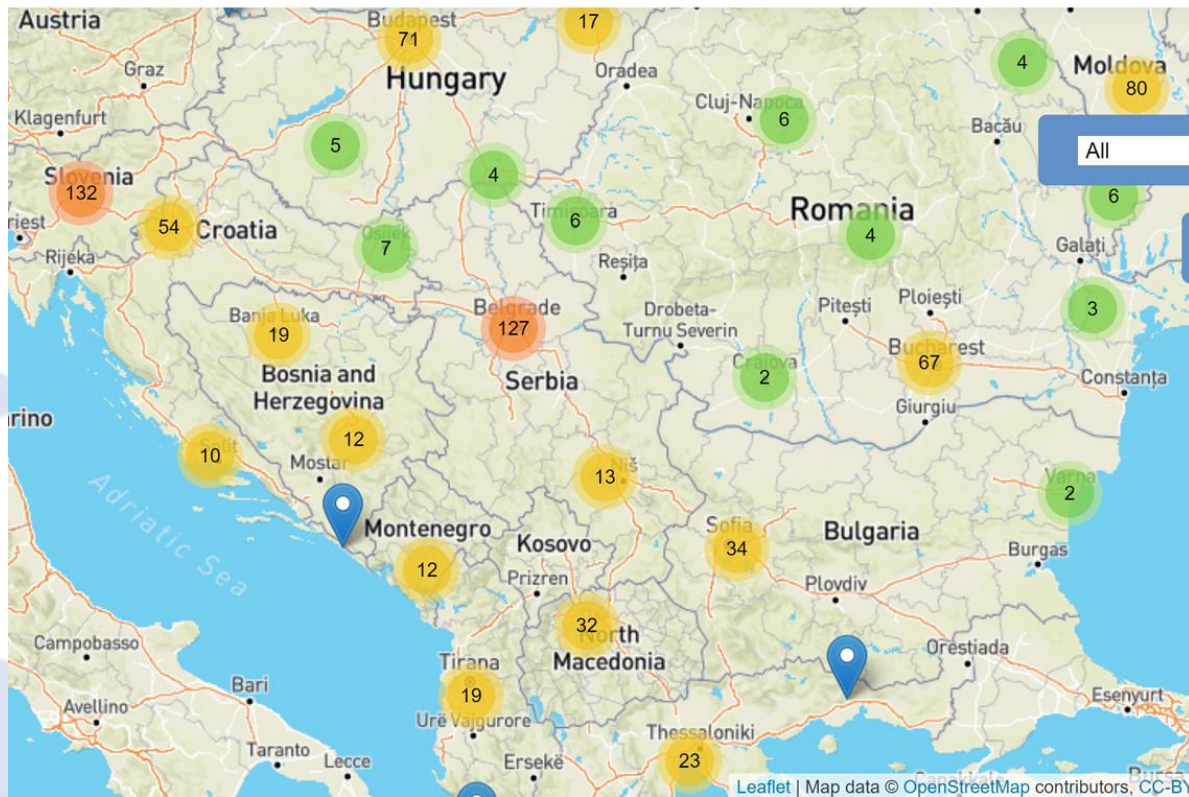
Provide **support and interface** to other EOSC-relevant bodies

Reduce **fragmentation** and promote federation on national level

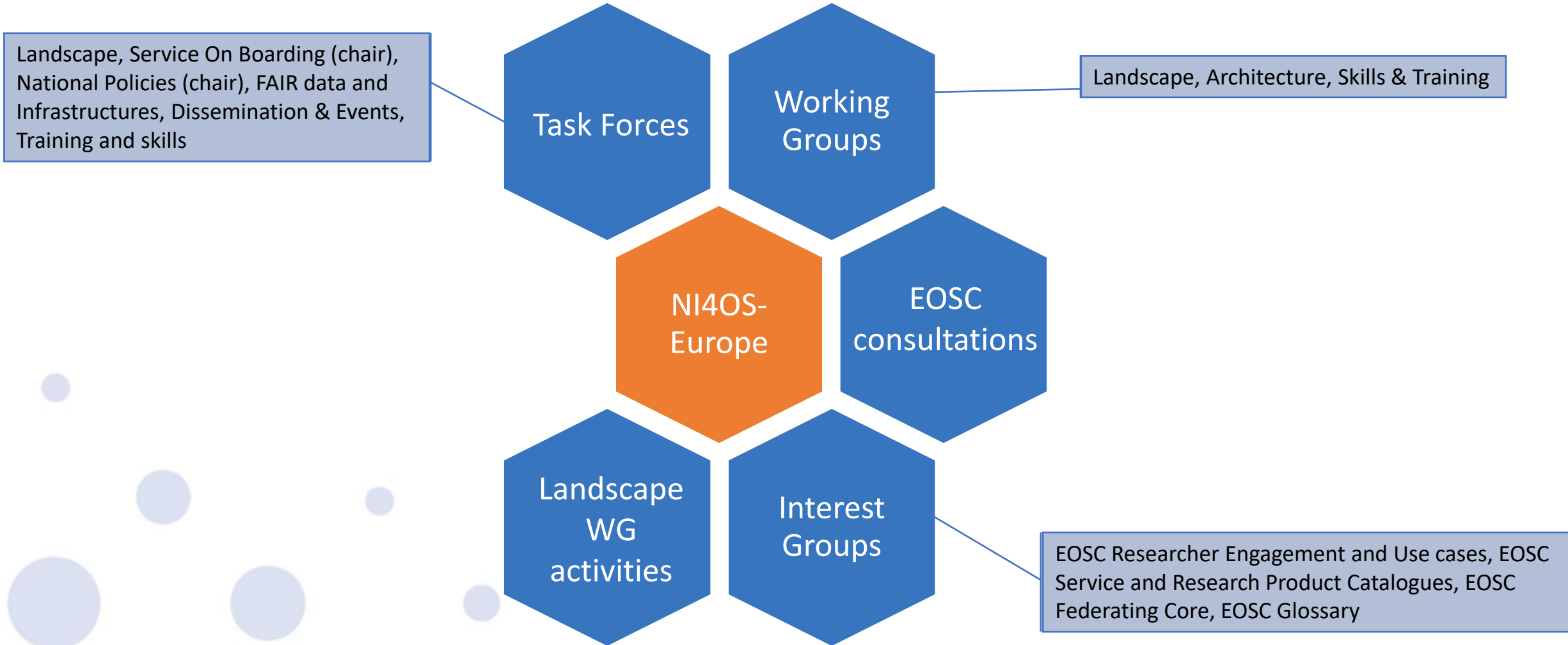
Prepare the ground for EOSC **on-boarding**

Open Science survey: Capturing the state of OS in the region

- [Visualization of results](#)
- [Creation of stakeholder map for SEE](#)
- [First set of data deposited in Zenodo under an open](#)



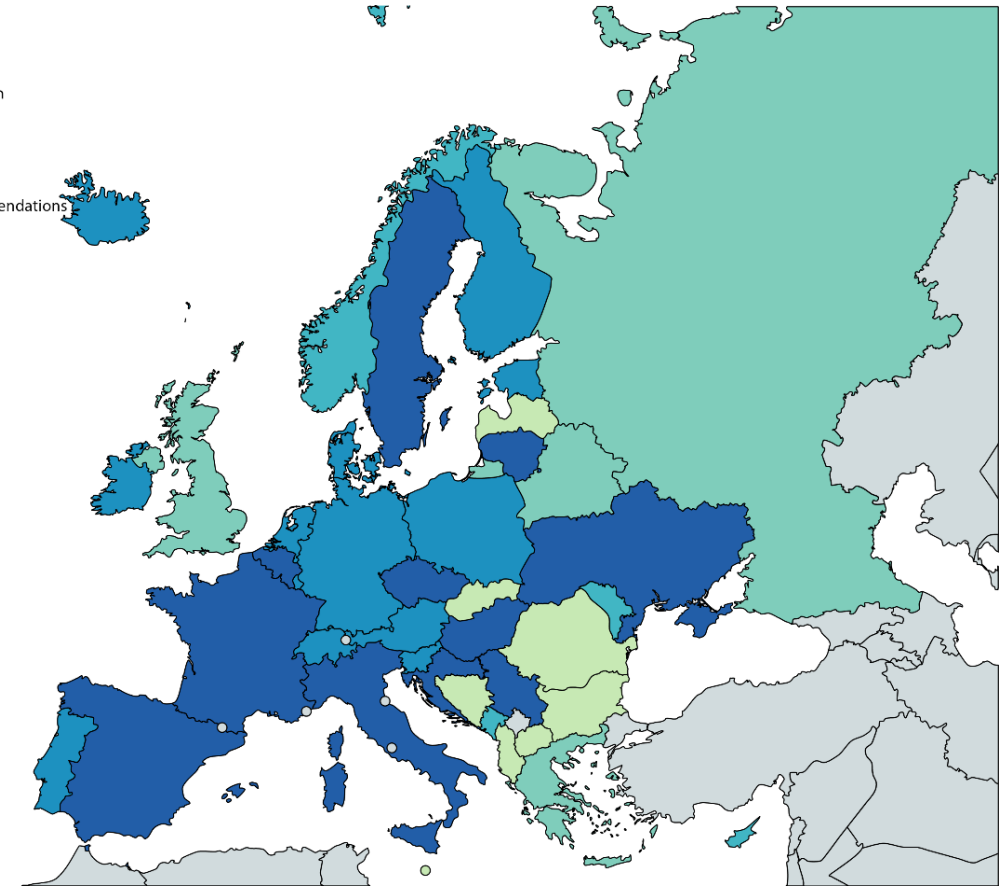
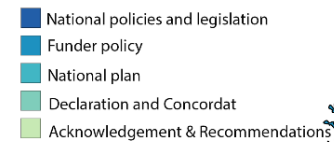
Liaison with EOSC



- NOSCI are living national OS ecosystems that support with the EOSC Governance
- NOSCI recognize diversity and OS maturity of countries, and their modelling can be adjusted to fit the needs of each country
- NOSCI keep national stakeholders up to date with EOSC developments and spread awareness

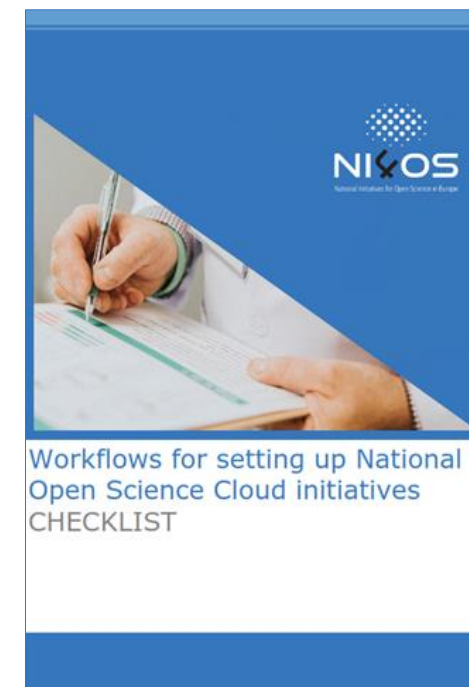
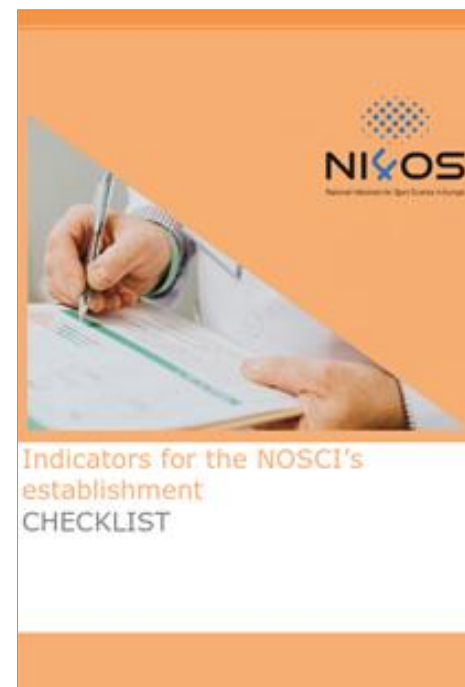
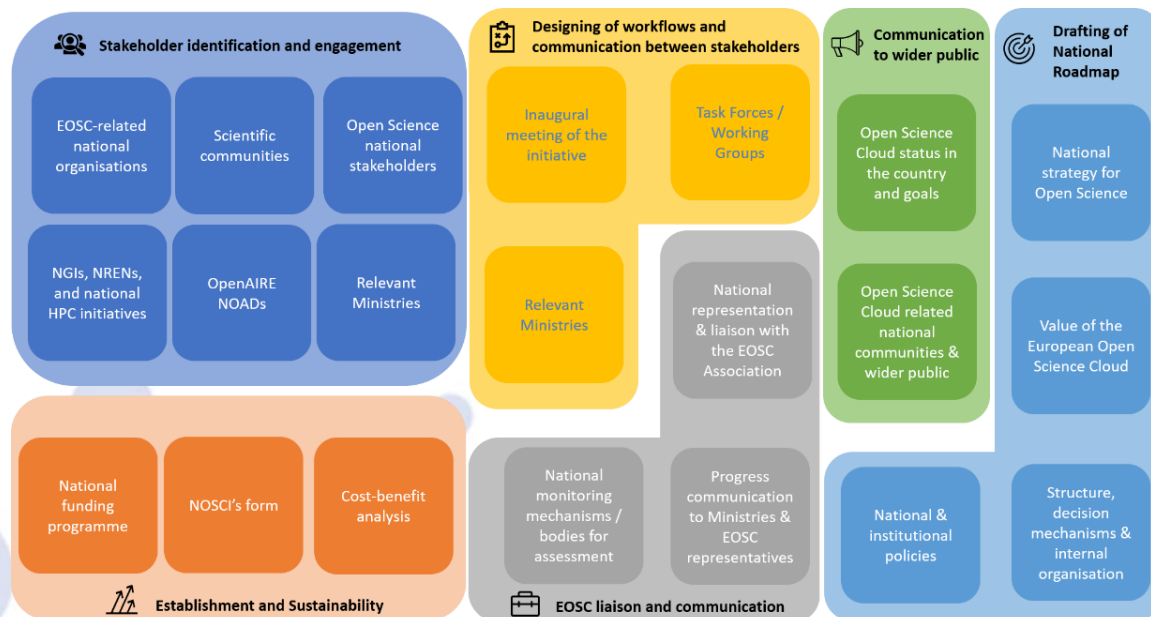
Establishing a NOSCI: all-round support

- Collection of current OS policies and models in Europe with focus on SEE area
- Clustering and visualization of OS policies across Europe
- Classification of major OSC building blocks.
- Blueprint for setting up NOSCI
- 2 checklists facilitating the establishment and operation of the NOSCI
- Explanatory video guiding through the different setup options
- Training webinar supporting the set-up of NOSCI
- Workshop bringing together NI4OS-Europe partners with the EOSC Governance Board country delegates



Blueprint for NOSCI: workflows and checklists

- Set of indicators for assessing establishment progress
- Modular workflow for setting up NOSCI
- Operational aspects for their day-to-day operation



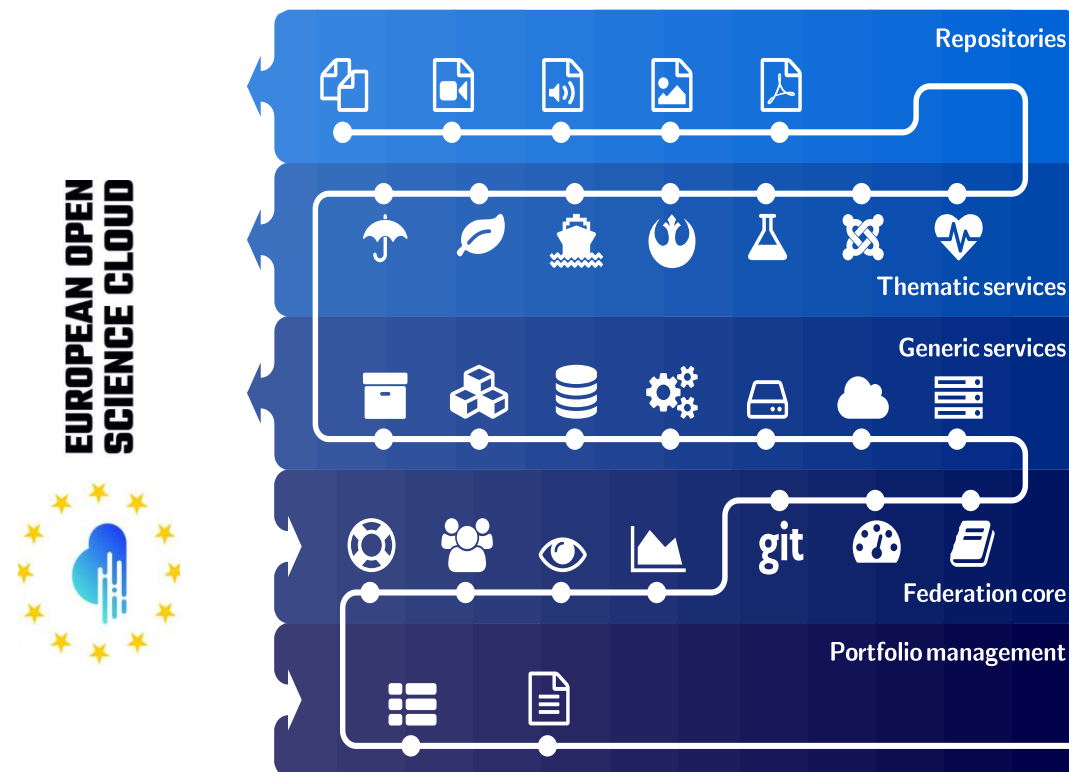
Lines of action



Provide **technical and policy support** in **on-boarding** of the existing and future service providers **into EOOSC**

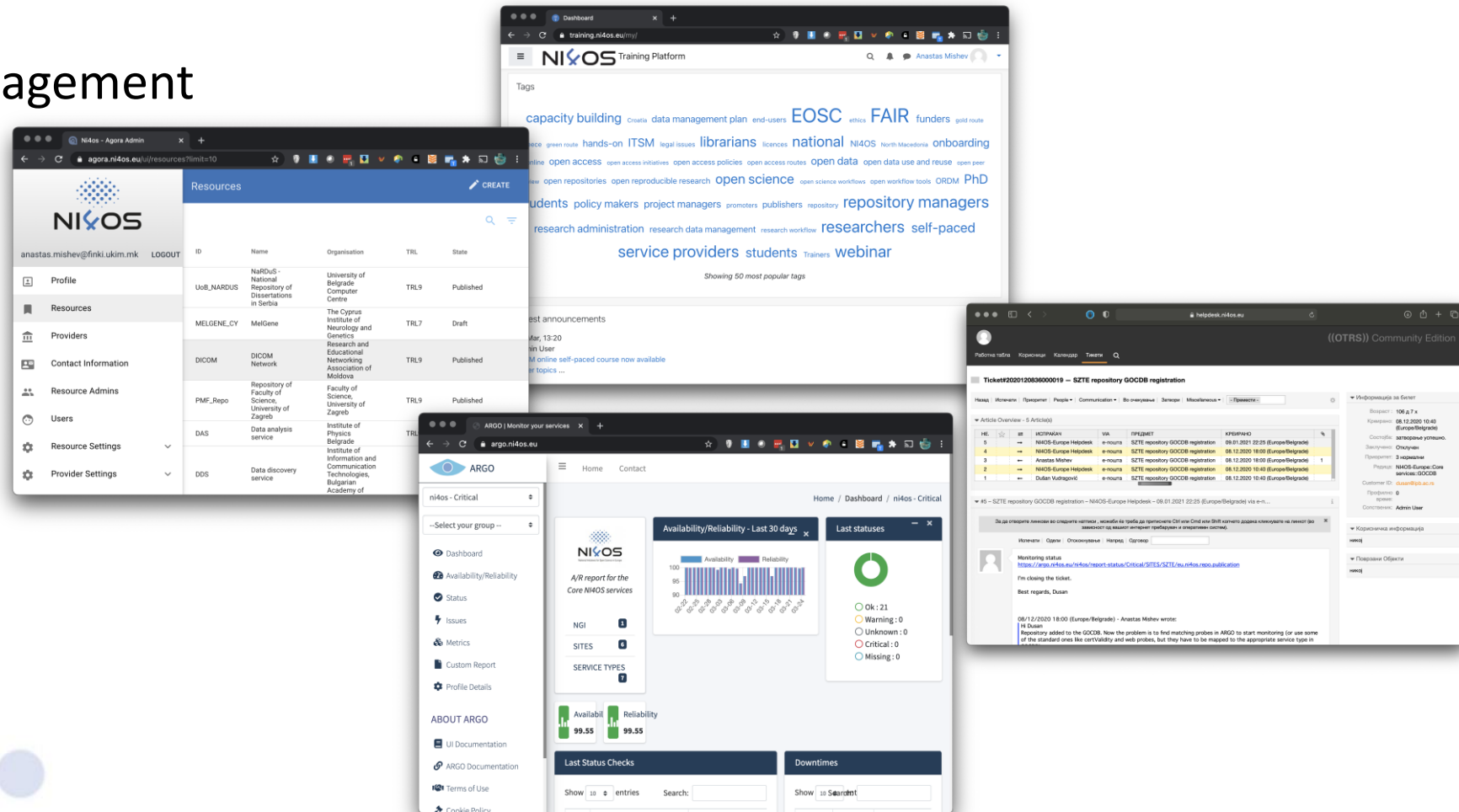
Service integration and onboarding

- Pre-production environment – validate readiness and maturity level for EOOSC onboarding
- Service portfolio management system based on the EOOSC provider and service profile
- Integration with federation core services
- Service categorization
- Onboarding of
 - generic services
 - thematic services
 - repositories



NI4OS-Europe pre-production environment

- Federating core
 - Service catalogue management system (AGORA)
 - AAI
 - Helpdesk
 - Monitoring
 - Accounting



NI4OS-Europe: Registered Services for Moldova

The following resources have been registered with the AGORA Service catalogue management system:

Generic:

- RENAM Scientific Cloud;
- RENAM Storage Service.

Thematic:

- DICOM Network;
- CSIA.

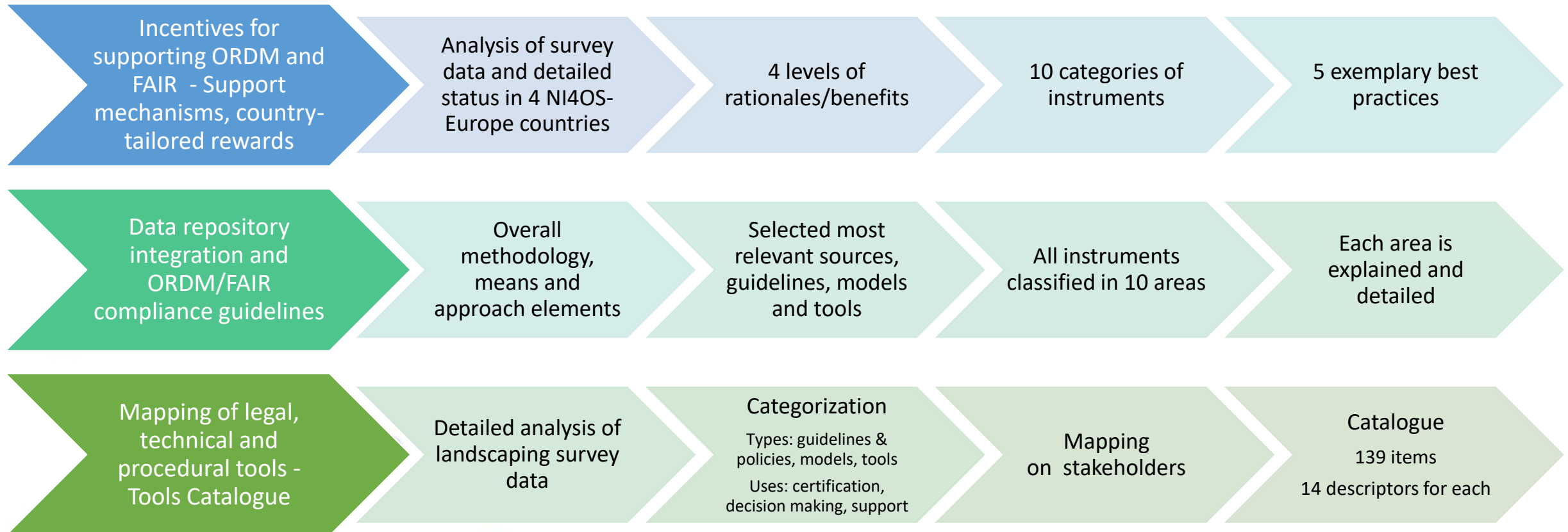
Repositories:

- IREK – ASEM, Institutional Repository of Economic Knowledge


ORDM / FAIR tools and certification schemes

- Implementation and adoption of **tools, standards and guidelines**
- Selection and delivery of tools
- **Harmonization and interoperability** within and across communities and with core initiatives
- Development and application of **certification schemes**
- **Elaboration of incentives** to support ORDM and FAIR
- **Analysis of the incentives and rewards** that can be employed to improve the uptake of ORDM and FAIR
- **Analysis of guidelines** for OS by approaching ORDM and FAIR
- Analysis and **categorization of contemporary existing tools** supporting FAIR and ORDM

ORDM/FAIR documents with their elements

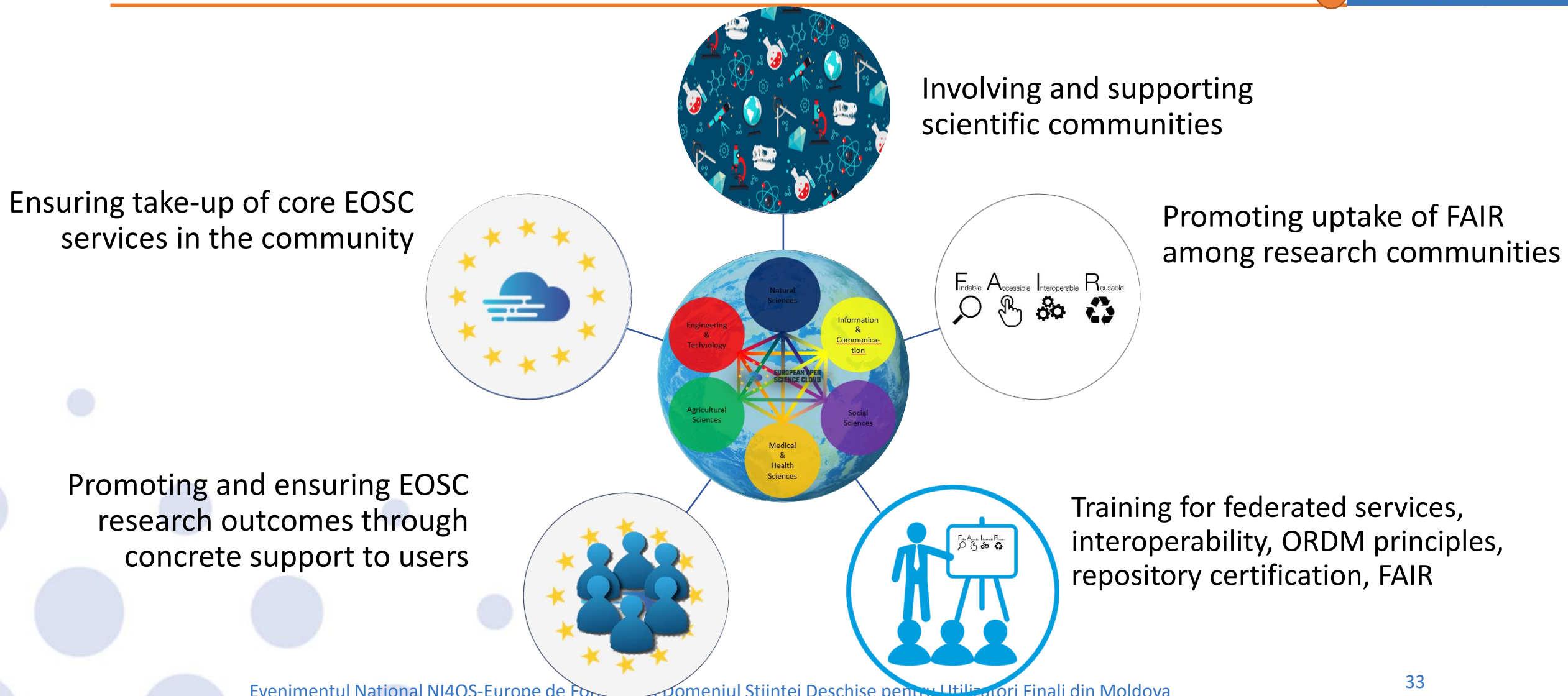


Lines of action



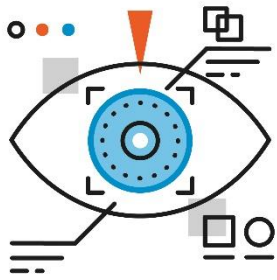
Spread the EOOSC and FAIR
principles in the community and
train it

User engagement, training and demonstrators

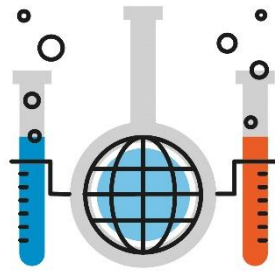


User engagement, training and demonstrators

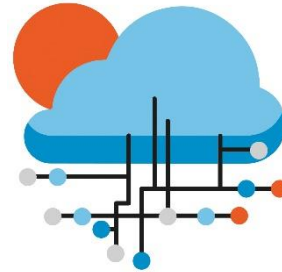
- Training materials available
- Definition of use cases in various scientific fields:



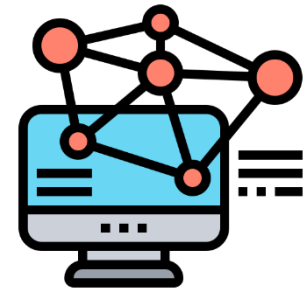
Digital
Cultural Heritage



Life Sciences



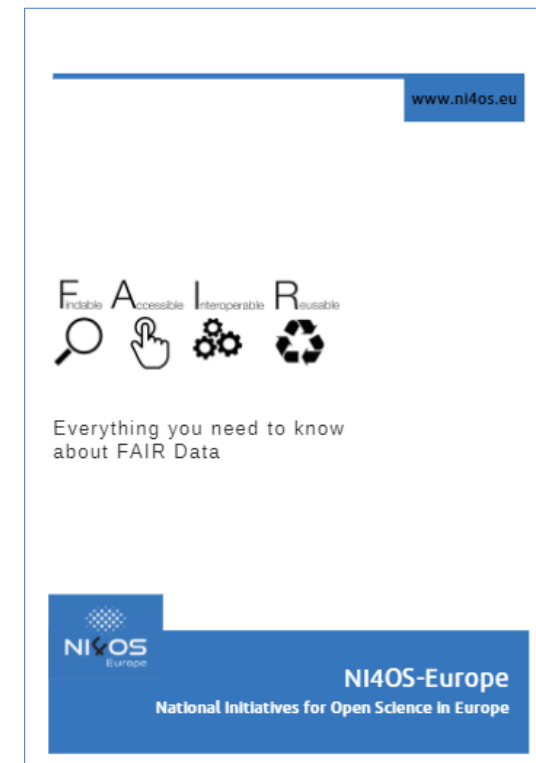
Climate Science



Computational Physics

Support to EOSC service & FAIR uptake in communities

- Ambassadors from each country assigned as **EOSC promoters**
- Training and dissemination material for **FAIR** and **EOSC** service uptake is available in all different languages of the NI4OS-Europe area
- **Webinars** for disseminating EOSC and FAIR principles in each country



NI4OS-Europe training

- [NI4OS-Europe training platform](#)
- Training platform has been populated with training material
- 5 [train-the-trainers](#) events held on:
 - FAIR
 - National EOSC promotion
 - ORDM
 - Onboarding
 - IT Service Management
- Each country participating in NI4OS-Europe has scheduled 2 training events – total of 30 training events



Communication, marketing, sustainability, innovation

- Strong digital presence
 - Website
 - Calendar
 - Agenda tool
- Events and networking
 - Webinars
 - Workshops
 - Dissemination events
- **Collaboration** with the EOSC-5b projects
- **Support** the global efforts on **COVID-19**

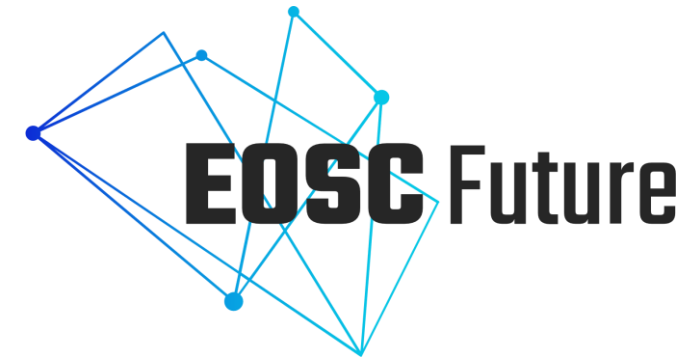


- **Sustainability and innovation**
 - Find solutions for sustainable and long-term impact of project results
 - Manage knowledge and results so as to create added value for different stakeholders

NI4OS-Europe brand & promotional package

- Logo
- Video
- Brochures
- Presentations
- Newsletters
- Posters and Infographics
- Roll-up banners



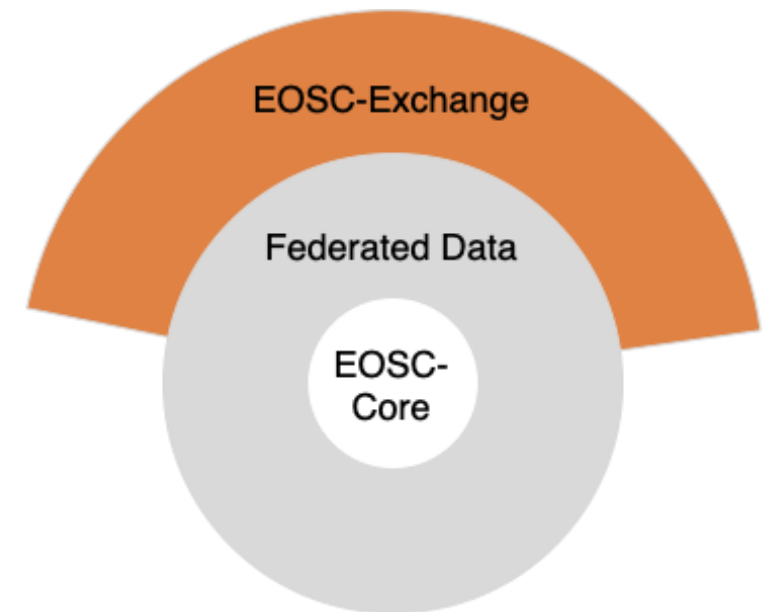


Integrate, consolidate, and connect e-infrastructures, research communities, and initiatives in Open Science to further develop the **EOSC Portal, **EOSC-Core** and **EOSC Exchange** of the EOSC**

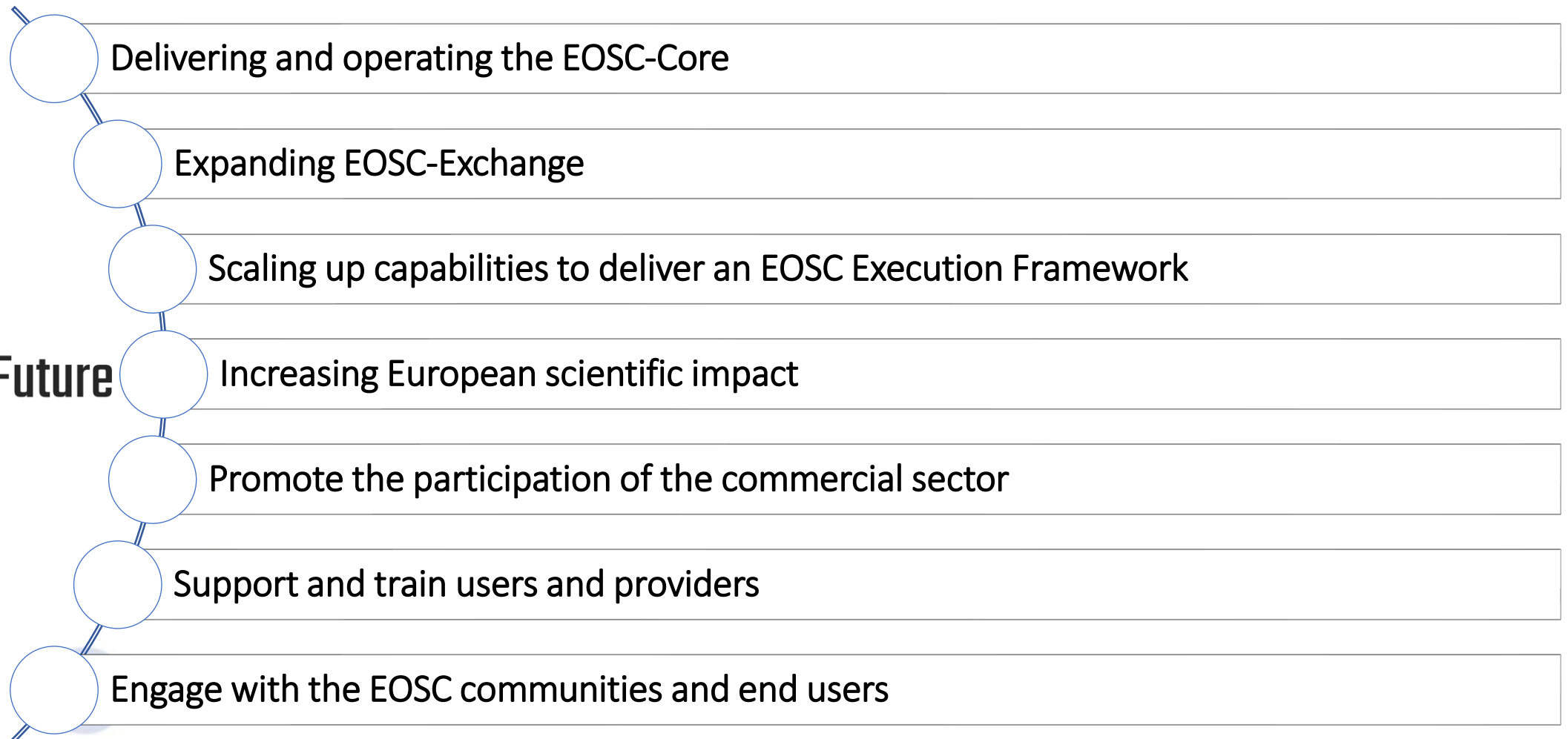
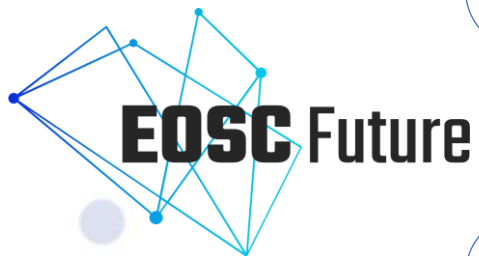
Project Website	https://eoscfuture.eu/
Start date	1/4/2021
Duration	30 months
Call identifier/Topic	INFRAEOSC-03-2020
Partners	35 beneficiaries representing over 85 organizations from all around Europe

EOSC Future's Aims

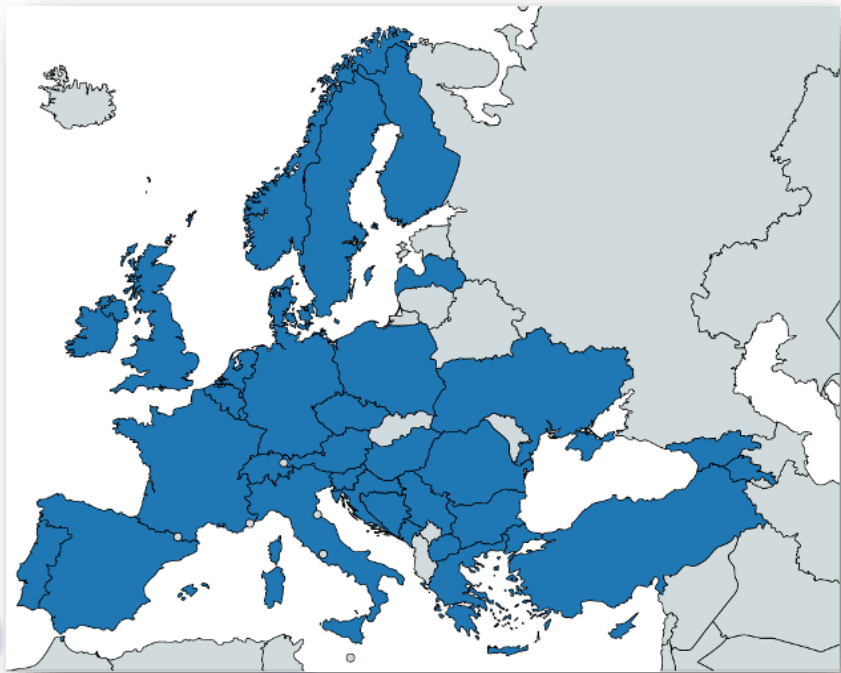
- **Realization of EOSC-Core and EOSC-Exchange** with interoperable data and resources
- **Integration** of data and resources from the **science cluster** communities into the EOSC Platform
- **Direct involvement of users** in the **co-design** and implementation of the EOSC Portal



EOSC Future's Goals



EOSC Future User Groups



Natural Sciences

Engineering

Medical and Health Sciences

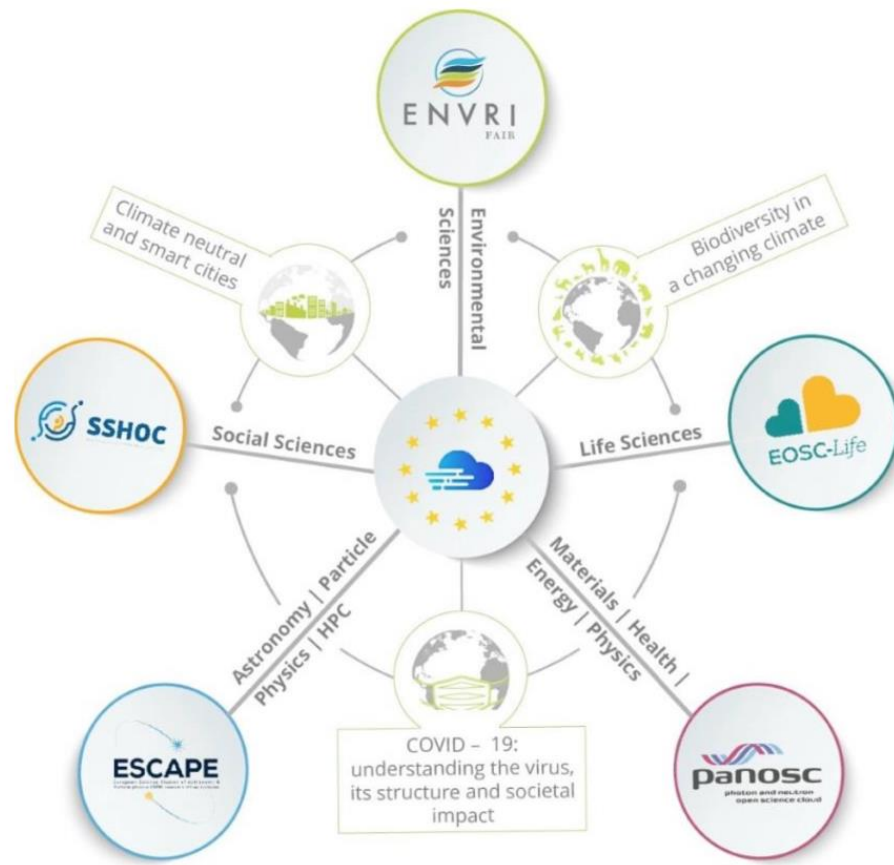
Social sciences

Humanities

and many more...

- ✓ A team of “EOSC champions” from different scientific disciplines across the EU to help test and refine services and products.
- ✓ The User Group will rely on surveys, focus groups, or testbed sessions to validate project outputs.
- ✓ 300 applications from different science areas and broad coverage.

EOSC - Science clusters



ESFRI Science Clusters :

ENVRI-FAIR – environmental sciences

EOSC-Life – life sciences

ESCAPE – astronomy and particle physics

PaNOSC – photon and neutron sciences

SSHOC – social sciences and humanities

Essential Reading

- [EOSC Strategic Research and Innovation Agenda](#)
- [Six Recommendations for Implementation of FAIR Practice](#) - official publication
- [A Persistent Identifier \(PID\) policy for the European Open Science Cloud](#) - official publication
- [Landscape of EOSC-related Infrastructures and Initiatives](#) - official publication
- [FAIR Metrics for EOSC](#) - 2nd Draft out for comments
- [Solutions for a Sustainable EOSC](#) - Ironlady Draft
- [PID Architecture for the EOSC](#) - Draft for consultation
- [EOSC AAI Architecture](#) - Draft for consultation
- [Scholarly Infrastructures for Research Software](#) - Draft for consultation
- [EOSC Rules of Participation](#) - Draft 0.5

Thanks!



NI4OS



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<https://ni4os.eu/contact-us>

National Initiatives for Open Science in Europe – H2020 Research and Innovation action – contract no. 857645