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

Paolo Budroni (University of Vienna)
Linking Open Science in Austria
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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)
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 todays 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
# EOSC Model: 6 lines of action - These action lines influence the development of the EOSC

<table>
<thead>
<tr>
<th>Architecture</th>
<th>Architecture of the federated infrastructures as the solution to the current fragmentation in research data infrastructures which are insufficiently interoperable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data</td>
<td>FAIR data management and tools. A common data language to ensure data stewardship across borders/disciplines based on FAIR principles.</td>
</tr>
<tr>
<td>Services</td>
<td>Available services from a user perspective. A rich environment offering a wide range of services covering the needs of the users.</td>
</tr>
<tr>
<td>Access &amp; Interface</td>
<td>Mechanisms/interfaces for accessing EOSC. A simple way for dealing with open data obligations or accessing research data across different disciplines.</td>
</tr>
<tr>
<td>Rules</td>
<td>Rules of participation for different EOSC actors. An opportunity to comply with existing legal and technical frameworks and increase legal certainty &amp; trust.</td>
</tr>
<tr>
<td>Governance</td>
<td>Governance of the EOSC, aiming at ensuring EU leadership in data-driven science but requiring new governance frameworks.</td>
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Source: Implementation Roadmap for the European Science Cloud (Staff Working Document SWD(2018) 83), 14 March 2018:  
http://ec.europa.eu/research/opencoe/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.

https://www.eosc-portal.eu/
The EOSC Governance 2019-2020

Secretariat

EOSC Board (MS + EC)

Executive Board (Stakeholders)

Stakeholders Forum

Coordination Structure (CSA)

Working Groups

Advises Proposes Reports

Orients Oversees Endorses

Reports Inputs

Tasks Coordinates

Supports

eInfraCentral project
EOSC Hub project
INFRAEOSC projects
other relevant projects

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<table>
<thead>
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<th>Role</th>
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<tbody>
<tr>
<td>EOSC Board</td>
<td>To <strong>oversee &amp; steer</strong> the EOSC strategy and implementation  [→Review and decide]</td>
</tr>
<tr>
<td>EOSC Executive Board</td>
<td>To <strong>help &amp; support</strong> the EOSC strategy, implementation, monitoring and reporting on progress of implementation [→Elaborate and propose]</td>
</tr>
<tr>
<td>Stakeholders Forum</td>
<td>To <strong>advise</strong> the Executive Board and reach-out to the scientific community [→Provide input and feedback]</td>
</tr>
<tr>
<td>EOSC Secretariat</td>
<td>To <strong>support</strong> to the EOSC Executive Board and the Governance Board to work openly and inclusively together with communities to co-create an all-encompassing EOSC [→Support and co-create]</td>
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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](https://eosc-implementation-roadmap.eu/).

**ACTORS**
The governance should rely on the interplay between three components:
- [EOSC Board](https://eoscboards.eu/)
- [EOSC Executive Board](https://eoscboards.eu/)
- [Stakeholders Forum](https://eoscboards.eu/)

→ Support to the Executive Board and the Governance Board by the [EOSC Secretariat](https://eoscboards.eu/)
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](https://doi.org/10.2777/1524)

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.

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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
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 EOSC Launch / 2

The Declaration underpins the fact, that the EOSC 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 EOSC:

The Declaration is explicit on the supporting role of the EOSC 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
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 QI/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 fonctionning 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

Executive Board
European stakeholder organisations and individual experts

Working Groups
WG

Interact

EU-funded projects

Nationally-funded projects and initiatives

Other projects and initiatives

Extended Coalition of Doers

Supports

EOSCsecretariat.eu
Coordination and Support Action
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 by a composition 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
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

[Image: Executive Board of EOSC]

Executive Board - Working Groups

- EOSC - FAIR
- EOSC – Architecture
- EOSC – Sustainability
- EOSC – Landscape
- EOSC – Rules of Participation
Relation with the EOSC Governance
EOSC Secretariat Project Architecture

**Stakeholders forum**
Synergis with other initiatives at national, EU and international levels Other means of engagement

**EOSC governance**
(Executive Board)

**Working groups**
(architecture, services, data, access, rules, governance, commercialisation, etc.)

**WP 3**
Engaging with the Stakeholder community & coordination with related initiatives

**WP 4**
Support services for the Working Groups (WG)

**WP 5**
Analysis and studies to support EOSC in practice

**WP 6**
Support services for the Executive Board

**WP 7**
Communication, Dissemination, Stakeholder forum and events
EOSC Secretariat: modus operandi

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

To raise awareness about EOSC (with targeted value proposition for stakeholder groups)

To collect and analyse stakeholder input & feedback on EOSC & EOSC WG-related themes and report back to the EOSC EB

To coordinate & facilitate the synergies within and between the stakeholder groups
Addressed stakeholders

- Researchers & Research Support
- National & EU e-/digital/infrastructures
- National & EU funded projects & initiatives
- Research & Academia Organisations
- Policy makers & Funding bodies (incl. EC)
- 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, EInfra, 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

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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”
The Co-creation coverage

Budget reserved for ensuring the participation of the Community in the design of EOSC and in feeding to the Governance structure

Used for:

- project related activities deriving from the DoA
- EOSC related activities as already described in the EOSC roadmap, planning, GOV structure, and the DoA
- Unforeseen costs for all activities; “open” / “flexible” at the request of the EB, the EC, the GB, the community, the secretariat;

In four broad categories:

- Stakeholder engagement & participatory activities
- Organisation of the EB Working Groups
- Studies (biz model, RoP, legal framework, etc.)
- MKT, comms, events & additional support to the Governance
## The Co-creation: foreseen activities

### Relevant activities to be launched with the co-creation process

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
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<tbody>
<tr>
<td>Delivery part of the methodology for the creation of synergies with initiatives</td>
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<tr>
<td>Formation &amp; running of scientific/advisory committees with groups of stakeholders such as ERICs, ESFRIs, academia, etc. to feed to EOSC Governance</td>
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<tr>
<td>Ad/hoc consultations with specific groups of stakeholders on a broad range of issues (e.g. targeted consultation feeding a WG)</td>
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</tr>
<tr>
<td>Collaboration with and funding for stakeholders, projects &amp; experts to organise community engagement – e.g. public consultations, targeted consultations, surveys, focus groups, events, fora, knowledge exchange schemes, mutual learning exercises, etc.</td>
<td></td>
</tr>
<tr>
<td>Introduction of Working Groups and covering of all respective costs</td>
<td></td>
</tr>
<tr>
<td>Working Groups participation (and contribution?)</td>
<td></td>
</tr>
<tr>
<td>Groups or representatives of stakeholders to take up (manage, organise, synthesise, report) activities within the WGs</td>
<td></td>
</tr>
<tr>
<td>Outsourcing of the planned studies (e.g.: Innovative business models, Rules of participation (RoP) – assessing the diversity of actors and situations, Review of legal and organizational framework for the next phase of EOSC)</td>
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</tr>
<tr>
<td>Further studies as requested</td>
<td></td>
</tr>
<tr>
<td>Any non foreseen from the DoA activity to support the EOSC Governance structure (e.g. Munich, EB chairs direct d2d support, T&amp;S)</td>
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<tr>
<td>Communication campaigns, promotion activities and events at national levels and/or niche target audiences</td>
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<tr>
<td>Press &amp; media, EOSC conferences &amp; other project costs (e.g. SG meetings, publications, etc.)</td>
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</tr>
<tr>
<td>Any additional promotional, dissemination or communications action that might be requested by stakeholders</td>
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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**
Next steps (April – Dec. 2019)

- EOSC Stakeholder platform launch (May 2019)
- EOSC value proposition for the different stakeholder groups (May 2019)
- EOSC Secretariat Engagement Plan (June 2019) synchronised with the EB/GB activities
- Execution of individual engagement plans
- On-line report on «Coordination with EOSC stakeholders: feedback, prospects and agreements» open for public consultation
- EOSC Symposium
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You can also get in touch with us at:

- info@eoscsecretariat.eu
- Twitter @EoscSecretariat
- LinkedIn EOSC Secretariat
Thank you

Paolo Budroni, University of Vienna
paolo.budroni@univie.ac.at

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