

# 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

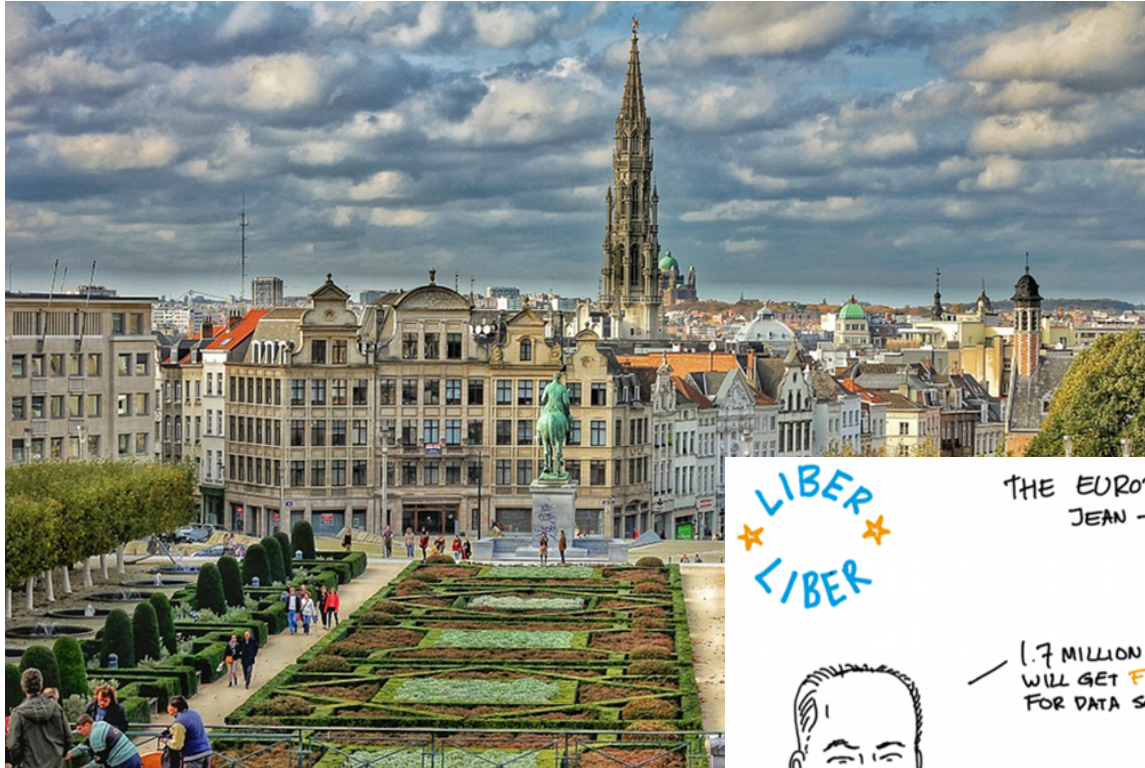
*Addressed main topics:*

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]

# 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

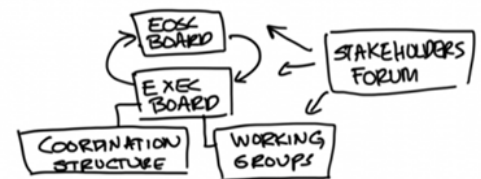
WE STARTED IT ALL IN 2016  
AND LAUNCH THIS YEAR IN 2018  
NOT EVERYTHING WILL BE  
UP AND RUNNING  
IN '2020 WE WILL REACH  
THE FULL IMPLEMENTATION

WITHOUT FAIR DATA  
THERE IS NO EOSC

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



MANAGEMENT IN THREE LAYERS



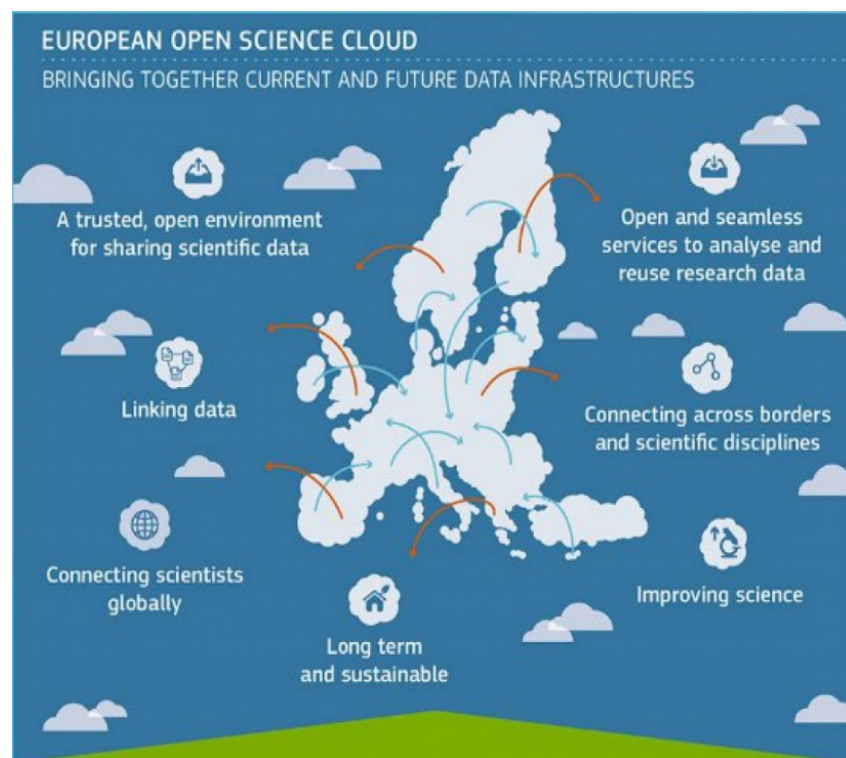
CC-BY LIBER & PATRICK HOCHSTENBACH

# 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)



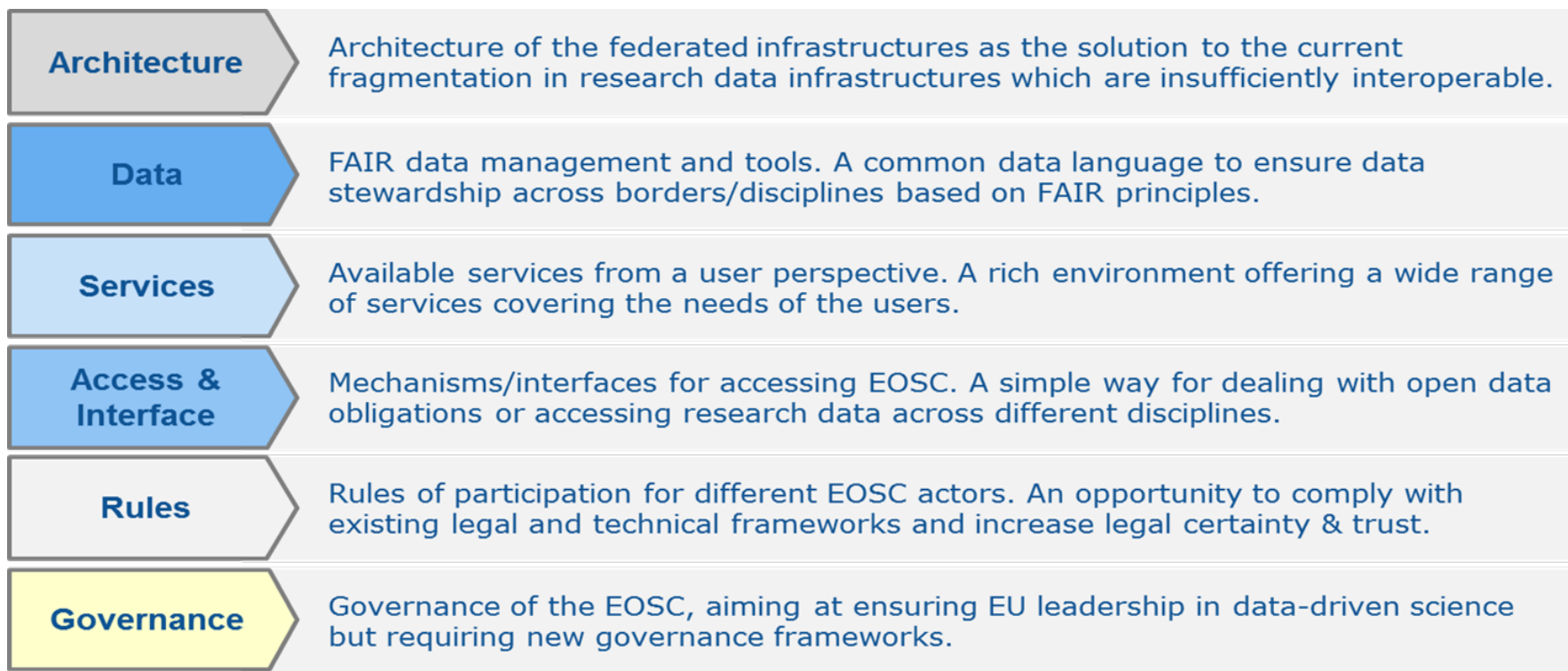
## **The EOSC is not a new dedicated infrastructure or software package:**

- it is a process of making research data in Europe accessible to all researchers under the same conditions of use and usage.
- gives a strong push in Europe towards a culture of open research data that are findable, accessible, interoperable and reusable (FAIR)
- networking the existing European data infrastructures, integrating high-capacity cloud solutions, and in due course, widening the scope of these services to include users from the public sector and industry
- efforts particularly directed on *Data Culture, Research Data Services, Federated Architecture and co-Funding.*

CREDITS: Budroni/Burgelman/Schouppe, March 2019



# EOSC Model: 6 lines of action - These action lines influence the development of the EOSC



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 - the intention is to go for a gradual expansion of its service offering (currently presenting a joint catalogue of more than 150 services and having more than 50 providers in its market place). This prototype portal acts as an entry point to the EOSC.

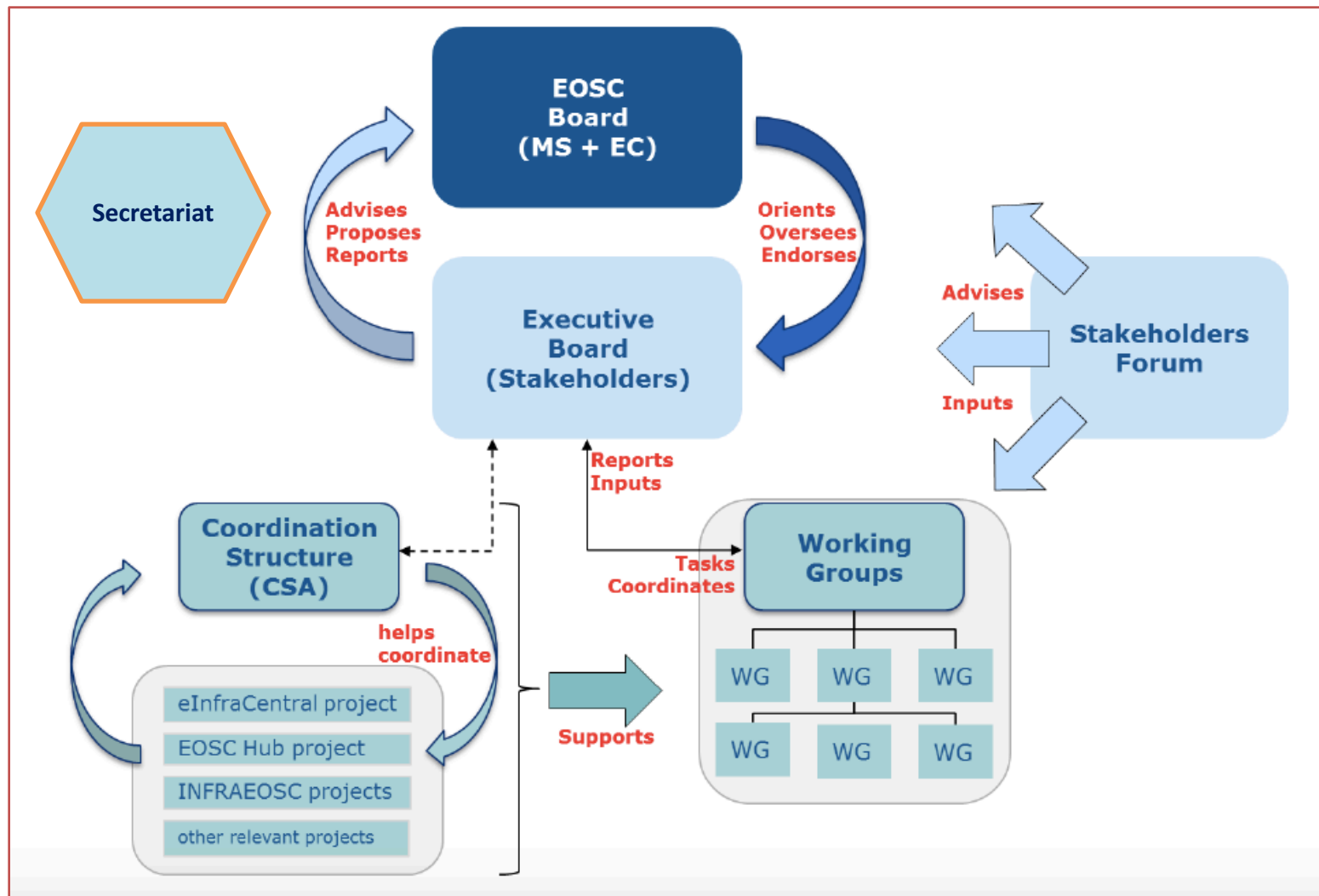


About Governance Services & Resources Policy EOSC in Practice Media For providers

The screenshot shows the homepage of the European Open Science Cloud (EOSC) portal. At the top left, the text "EOSC relies on 6 action lines:" is displayed. Below it, a link reads "Learn more in the EC Staff Working Document". A large blue oval highlights the central text: "ARCHITECTURE, DATA, SERVICES, ACCESS & INTERFACE, RULES, GOVERNANCE". Below this, the heading "ACCESS EOSC SERVICES & RESOURCES" is followed by four icons representing different service categories: NETWORKING (a network diagram), COMPUTE (a laptop with a gear), STORAGE (a server rack), and SHARING & DISCOVERY (a cloud with a magnifying glass).

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

# The EOSC Governance 2019-2020





# The EOSC Governance 2019-2020

Advise on the implementation

Steer the implementation

Contribute to the implementation



Supports

Supports

Supports

**EOSCSecretariat.eu**  
Coordination and Support Action

# Roles

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

# 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

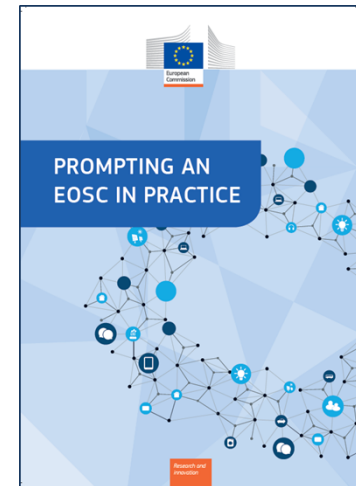
Coordination of **EOSC-relevant national initiatives**

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](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

Launch of the European Open Science Cloud (EOSC)  
University of Vienna  
Library, main reading room  
Universitätsring 1  
A-1010 Vienna  
T: +43-1-4277-17677  
congress@univie.ac.at

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

*The Vienna EOSC Declaration was conceived by Paolo Budroni, University of Vienna and Stefan Hanslik, Austrian Federal Ministry for Education in close cooperation with the European Commission. Vienna, 2018*

Windows



# 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

*The Declaration on the EOSC has been officially proclaimed by the Austrian Presidency of the Council of the EU, then reiterated by the Bulgarian (former Presidency) and Rumanian (following Presidency) representatives and has finally been endorsed by acclamation of all the participants.*

*The Declaration **marks the starting point** of the implementation of the EOSC. It provides a relevant landmark for all institutions in Europe willing to advance Open Science and implement an internet of FAIR research data.*

## The tangible added value of the EOOSC Launch / 2

*The Declaration underpins the fact, that the EOOSC is not a project but a process aiming at the convergence of research data policies across Europe. As such it is dynamic, subject to constant evolution*

*The Declaration underlines **the involvement of the European Commission, the Member States and the EU Council** in the elaboration process of the EOOSC*

*The Declaration is explicit on the supporting role of the EOOSC to realise a **Digital Single Market (DSM)** in Europe: This reference to the DSM offers a **link to the Sustainable Development Goals of the United Nations, especially goals number 4, 5 and 9***

## The tangible added value of the EOSC Launch / 3

*The Declaration is explicit on the **inclusive character** of the EOSC process, which shall influence future rules of engagement in the EOSC.*

*The Declaration recalls the focus of the EOSC on the needs of the researchers, contributing in a **concrete way to an internet of FAIR data***

## The tangible added value of the EOSC Launch / 4

*A timeline of 25 months (till December 2020) has started in Vienna for the new governance to set the EOSC into motion towards an operational capacity after 2020. In other words, the EOSC implementation phase has started, but with an interim Governance Framework mandated to steer the implementation till end 2020 and to help for the transition post-2020*

- 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;*

# The tangible added value of the EOSC Launch /5

*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.*



# Resuming: EOSC Governance 2019-2020

Advise on  
the implementation

Steer  
the implementation

Contribute to  
the implementation

## Stakeholder Forum

Users, Service Providers,  
Public sector, Industry,  
SMEs, etc.

## Governance Board

MS/AC delegates and the  
European Commission

Proposes  
Monitors  
Reports

Reviews  
Endorses  
Orients

Inter  
act

EU-funded projects

Nationally-funded projects  
and initiatives

Other projects and  
initiatives

Extended Coalition  
of Doers

## Working Groups

WG

WG

WG

WG

## Executive Board

European stakeholder organisations  
and individual experts)

Supports

Supports

Supports

[EOSCSecretariat.eu](https://www.eoscsecretariat.eu)  
Coordination and Support Action

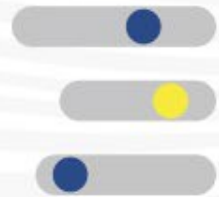
# Financing of the EOSC

## 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



# **EOSC**secretariat.eu

Setup and management of the EOSC Secretariat supporting the EOSC Governance

## Secretariat support services



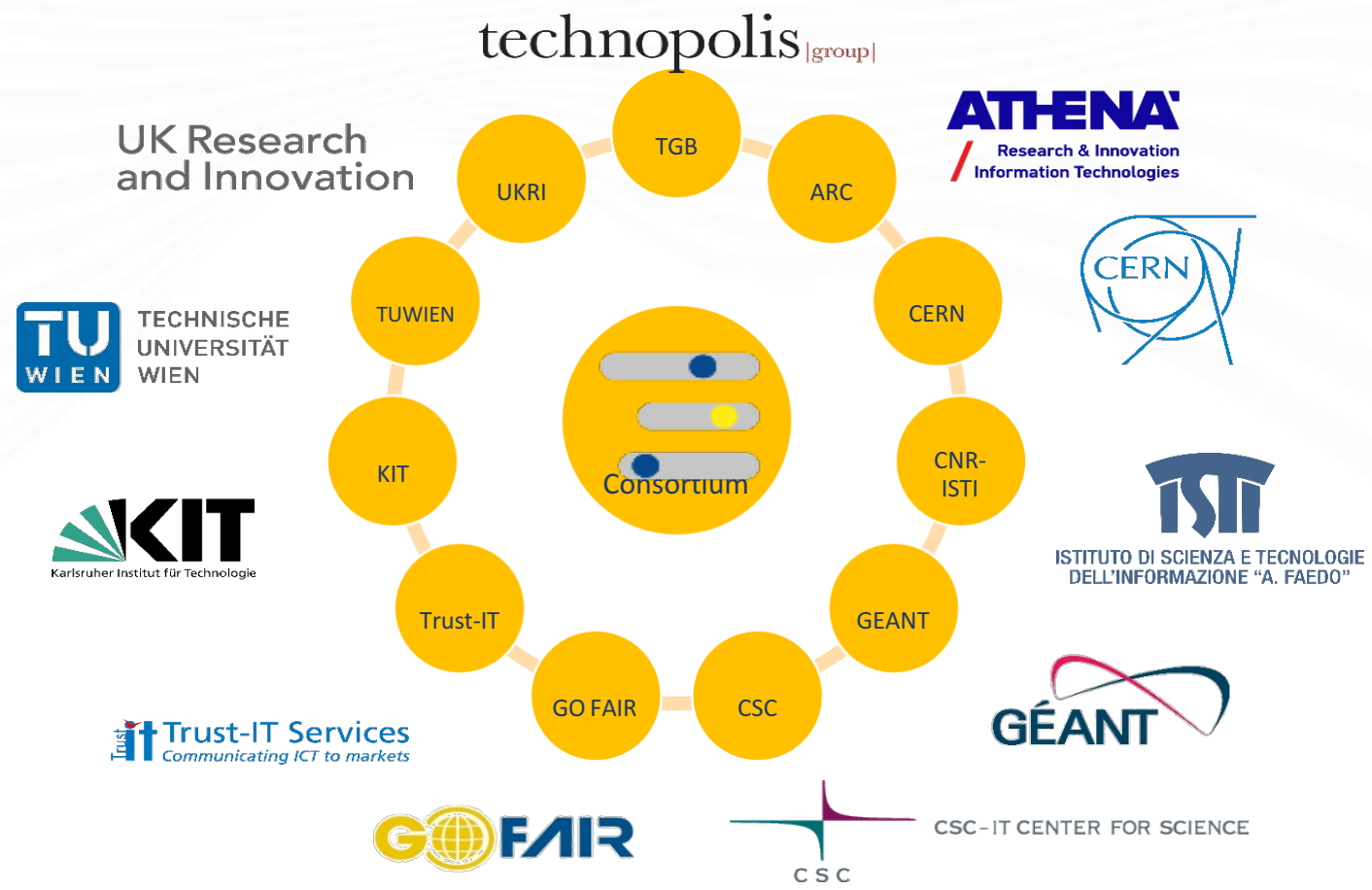
[ABSTRACT

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.

]

# Project partners



# 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



**CHAIR**  
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CESAER



**VICE CHAIR**  
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GÉANT



Ronald Dekker,  
CESSDA ERIC



Rupert Lück  
EMBL



John Womersley  
European Spallation  
Source ERIC



Natalia Manola,  
OPENAIRE



Juan Bicarregui,  
Research Data  
Alliance



Stephan Kuster,  
Science Europe



Sarah Jones,  
Individual Expert



Jean-Francois  
Abramatic,  
Individual Expert

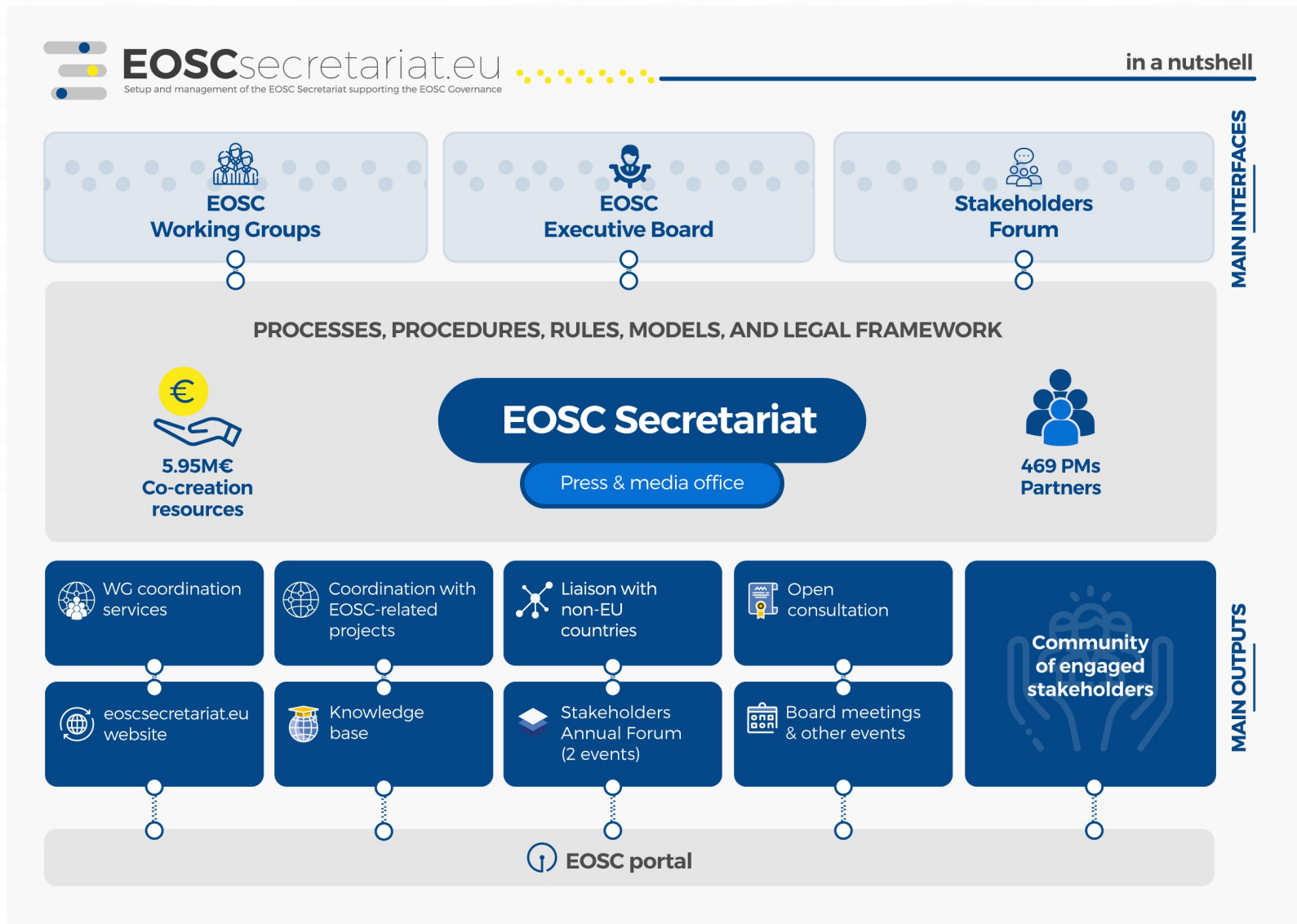


Jan Hrusak,  
Individual Expert

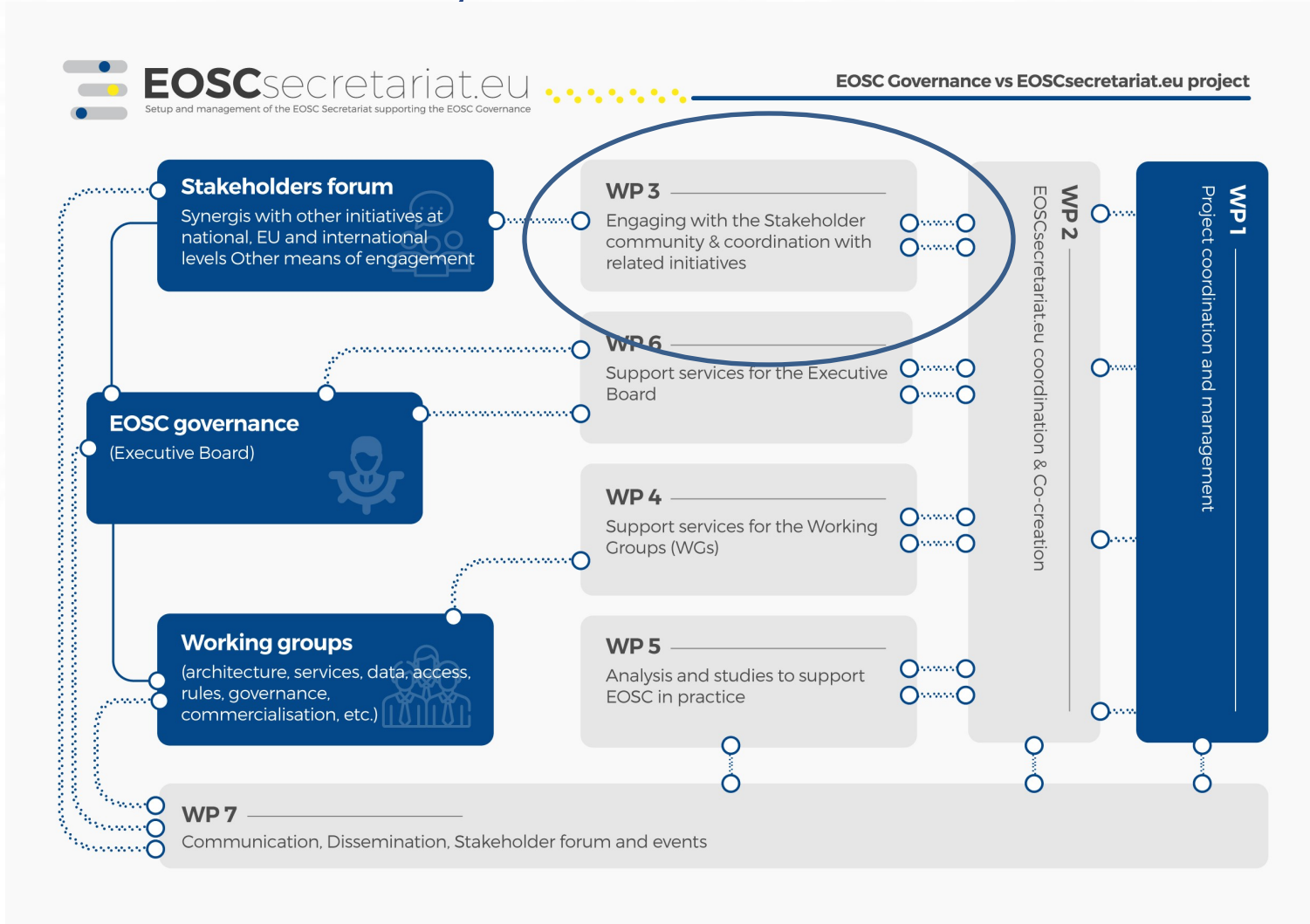
## Executive Board

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

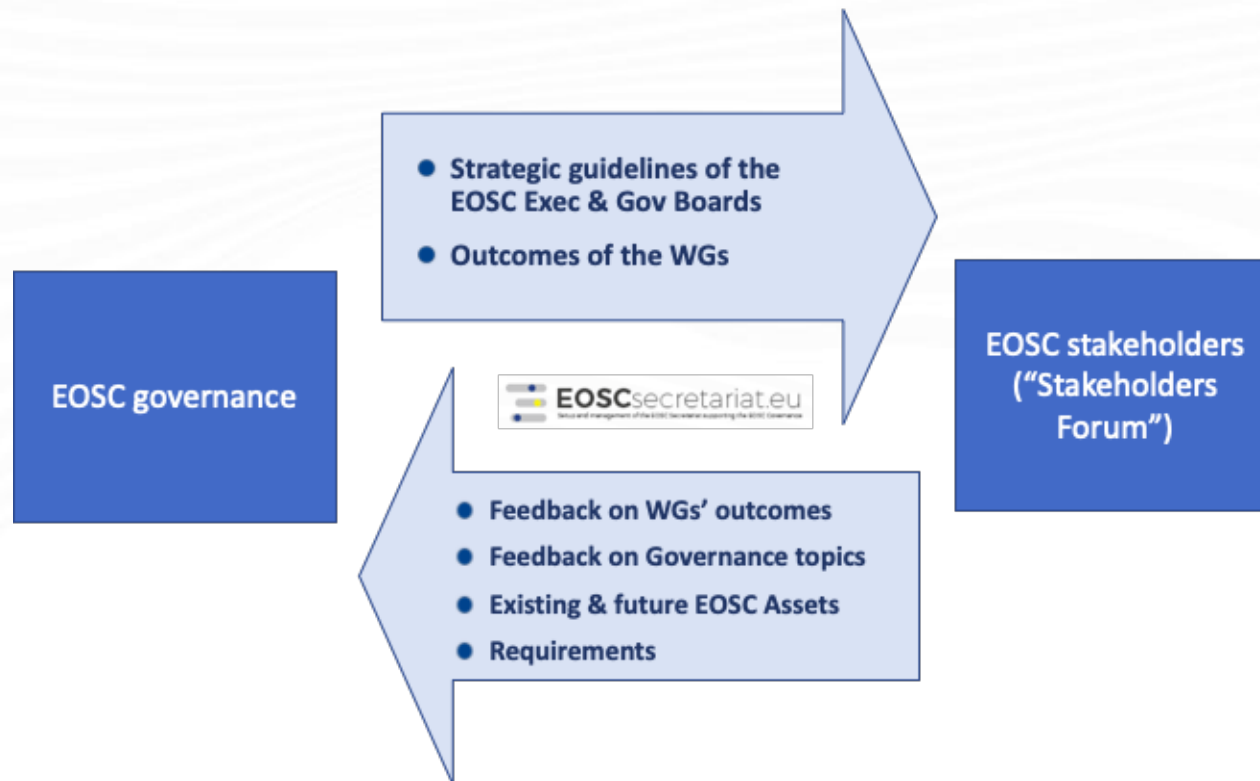
# Relation with the EOSC Governance



# 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"



# Generate dissemination activities to showcase EOSC in practice and WG achievements to communities, in order to...

- to facilitate the transition towards a more Stakeholder-driven EOSC implementation
- to open a direct communication channel between the EOSC governance and the stakeholders
- to disseminate the findings and strategic directions of the EOSC governance
- to provide a forum to foster broader adoption of EOSC services and promote user-driven innovation gathering user requirements and expectations and providing input on operational implementation
- to discuss and contribute to the outputs of the EOSC Working Groups



## 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

## ..... How can the involved **Stakeholders** help?

- *Funding for stakeholders and experts to organise activities (public consultations, targeted consultations, surveys, focus groups, events, etc.)*
- *Opportunity to join the EOSC Liaison Groups and relevant EOSC working groups*
- *Collection of input for the studies on rules of participation, business models, and legal organisation*

If you want to know more about **EOSCsecretariat** visit us at [www.EOSCsecretariat.eu](http://www.EOSCsecretariat.eu) and subscribe to our network

You can also get in touch with us at:



[info@eoscsecretariat.eu](mailto:info@eoscsecretariat.eu)



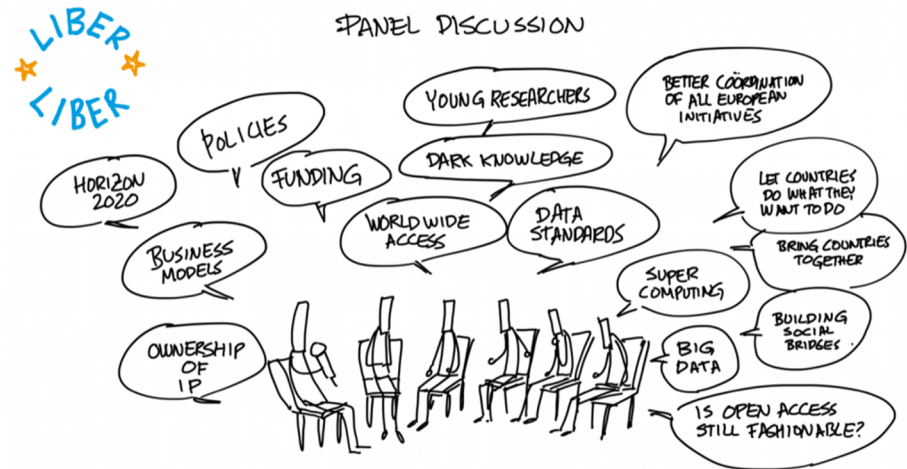
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# Thank you

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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](http://www.eoscsecretariat.eu)