

Towards the European Open Science Cloud (EOSC): reflections on a local basis for domestic infrastructures

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[ABSTRACT Towards the European Open Science Cloud (EOSC): reflections on a local basis for domestic infrastructures

In November 2018, the European Commission launched the [European Open Science Cloud \(EOSC\)](#) at the University of Vienna. The European Open Science Cloud (EOSC) envisions establishing a European data infrastructure, integrating high-capacity cloud solutions, eventually widening the scope of these services to include the public sector and industry.

But, what does it mean at a domestic level, and how does it fit with the now launched EOSC?

How can relevant relevant communities engage with the EOSC?

How can EOSC Stakeholders contribute to the structuring of the co-creation processes?

How can the addressed communities help to prepare the transition to a new "Stakeholder-based governance"?

Understanding the EOSC structure is a first step in recognizing the opportunities offered by the newly launched EOSC. This presentation offers some reflections for a better understanding of the realization of the EOSC at the present stage, including the newly established EOSC Secretariat

Addressed main topics:

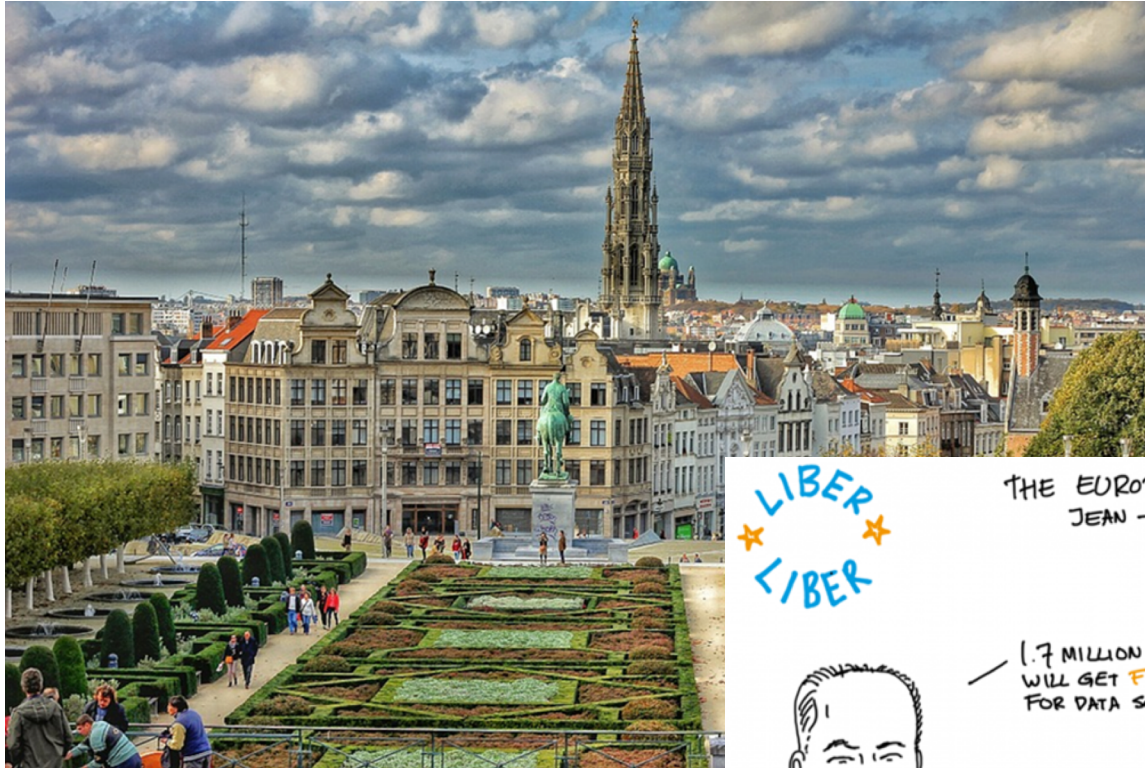
Development of sustainable collaborative digital ecosystems - Digital Single Market - Data Culture - Research Data Services - Architecture and Funding - Governance models - Pan European initiatives, infrastructures and bodies

Keywords: EOSC, EOSC Secretariat, Data Culture, Internet of FAIR data and services

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EOSC – Not a cloud made in Brussels ...

(quote Jean-Claude Burgelman, EOSC Conference, Vienna, 30 October 2018)



LIBER
TIBER

THE EUROPEAN SCIENCE CLOUD
JEAN-CLAUDE BURGELMAN
EC

1.7 MILLION EU-RESEARCHER
WILL GET **FREE, OPEN** SERVICES
FOR DATA SCIENCE



EOSC
2020

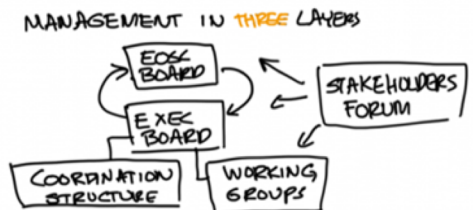
WE STARTED IT ALL IN 2016
AND LAUNCH THIS YEAR IN 2018
NOT EVERYTHING WILL BE
UP AND RUNNING
IN **2020** WE WILL REACH
THE FULL IMPLEMENTATION

FAIR **WE WANT FAIR**

WITHOUT FAIR DATA
THERE IS NO EOSC

COST OF **NOT** HAVING
FAIR DATA IS INTO THE
BILLIONS OF EURO
YEARLY

CORE PLAN IS TO
CREATE **FAIR DATA**

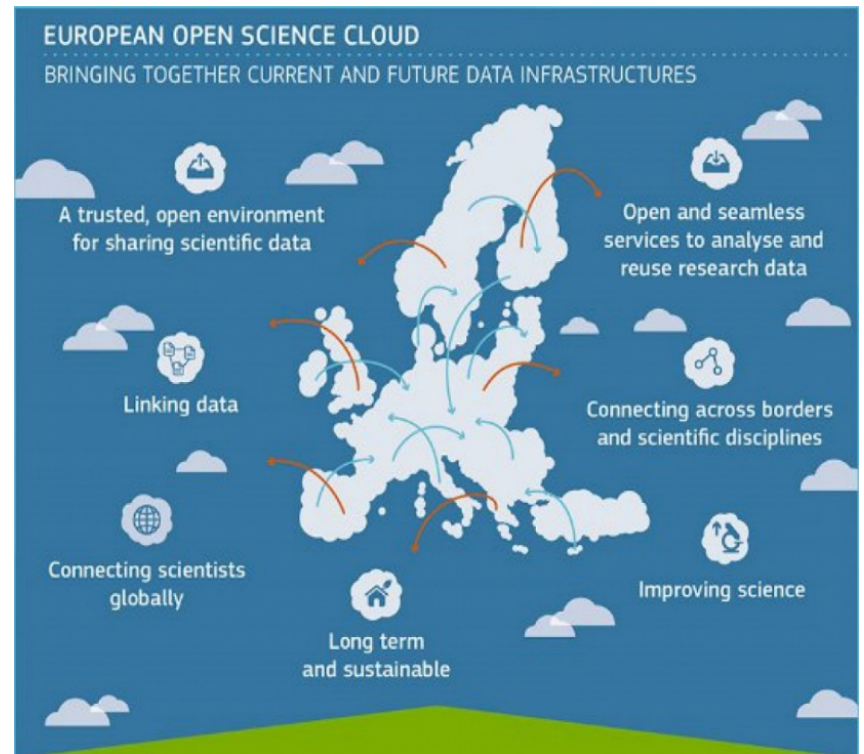


The vision

EOSC will provide **1.7m EU researchers** an environment with free, open services for data storage, management, analysis and re-use across disciplines

EOSC will join existing and emerging horizontal and thematic data infrastructures, **bridging today's fragmentation and ad-hoc solutions**

EOSC will add value and leverage past infrastructure investment (10b per year by MS, two decades EU investment)



EOSC Model: 6 lines of action

| | |
|-------------------------------|---|
| Architecture | Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable. |
| Data | FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles. |
| Services | Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users. |
| Access & Interface | Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines. |
| Rules | Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty & trust. |
| Governance | Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks. |

Source: Implementation Roadmap for the European Science Cloud (Staff Working Document SWD(2018) 83), 14 March 2018:

<http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud>

6 lines of action

EUROPEAN OPEN SCIENCE CLOUD

About Governance Services & Resources Policy EOSC in Practice Media For providers

EOSC relies on 6 action lines:

Learn more in the [EC Staff Working Document](#)

**ARCHITECTURE,
DATA,
SERVICES,
ACCESS & INTERFACE,
RULES,
GOVERNANCE**

ACCESS EOSC SERVICES & RESOURCES

NETWORKING

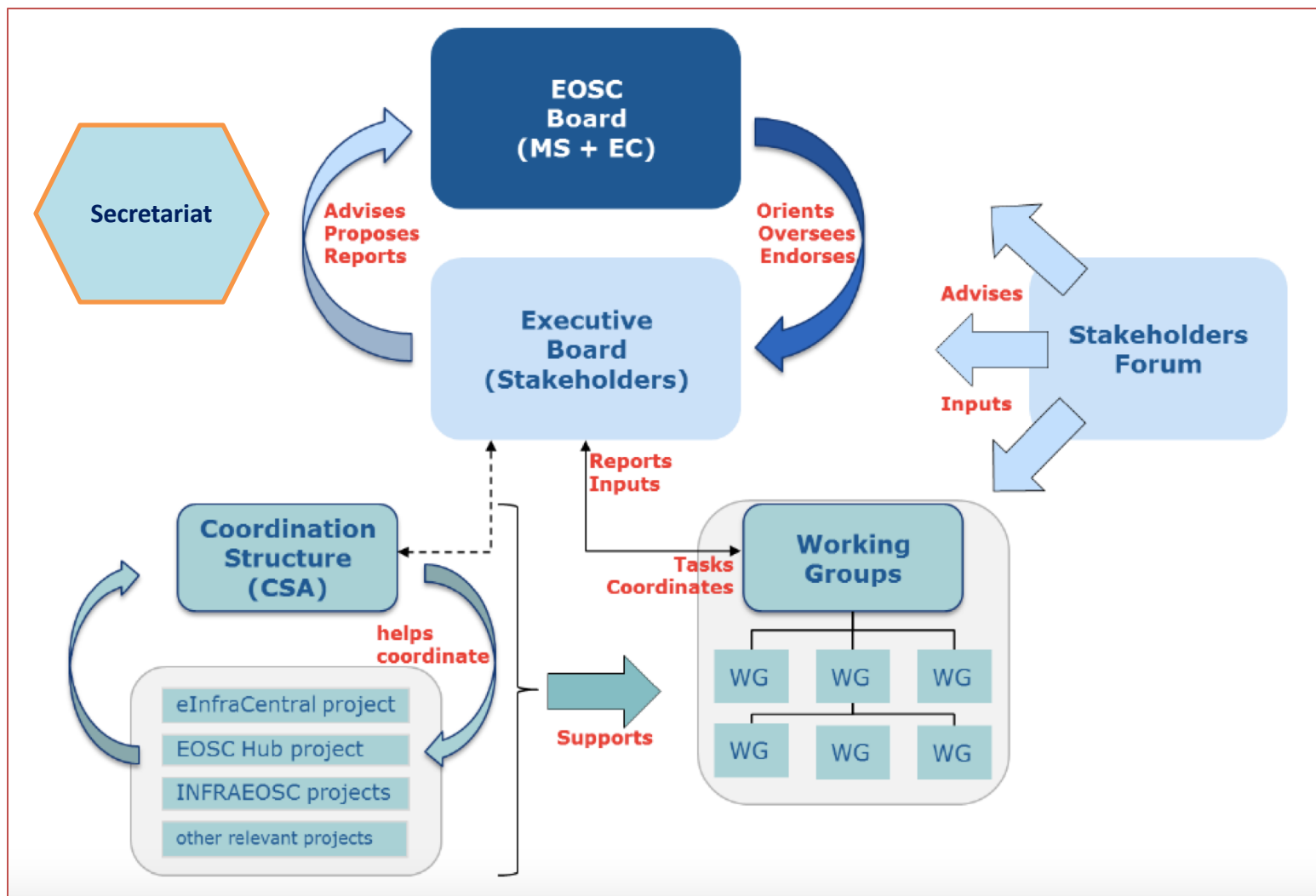
COMPUTE

STORAGE

SHARING & DISCOVERY

<https://www.eosc-portal.eu/>

The EOSC Governance 2019-2020



Roles

| | Role |
|-----------------------------|--|
| EOSC Board | <p>To oversee & steer the EOSC strategy and implementation</p> <p>→ <i>Review and decide</i></p> |
| EOSC Executive Board | <p>To help & support the EOSC strategy, implementation, monitoring and reporting on progress of implementation</p> <p>→ <i>Elaborate and propose</i></p> |
| Stakeholders Forum | <p>To advise the Executive Board and reach-out to the scientific community</p> <p>→ <i>Provide input and feedback</i></p> |
| EOSC Secretariat | <p>To support to the EOSC Executive Board and the Governance Board to work openly and inclusively together with communities to co-create an all-encompassing EOSC</p> <p>→ <i>Support and co-create</i></p> |

Résumé: Governance framework

SCOPE

All actions needed for steering and overseeing the initial development of the EOSC (until end 2020) towards the EOSC federated model described in the [EOSC Implementation Roadmap](#)

ACTORS

The governance should rely on the interplay between three components:

[EOSC Board](#)

[EOSC Executive Board](#)

[Stakeholders Forum](#)

→ Support to the Executive Board and the Governance Board by the [EOSC Secretariat](#)

Key issues for the next 2 years

New **governance model** and best-fit **legal vehicle** for after 2020

Financing model(s) to sustain EOSC services in the long run

Rules of participation that will govern future EOSC transactions

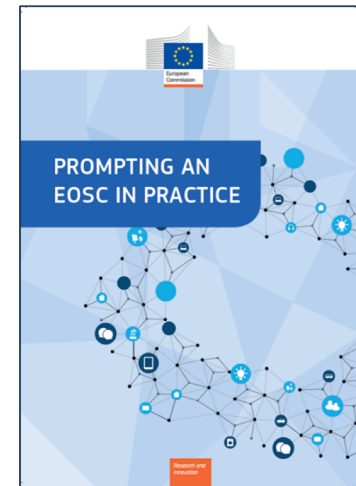
Coordination of **EOSC-relevant national initiatives**

Evolution of the **EOSC Portal** and its interfaces

FAIR digital objects: turning principles into practice

Widening strategy for the **EOSC user base**

EOSC in the **international context**



Turning FAIR into Reality: Report and Action Plan: <https://doi.org/10.2777/1524>
Prompting an EOSC in practice: https://ec.europa.eu/info/events/2nd-eosc-summit-2018-jun-11_en

November 2018 – Launch of the EOSC

The Vienna Declaration on the European Open Science Cloud



The Vienna Declaration on the European Open Science Cloud

Vienna, 23 November 2018

We, Ministers, delegates and other participants attending the launch event of the European Open Science Cloud (EOSC):

- 1 **Recall** the challenges of data driven research in pursuing excellent science as stated in the "EOSC Declaration" signed in Brussels on 10 July 2017.
- 2 **Reaffirm** the potential of the European Open Science Cloud to transform the research landscape in Europe. Confirm that the vision of the European Open Science Cloud is that of a research data commons, inclusive of all disciplines and Member States, sustainable in the long-term.
- 3 **Recognise** that the implementation of the European Open Science Cloud is a process, not a project, by its nature iterative and based on constant learning and mutual alignment. Highlight the need for continuous dialogue to build trust and consensus among scientists, researchers, funders, users and service providers.
- 4 **Highlight** that Europe is well placed to take a global leadership position in the development and application of cloud services for Science. Reaffirm that the European Open Science Cloud will be both European and open to the world, reaching out over time to relevant global research partners.
- 5 **Recall** that the Council in its conclusions of 29 May 2018 - welcomed the implementation roadmap and the federated model for the European Open Science Cloud. It invited the Commission and all Member States to set up a common governance framework that ensures participation of stakeholders from the research community based on principles of transparency, openness and inclusiveness and an effective involvement of all Member States.

Contact

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congress@univie.ac.at

—————DOWNLOAD—————
The Vienna Declaration
on the European Open
Science Cloud

The Vienna Declaration on the EOSC /2

We therefore:

- 7 Resolve** to harness the many ongoing and planned activities at EU and Member States level to cooperate in establishing an inclusive partnership with a view to developing the European Open Science Cloud as a federated infrastructure that can enhance value-based, open, trusted, user-centric digital services across borders within the Digital Single Market (DSM).
- 8 Invite** all Member States, as well as public and private stakeholders in Europe, to support actively this joint effort and the new European Open Science Cloud governance structure for a successful implementation of the initiative.
- 9 Call** for the European Open Science Cloud to provide all researchers in Europe with seamless access to an open-by-default, efficient and cross-disciplinary environment for storing, accessing, reusing and processing research data supported by FAIR data principles.
- 10 Commit** to support service provision for the European Open Science Cloud by helping connecting relevant national and disciplinary nodes to the pan-European level.
- 11 Reaffirm** the potential of the European Open Science Cloud to enable first-class data-driven science and to stimulate new business models benefiting our society and the economy. Recognise that such services will create opportunities for both public and private sectors, notably by intensifying reuse of public sector information while preserving data integrity, and ensuring access, transparency within and across borders.

We therefore declare to work together towards realising the potential of the European Open Science Cloud for the benefit of citizens, society and the economy.

The tangible added value of the EOSC Launch/ 1

First

*The **Declaration on the EOSC** has officially been proclaimed by the Austrian Presidency of the Council, then reiterated by the Bulgarian and Rumanian representatives and has finally been **accepted**. The*

*Declaration is now official and it is an **official starting point** of the EOSC for 28 Partners and it is relevant as orientation **for all Institutions working according to the Open Science movement which are complying with the FAIR principles**.*

The tangible added value of the EOSC Launch / 2

Second

*During the launch It has been stated, **that the researchers are not the solely main stakeholders of the EOSC.***

*The fact, that a the Launch **has taken place in a research library** is underlining the fact that e.g. “libraries” (as research and teaching supporting institution, and as holders of qualified and structured data – with related services) are among the main stakeholders.*

*Furthermore the EOSC through its Declaration is addressing **all** involved stakeholders, which are: individual data producers, infrastructures providers, academic institutions, funders, enterprises N.G.O.s*

*From another point of view: **it is not only “big” research infrastructures**, who will provide scientific data to the EOSC, small and medium entities such as libraries, institutes, enterprises serving the academic communities, NGOs, etc. should also be considered.*

The tangible added value of the EOSC Launch / 3

Third

*The Launch marks a timeline. Starting with the Launch we all now **start with a period of time of two years**, in which the EOSC will be really made ready for use.*

*We all have now **two years time to prepare further developments**, till 2020.*

*In other words: the EOSC has been launched, but with an **interim management**, which will finalize this stage.*

The tangible added value of the EOSC Launch / 4

Fourth

The Launch/start marks a period of time in which:

- 1. The executive board has been formed (the members have been appointed);*
- 2. The Governing Board has been appointed and is now operative.*
- 3. The Stakeholders Forum has been installed, as a body;*
- 4. EOSC Working Groups;*
- 5. The EOSC Secretariat has been installed (see “Fifth”);*

*Both first two bodies **have** now to work. Therefore main tasks should be defined according points one to four.*

The tangible added value of the EOSC Launch /5

Fifth

Starting with Q1/2019 a Secretariat has been installed.

This unit will support the activities of the Executive Board and the Governing board.

*This will be crucial for the functioning of the EOSC, because through this unit single institutions will have the opportunity to **liaise with the EOSC.***

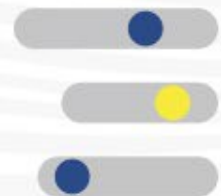
Financing of the EOSC

Phase 1, until 2020:

- the Commission will invest EUR 300 million to support the core functions of the EOSC as per milestones
- Member States would flag the national initiatives that they want to federate into the EOSC (e.g. the work of the Helmholtz Data Alliance); and the resources they are willing to provide in kind
- Research funders would start making costs eligible for FAIR data only

Phase 2, after 2020:

- To explore a mix of funding including possibly deposit fees from national funders
- Based on a full cost estimate for the running of the EOSC, conducted by the EOSC governance framework in Phase 1



EOSCsecretariat.eu

Setup and management of the EOSC Secretariat supporting the EOSC Governance

Secretariat support services



EOSCsecretariat.eu has received funding from the European Union's Horizon Programme call H2020-INFRAEOSC-2018-4, grant Agreement number 8316441

[ABSTRACT

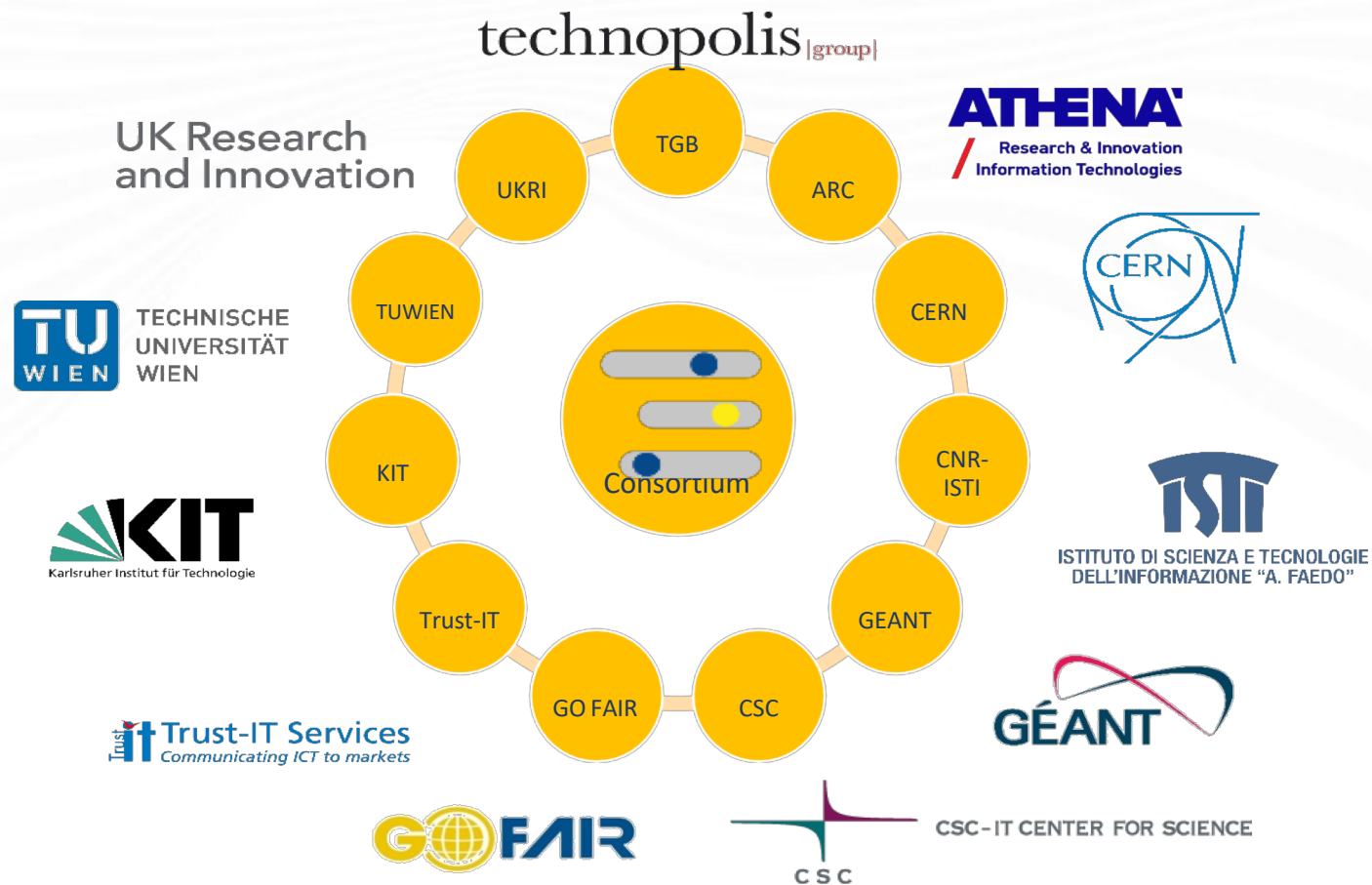
The Secretariat is the result of the call: **INFRAEOSC-05-2018-2019 Type of action: CSA**

The EOSC Secretariat is characterised by being neutral towards the community it is serving and by having a pragmatic approach that is fully dedicated to realising the outcomes of the EOSC design as stated in the Implementation Roadmap Staff Working Document and adopted Council Conclusions to deliver an operational open science cloud for all European stakeholders. It will sustain the efforts of the Executive Board and addresses the need for the set-up of an operational framework supporting the overall Governance of the EOSC

The Secretariat has been installed for two years. The EOSC Secretariat will provide the cornerstone of support to this framework for the duration of the initial phase and the support for the establishment of the second phase. It has a lean management structure and it is composed of a balanced selection of 11 knowledgeable partners who are able to understand and serve all sectors contributing to the future EOSC, and have strong connections to the broader global community, as science is a global endeavour.

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Project partners



Setting the scene for 2021+

The EOSC Secretariat, effectively delivering 360° support to the EOSC Governance (**Executive Board** and **Governance Board**), works openly and inclusively together with communities to co-create an all-encompassing European Open Science Cloud.



EOSC Secretariat, independent, neutral, flexible

- Interim character (2019-2020), with an enabling and advisory approach
- Working for and under the supervision of the Executive Board and supporting the Governing Board
- Supporting a user centric EOSC implementation, with the Co-creation budget at the command of the EB

At the heart of the EOSC



EUROPEAN OPEN SCIENCE CLOUD



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CESAER



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John Womersley
European Spallation
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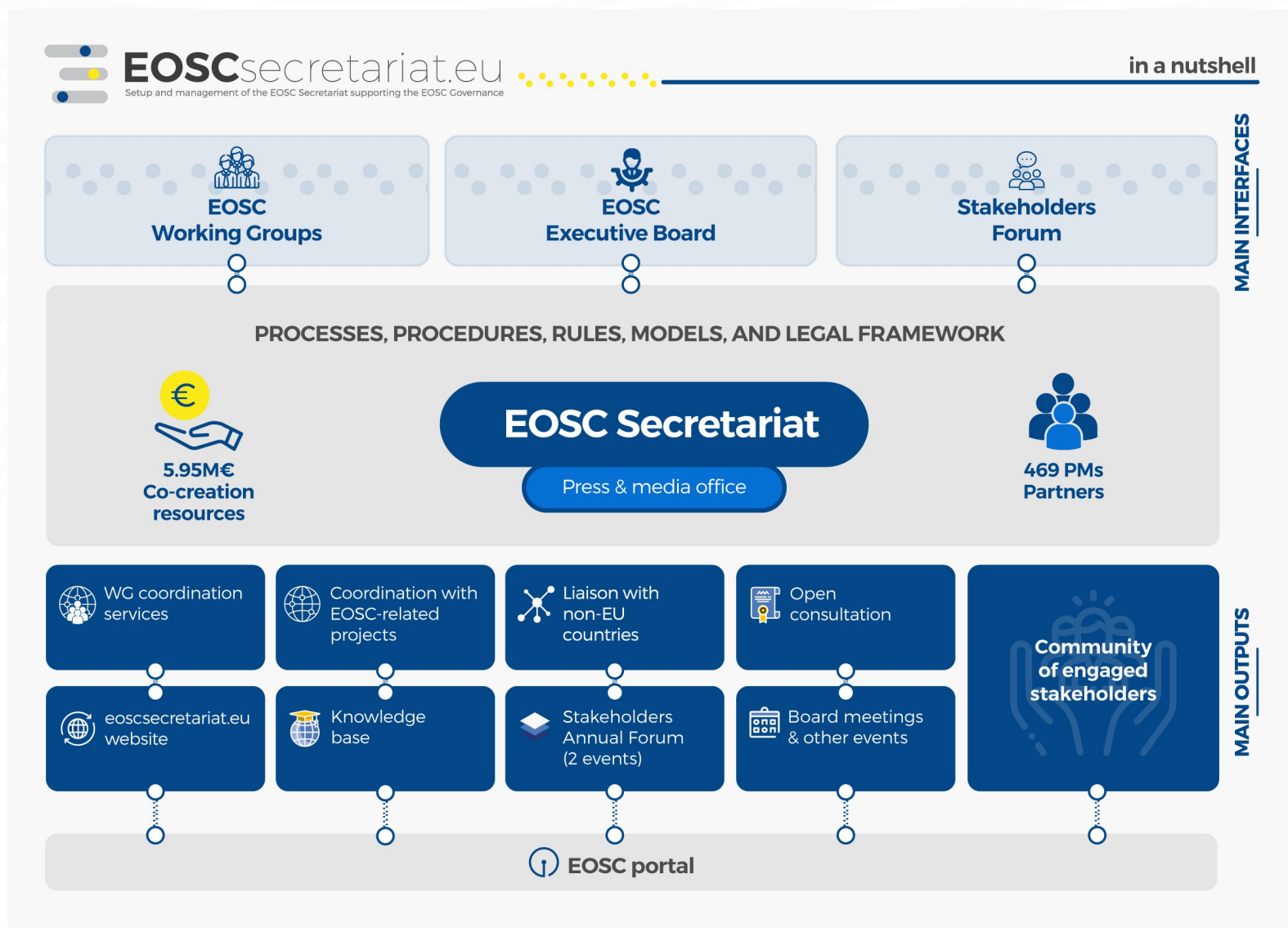


Jan Hrusak,
Individual Expert

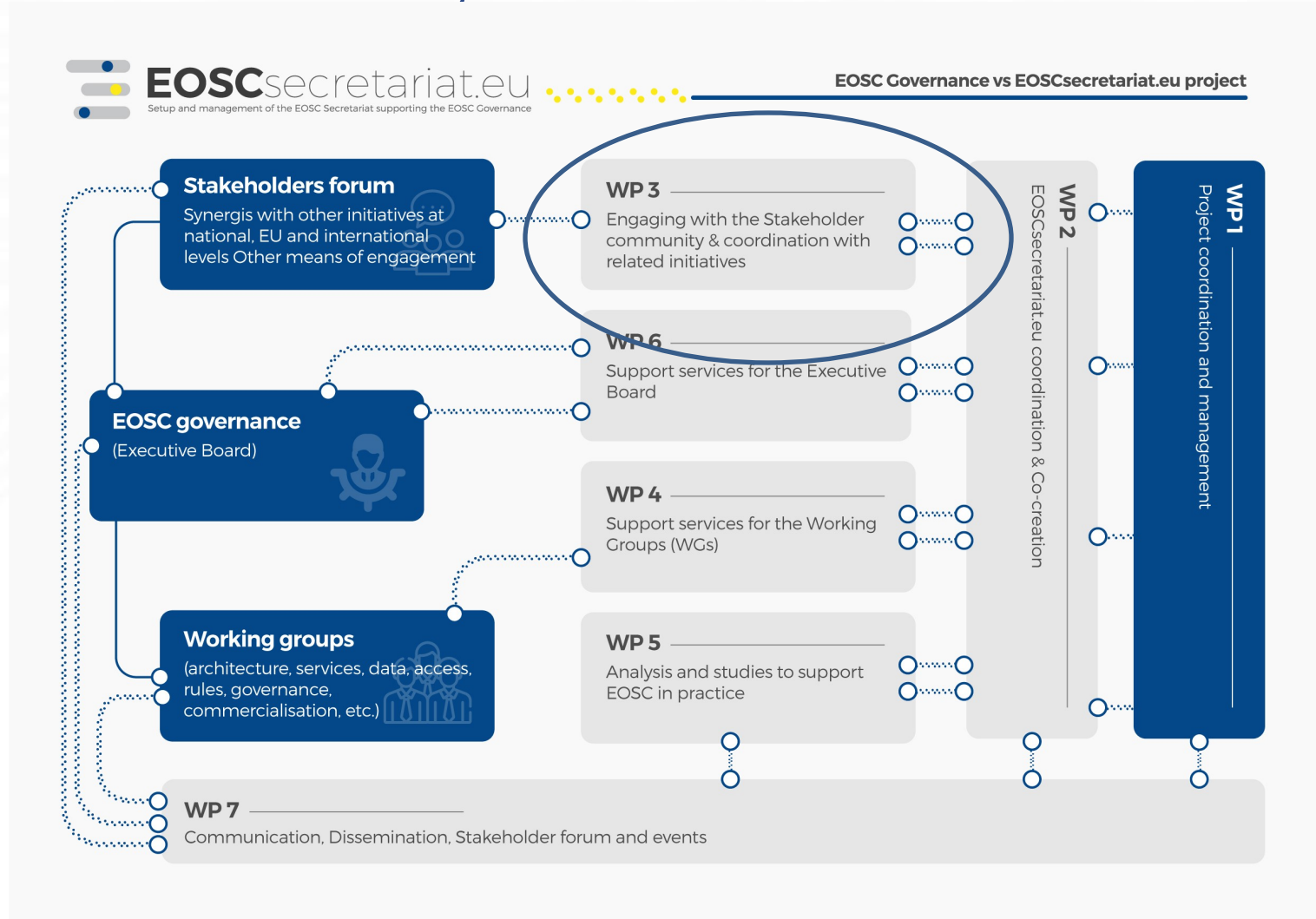
Executive Board

https://ec.europa.eu/info/news/results-call-applications-selection-members-expert-group-members-executive-board-eosc-2018-nov-23_en

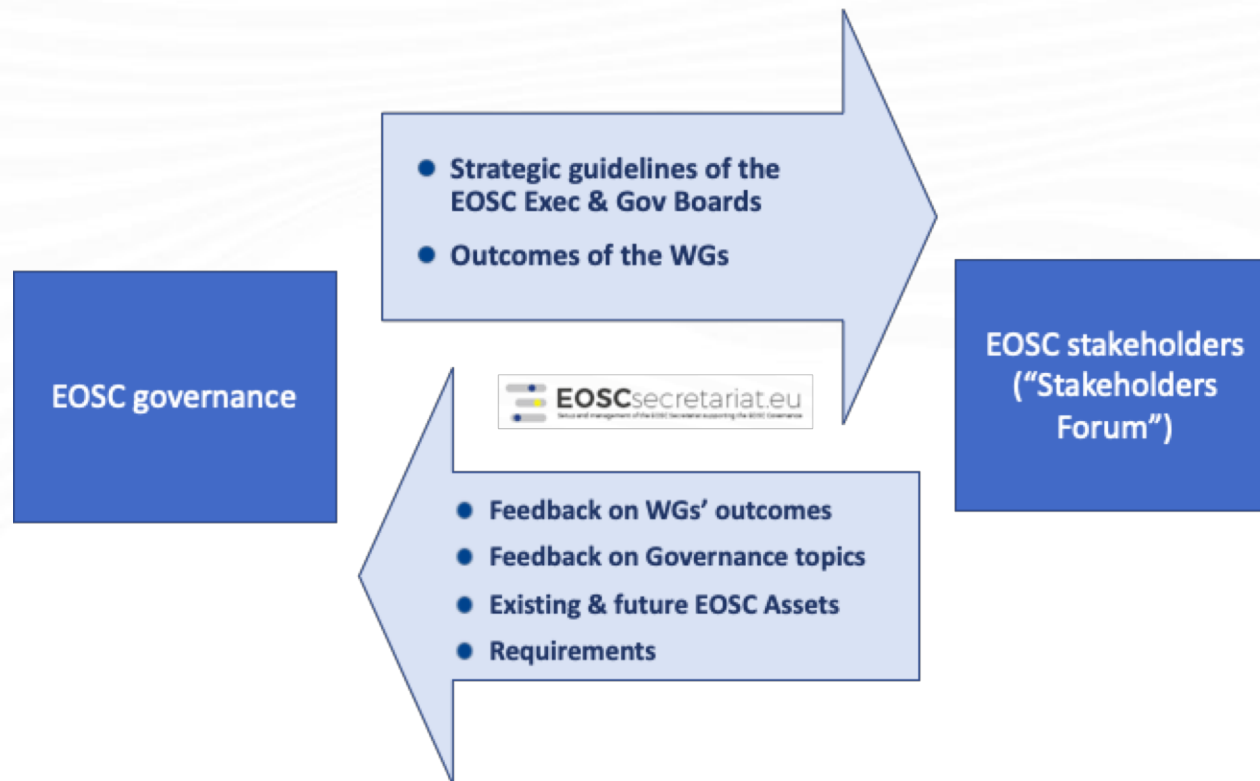
Relation with the EOSC Governance



EOSC Secretariat Project Architecture



EOSC Secretariat: modus operandi



Systematic dialogue via a contact point per addressed stakeholders group (through “Ambassadors” and ongoing online consultations)

Addressed stakeholders

Policy makers & Funding bodies (incl. EC)

National & EU e-/digital/infrastructures

National & EU funded projects & initiatives

Research & Academia Organisations

Researchers & Research Support

Industry and third sector

Support Services for the Stakeholder Forum

"Engaging with the Stakeholders community & coordination with related initiatives" means....

- Coordinate these efforts and initiatives in order to....
- Raise awareness and enhance coordination with and among infrastructure initiative in the Member States (IT - CNR leads)
- Raise awareness and enhance coordination with EU infrastructure initiatives / ESFRI, Elnfra, Thematic Clouds, etc). (DE - KIT Leads)
- Raise awareness and enhance coordination with International infrastructure initiatives (GO-FAIR Leads)
- Engaging with Industry (CERN Leads)
- Engaging with Researchers (AT - TU-Vienna leads)
- Support Services for the Stakeholder Forum (IT- CNR Leads)

..... and prepare the transition to new "Stakeholder-based governance"

Setup of **co-creation activities** and other activities to support EOSC...

Similar to an “Open call” approach, this task is responsible for running the Co-creation process, under which the Co-creation budget will be utilised for participatory, project delivery and non-foreseen activities

..... prepare the transition to new "Stakeholder-based governance"

How can the involved **Stakeholders** help?

- Identifying priority topics
- Sharing stakeholder contacts
- Putting the players in contact with relevant initiatives & projects
- Promoting participation in all initiatives
- Requiring responses to collected suggestions by EOSC Governance Board
- Fostering the creation of WGs addressing collected suggestions
- Participating in the co-creation processes

If you want to know more about **EOSCsecretariat** visit us at www.EOSCsecretariat.eu and subscribe to our network

You can also get in touch with us at:



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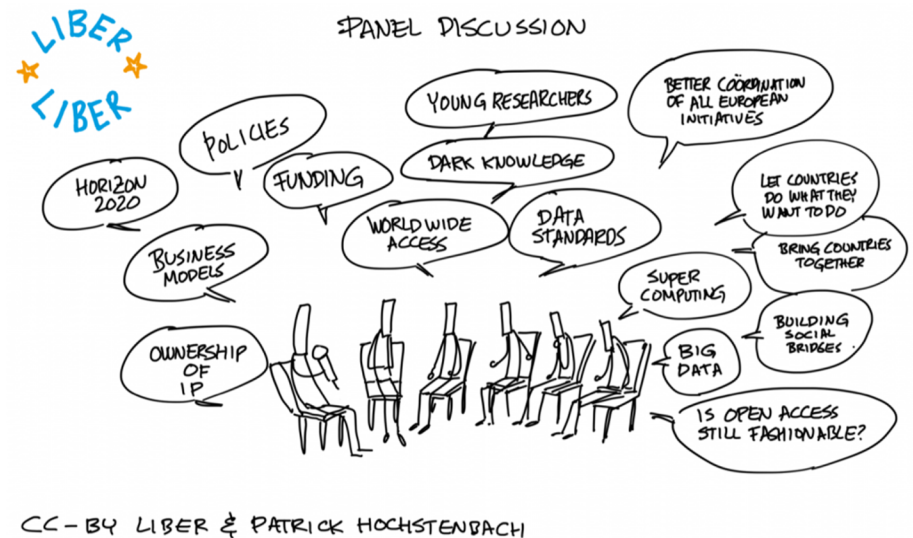


LinkedIn [EOSC Secretariat](https://www.linkedin.com/company/eosc-secretariat)



Thank you

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Austrian participation to the EOSC Secretariat: WP2, WP3

Office TU Wien – Participants: Andreas Rauber (PI) (TU Wien), Barbara Sánchez Solís (TU Wien), Paolo Budroni (University of Vienna)

www.eoscsecretariat.eu

ANSWERING QUESTIONS

Example: EOSC-Pillar

Project EOSC-Pillar. A valid support for the implementation of the EOSC

EOSC-Pillar gathers representatives of the fast-growing national initiatives for coordinating data infrastructures and services in Italy, France, Germany, Austria and Belgium to establish an agile and efficient federation **model for open science services** covering the full spectrum of European research communities.

The work of this consortium aims to implement some of the main pieces of the EOSC within a science-driven approach.

EOSC-Pillar will act by federating national initiatives through common policies, FAIR services, shared standards, and technical choices, EOSC-Pillar will be a catalyst for science-driven transnational open data and open science services offered through the EOSC portal.

EOSC Pillar will combine these initiatives, who represent research communities in each country, with use cases of transnational networks working to implement FAIR data practices. Through the coordination of national initiatives, EOSC-Pillar will be able to support the gradual alignment of policy and practice among countries and compliance to EOSC standards.

These initiatives will emanate the promotion of FAIR data practices and services across scientific communities, sharing best practice, and igniting opportunities for interdisciplinary approaches in the EOSC.

EOSC-Pillar. A valid support for the implementation of the EOSC

Duration of the project: 2 years (Start: 2019)

Overall coordination of the consortium: GARR (*National NREN*), Italy

18 Members:

Austria: Universität Wien

Belgium: Universiteit Gent

France: Cines, Centre National de la Recherche Scientifique, Institut National de la Recherche Agronomique, Institut National de la Recherche Informatique et Automatique, Institut Français de Recherche pour l'Exploitation de la Mer, Institut National de la Santé et de la Recherche Médicale

Germany: Karlsruher Institut für Technologie (KIT), Deutsches Klimarechenzentrum, Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung E.V., Helmholtz Zentrum Potsdam Deutsches Forschungszentrum GFZ

Italy: Consiglio Nazionale delle Ricerche, CINECA, Istituto Nazionale di Fisica Nucleare, Euro Mediterranean Center on Climate Change, Trust IT

Details

- **Engage** with **relevant communities** to ensure that **their needs, requirements, advice and commitments** are reflected and passed on to the EOSC and Executive Boards and to the Working Groups
- To support coordination and consultation with **strategic, thematic, EU or global initiatives**
- To feed the information and the results of the liaison, analysis and engagement activities **into other WPs of the project**
- To support and contribute to the structuring of the EOSC Stakeholders Forum laying the ground for the **transition to the next phase of the governance**.

