EUROPEAN UNION

**EUROPEAN RESEARCH AREA
AND INNOVATION COMMITTEE**
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– ERAC –
Secretariat

Brussels, 12 October 2018
(OR. en)

ERAC 1212/18

NOTE

From:	General Secretariat of the Council
To:	Delegations
Subject:	ERAC SWG OSI Opinion on the EOSC Governance Models and Strategic Implementation Plan

Delegations will find in annex the Opinion of the ERAC SWG on Open Science and Innovation on the European Open Science Cloud (EOSC) Governance Models and Strategic Implementation Plan, as adopted by written procedure.

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OPINION OF THE ERAC STANDING WORKING GROUP ON

OPEN SCIENCE AND INNOVATION (SWG OSI) ON THE

EUROPEAN OPEN SCIENCE CLOUD (EOSC)

GOVERNANCE MODELS AND STRATEGIC IMPLEMENTATION PLAN

Elements of the draft on the Strategic Implementation Plan for the European Open Science Cloud were presented and discussed in an informal meeting with the European Commission the 21st of December, 2017.

This draft opinion is based on contributions from Austria, Belgium, Denmark, Estonia, France, Germany, Italy, Malta, The Netherlands, Poland, Portugal, Spain, and United Kingdom.

Between the first drafting of the document and this final version, the Commission released on 14 March 2018 its Staff Working Document "Implementation Roadmap for the European Open Science Cloud"[1]. The governance structure includes three components:

1) an institutional body of representatives of the Member States, the Associated Countries and of the Commission, called the "EOSC Board"[2]. It will ensure strategic orientation, effective supervision, commitment and financial support, and coordination with national initiatives;

2) an expert group including high-level representatives of the stakeholders overseeing the implementation and channeling the coordination, the "Executive Board";

3) a sounding board named "Stakeholders Forum" composed of a larger representation of actors bringing together scientific/user communities, research institutions, research infrastructures, e-Infrastructures and specialized EU agencies, who will provide advice.

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1   https://ec.europa.eu/research/openscience/pdf/swd_2018_83_f1_staff_working_paper_en.pdf
2   The "EOSC Board" was previously referred to as the "Governance Board" of the EOSC. In the interests of clarity, it will be referred to in this document as the "EOSC [Governance] Board".

Furthermore, in the Council conclusions on the European Open Science Cloud of 29 May 2018[3], the European Council invites the Commission and all Member States to set up a governance framework to ensure participation of stakeholders from the research community based on principles of transparency, openness and inclusiveness and an effective involvement of all Member States, in close consultation with the European Research Area and Innovation Committee (ERAC).

Finally, the Commission published on 27 August 2018 a Decision for setting up the Expert Group - Executive Board of the European Open Science Cloud (EOSC) and laying down the rules for its financing[4].

The ERAC SWG OSI opinion focuses on the governance model of the European Open Science Cloud (EOSC). Comments on other relevant aspects require further elaboration, expert knowledge and additional information to provide strategic advice. Furthermore, the governance model of the European Open Science Cloud is a fundamental pillar to ensure a feasible and effective strategic implementation planning.

1.   **GENERAL PRINCIPLES**

It is important to strengthen the **main rationale for EOSC** as a significant step forward to improve the quality, efficiency and impact of scientific research. It represents the visible foundation that motivates further decisions on EOSC design, including its governance and coordination structures. In such context, **communication** towards stakeholders, scientists and lay audience is crucial to the success of the EOSC, and we strongly recommend its inclusion as one strategic dimension in any future implementation planning effort.

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3   http://data.consilium.europa.eu/doc/document/ST-9029-2018-INIT/en/pdf
4   https://www.zbw-mediatalk.eu/wp-content/uploads/2018/09/C20185552-EC-DECISION-EOSC-Excecutive-Board.pdf

EOSC should be characterized by a *"user-centered"* approach; the governance structure should reflect this, and the Strategic Implementation Plan should be carefully defined to ensure users' engagement and commitment to EOSC. While it is important to encourage users' engagement with the EOSC, the views of the wider stakeholder community are key to the development of a Strategic Implementation Plan, and they should have a more active role in the EOSC design and implementation process. Consequently, standards, procedures, etc. should be defined by strong cooperation with scientific/research communities and not only by EOSC founders. It is important to prevent the creation of an over-centralized approach.

There is a substantial risk of divergence, and disappointment, in moving from vision and the policy discourse to implementation. Therefore, the **two stages approach for the EOSC governance is a solution**. Phase 1 would be mainly concerned about the process of developing the EOSC. Phase 2 would be mainly concerned with the implementation, management and operational aspects of the EOSC. However, responsibilities, activities and timescales in both phases require substantial further clarification and analysis.

Federation and interoperability of existing infrastructures is a critical point in the configuration and development of EOSC. It is the only possible solution for the integration of existing initiatives but **existing infrastructures should maintain their governance and funding mechanisms**.

D. EOSC Model: Definitions of architecture 1/3

The EOSC federating core is essentially constituted by the EOSC shared resources, the EOSC Hub offering access to them and the compliance framework (including the rules of participation) together with the **Governance framework**, on the basis of which data infrastructures (including RI, thematic clouds and eInfras) agree to be federated for the provision of specific services ("EOSC services").
The Governance defines the links and interactions with and amongst the federated entities and regulates transactions across the EOSC. The federated data infrastructures shall comply to the EOSC rules of participation and abide to the EOSC Governance in so far as they provide EOSC services (i.e. a data infrastructure will continue to follow its own rules outside of its specific commitments to the EOSC). The federating core will initially form around the "EOSC Hub" project and the EOSC portal.

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Interoperability does not mean integration. Interoperability mechanisms at different levels (technical, semantic, operational and legal) are of paramount relevance, as described in the European Interoperability Framework.

RIs are certainly key players in the development and implementation of the "cloud". Federation of existing RIs, data, resources, and VCS (Virtual Common Services) provided will be of paramount relevance, and they largely contribute in some areas to structure research communities. Interoperability of existing RIs within the EOSC will ensure a user centered approach; it will generate network externalities stimulating efficient data provision and further uses, and it will provide a clear and visible role for EOSC while RIs will also benefit from EOSC including full application of FAIR principles.

It is important to define synergies and complementarities and avoid overlap between services provided by EOSC and those provided by European RIs. It should be avoided that the services provided by EOSC would enter in concurrence with RIs and thus weaken them. EOSC should accompany them towards a full application of FAIR principles.

EOSC business model and funding sources deserve a dedicated section within the Strategic Implementation Plan, going beyond the preliminary reflections on the costs and financing of the EOSC implementation that have been integrated as parts of the Implementation Roadmap of the EOSC.

Main concerns relate to the definition of a "user fee" model for accessing and reusing research data, and how existing research data infrastructures business models based on users' fees will adapt to EOSC principles. Furthermore, EOSC business model should explore in depth the potential mix of funding streams, including post-2020 EU funding and in kind resources, against the background of funding streams already established within MS/AC, to support national research data infrastructures.

The SWG OSI would have favored more **explicit references to the Associated Countries** in the Implementation Roadmap and their role in the different stages of EOSC implementation.

Since the distributed and inclusive nature of the EOSC governance scheme, it is of the utmost importance to avoid conflict of interest at all levels, including also redundancy and over representation of a limited and closed group of organizations (and individual experts).

2. GOVERNANCE STRUCTURE

In general, the updated vision of EOSC provided by the EC reflects the SWGOSI' main concerns on the governance structure such as clarifying the semantics, avoiding conflict of interest and clarifying different actors' roles as well as coordination mechanisms among the different layers of governance.

Figure 1 shows the two governance models (Model A) and Figure 2 (Model B) as they had been provided by the Commission to be discussed within the SWGOSI.

While each model has *pros* and *cons*, the opinion of the ERAC SWGOSI favours *Model A*. However, it is important to reduce ambiguity in roles and tasks to be perform, as well as to clarify different stakeholders' contributions and engagement. The definition of a clear governance structure, including also a proper definition of each governance layer, is very important to avoid conflicting expectations from different actors: they all may think that their own role is more central that what it really is.

The effectiveness of a Governance Board – renamed "EOSC Board" in the Implementation Roadmap presented by the Commission - formed by MS/AC and EC, vis-à-vis an Executive Board of 10 representative stakeholders (European Branch Organizations) has been questioned by some delegations. It would imply the *de facto* the allocation of decision-making power to a limited number of stakeholders (which were named in the EC proposal under examination "European Branch Organizations") whose selection criteria should be discuss (see section 2.2).

The interface between the EOSC [Governance] Board and the Executive Board should be carefully balanced since EOSC' success requires strong commitment by both funders and stakeholders. Furthermore, the crucial and distinctive role of the Executive Board rest upon its coordination capabilities through EOSC implementation.
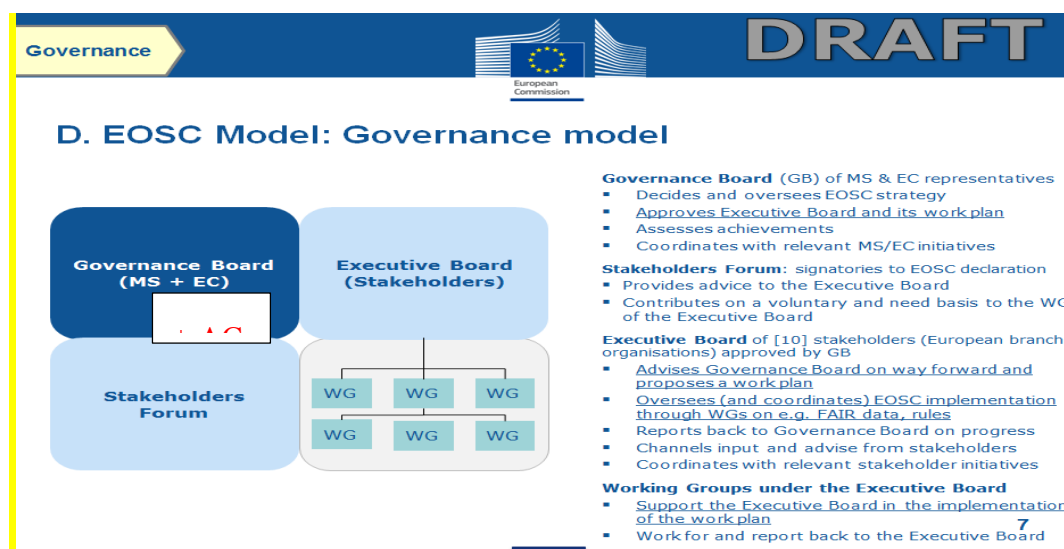
*S*implification of interactions among different structures (and lean management) will contribute to better implementation. In particular, the role of the EOSC [Governance] Board and its interface with the Executive Board/Coordination Structure still needs further clarification.

Furthermore, *Model A* foresees that both the EOSC [Governance] Board and the Executive Board will have monitoring tasks, and it needs to be clarified to facilitate EOSC management.
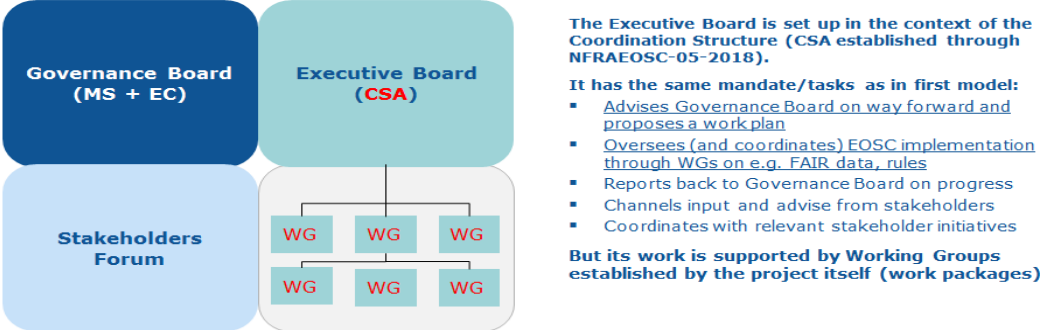
Model B under consideration, based on the brief description provided by the European Commission at the time the SGWOSI started its work, grants control of the project to a successful consortium. The identification of the Executive Board with a CSA introduces serious concerns; and the SWGOSI considers that it is difficult to reconcile the criteria to be fulfilled by members of the Executive Board with those to apply in the context of a CSA established through INFRAEOSC-05-2018 call.

In addition to the needed clarification of the linkages and the allocation of decision-making, some delegates advocate for an alternative model that while being consistent mainly with *Model A* will allow to have an Executive Board composed of both MS/AC/EC representatives and stakeholders (see section 2.2. below).

European Commission

D. EOSC Model: Governance model (alternate model)

Governance Board (MS + EC)

Executive Board (CSA)

Stakeholders Forum

WG WG WG
WG WG WG

The Executive Board is set up in the context of the Coordination Structure (CSA established through NFRAEOSC-05-2018).

It has the same mandate/tasks as in first model:
- Advises Governance Board on way forward and proposes a work plan
- Oversees (and coordinates) EOSC implementation through WGs on e.g. FAIR data, rules
- Reports back to Governance Board on progress
- Channels input and advise from stakeholders
- Coordinates with relevant stakeholder initiatives

But its work is supported by Working Groups established by the project itself (work packages)

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2.1. THE EOSC [GOVERNANCE] BOARD

There are not objections to the composition of the EOSC [Governance] Board integrated by MS, AC and the EC (WK 14890/2017 INIT). However, main questions emerge in addressing voting rights –including distribution of voting rights between MS and AC-, as well as other internal rules of procedure (i.e. election of Chair, Co-Chair and Vice-Chair, administrative and operational support, etc.).

The interactions between the EOSC [Governance] Board and the Executive Board, in particular mechanisms to ensure the EOSC [Governance] Board's capacity to oversee the Executive Board's activities, must be clear, and delegates within SWGOSI consider different options. Some delegations were in favor of creating inside the EOSC [Governance] Board a "small group of MS/AC + EC" or *Executive Committee*[5] to effectively establish strong interactions between the EOSC [Governance] Board and the Executive Board. Alternatively, other delegates are clearly against since it will create a "close club" that will not favor the implementation and inclusiveness of EOSC, contributing to a complicated, unclear and bureaucratic governance structure.

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5   It has been suggested that such an Executive Committee inside the EOSC [Governance] Board would: (1) advice EOSC [Governance] Board on way forward and proposes a work plan; (2) channel inputs and advice from stakeholders; (3) receive inputs from the Executive Board, and (4) prepare proposals for the EOSC [Governance] Board.

It has to be discussed further what the potential benefits may be of creating (a) scientific/technical advisory committee(s) or working group(s)/subgroup(s) of individual experts within the EOSC [Governance] Board. In this respect, the role of the existing High Level Expert Group on EOSC and experts of the Open Science Policy Platform should be re-defined in accordance with the governance structure of the EOSC for greater effectiveness and transparency. It is important to restore trust and dialogue among funders and different stakeholders while reducing information asymmetries.

2.2. THE EXECUTIVE BOARD AND WORKING GROUPS

An **Executive Board** appointed by the EOSC [Governance] Board is supported but it is important to clarify the following aspects: (1) **membership/selection criteria**; (2) **representativeness**[6] and (3) differences between nomination (by European branch organizations) and appointment (by the EOSC [Governance] Board).

Selection criteria should take into account: (1) the role of large pan-European RIs; (2) the role of RPOs and Universities; (3) membership and rotation mechanisms; (4) voting rights and rules for Chair, Co-Chair and Vice-Chair; and (5) role of Working Groups in the Executive Board, as well as WG identification, selection, duration and ToRs[7].

The Executive Board main role corresponds to the implementation phase, in which researchers, RPOs, Research Infrastructures (e-infrastructures) and other stakeholders in charge of the EOSC implementation, will work in different groups (and subgroups) and will be assisted by a coordination structure. Therefore, it will be important to have a **more direct link between these "doers"[8] and decision-makers**.

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6 Representativeness deserves particular attention since it has different dimensions: users, scientific domains, e-infrastructures, RPOs, etc.

7 At this point some delegations suggest: 50% of the members should be reserved for big/large pan-European research infrastructures; 50% of the members should be reserved from universities or Research Organizations; 50% of each part of the members of the board should be changed after a period of two years. Chair and vice Chair elected members; coordination and knowledge exchange between working groups and Executive Board.

8 The reference to doers and users, if any, should be clear to avoid semantic ambiguity and potential conflicts.

An Executive Board consisting only of "doers", and more specifically of European Brand Institutions will likely limit the options in the development of EOSC and limit the potential speed of EOSC growth. Implementation requires funding, planning and buy-in from the national structures in place, and consequently some delegations consider – as already mentioned above - the Executive Board as being the right place for funders (MS/AC and EC) to be involved and formally represented along with stakeholders. **Hence, the SWGOSI encourages the European Commission to take into consideration this option of a broader Executive Board, including MS/AC and EC together with stakeholders, and discuss further its mechanisms and selection criteria**.

On the other hand, the possibility of nominating individual experts beside representatives from large organizations should be explored, with "expiration date", and explicit and concrete tasks to be achieved, to make sure that diversity is properly catered for in the EB. Indeed large organisations may have different ambitions and encounter different problems from those experienced by smaller institutions, coming from smaller countries or more fragmented research contexts.

On the **Working Groups**, the main suggestions include:

–   The roles of the working groups need to be clear in order to ensure that they contribute to making a positive impact for the research community. It includes also the clarification of linkages and interaction between EOSC EB WGs and future GO FAIR initiatives as well as these that are carried on by established working groups such as RDA Europe.

–   They should not tackle technical issues only, but work on the specificities of what constitutes data and services in the different disciplines – together with disciplinary communities -, and consider the issues that relate to researchers' rewards, as well as other (until now) unresolved issues regarding data citation (citations of subsets of data, etc.)

–   Though some degree of overlap between the Stakeholders Forum and Working Groups within the Executive Board may be necessary, it is important to define mechanisms for a proper functioning and to prevent cooptation.

–   Set up rules and define mechanisms to initiate, identify, elect, empower or close nominated and elected Working Groups, and decide about memberships and their members.

2.3. STAKEHOLDERS FORUM

The role of the Stakeholders Forum needs further development, in particular concerning its role as a *think tank*, sounding and counselling board, its linkages with scientific communities, but also the terms for collaboration with the Working Groups of the Executive Board. It is also important to set **objective eligibility criteria** for the initial phase. Criteria have to be open and inclusive to all stakeholders to avoid the creation of a "close club" of stakeholders.

Some delegations consider that options for membership should include the possibility for MS/AC and organizations to appoint delegates and/or individual experts as representatives in the Stakeholders Forum.

In addition, other delegates consider that it would be necessary to consider the creation of an executive board within the Stakeholders' Forum given the heterogeneity, size and complexity of tasks that have to be performed.

From this perspective, a proper scientific/technical advisory board of top scientists, including but not necessarily limited to experts from the fields of information sciences and technologies, acting as individual experts should be discussed, as an alternative to the option of creating a scientific/technical advisory committee within the EOSC [Governance] Board. Furthermore, the future role of ESFRI (see section 3.1) and of the EIRG (E-Infrastructure Reflection Group) should be also properly addressed.

3. FINAL REMARKS

3.1. ESFRI FORUM

Apart from the role of large pan-European Research Infrastructures (ESFRIs), coordination between the **ESFRI Forum and the EOSC [Governance] Board** has to be clearly addressed. Both EOSC Forum and ESFRI Forum are at the initial stages of EOSC development *partners* for the advance of Open Science in Europe. EOSC should favor the participation of individual RIs to serve as key elements of the cloud. There are substantial synergies that should lead to optimize large investments already made and committed to create e-Infrastructures and virtual common services.

Conditions for a stronger involvement of ESFRI Forum into the EOSC definition process must be in place, as well as to **assign to ESFRI Forum the role of an equal partner for the EOSC implementation**. Both EOSC [Governance] Board and ESFRI Forum should engage in the strategic definition and implementation of a common strategy on open science and open research data to align their own strategic agendas and create synergies. EOSC should be developed in partnership while preserving EOSC own governance structure to promote complementarities. The relationship between research infrastructures, the INFRAEOSC call, and central EOSC elements and governance has to be addressed by the Commission in order to prevent from fragmentation and lack of coordination among different units and funding instruments.

3.2. EOSC BUSINESS MODEL

As already mentioned in previous sections, **EOSC business model and funding sources deserve a dedicated section within the Strategic Implementation Plan.**

EOSC business model is a critical element in the development of the project and different visions and controversies may emerge, in particular considering the fact that data differ in the different fields of research, and that there may be no one-size-fits-all approach in regards to EOSC business model either.

It is critical to work in the definition of a feasible and **sustainable EOSC ecosystem,** and to define the "Terms of Use" (ToU) and the legal framework considering access rights, authorizations, and data uses. Conditions to access to EOSC services and the underlying business model are important and, as mentioned in the first section of this document, a "user fee model" for accessing and reusing data will not be acceptable to some delegates.

Delegates do not share a common vision about the definition and scope of openness in the EOSC context, and consequently whether data access through the EOSC should be truly open or by means of an authenticated membership, or even through an exclusive access based on institutional affiliation should be discussed further. Different types of data, and stages of access, can be considered in accordance to confidentiality regulations. Even datasets or other results that cannot be disclosed at all should, at least, be findable and have their related metadata made accessible through the EOSC.

3.3. OTHER ISSUES TO BE INCLUDED IN THE STRATEGIC IMPLEMENTATION PLAN

Citizen Scientists should not be excluded by default, since citizen science constitutes an integral dimension of the European vision on Open Science.

EOSC should provide **open and free access to all metadata**, contribute to develop and use already existing metadata standards in different scientific domains, and to promote their increasing integration. A clear reference to metadata (definition and availability) should be include in the final document, and the development of appropriate performance indicators for metadata needs to be ensured.

Finally, specific actions for **capacity building** to bridge the gap between the different MS/AC could be explored, including among others investment in infrastructures and human capital.

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