

## Co-designing the European Open Science Cloud The Role of Social Sciences and Humanities

**European Alliance for Social Sciences and Humanities wants to invite the EU Commission, the Council and the Parliament to ensure that all stakeholders can effectively contribute with their knowledge and experience in the building of the EOSC.** This broad contribution is vital and based on principles of research practice rather than technical design. We believe that the stakeholders' networks are vitally important, to ensure the establishment of a solid and long term sustainable research data ecosystem and guarantee the widest possible access to and development of knowledge.

The European Alliance for Social Sciences and Humanities (EASSH) recognises that Open Science is a process well beyond sustaining innovation, which includes issues of management, financing and dissemination of science. Disciplines as those with a focus on people and society have the experience and a full skill-set to be made available just to address those issues.

***\*A special thanks for this paper is due to DARIAH, CLARIN and CESSDA - all members of EASSH***

### *Background*

The *Implementation Roadmap for the European Open Science Cloud*<sup>1</sup> explores the appropriate governance and financing mechanisms for the European Open Science Cloud (EOSC). The objective of the EOSC is to give the Union a global lead in research data management and ensure that European scientists reap the full benefits of data-driven science.<sup>2</sup> More importantly, by the intelligent use of “reverse engineering” method, a social and humanistic approach encourages all modern sciences towards a design which maximises the benefits to mankind through efficient use of current and emerging resources for knowledge, in an open and shared mode, nourishing innovation and continuous development. Social, environmental and economic impact can be measured through existing and future/innovative indicators to make the benefits clear.

### *SSH position*

The research fields identified under the umbrella of SSH are highly diverse and present inherently heterogeneous, inter-disciplinary landscapes. This implies a great diversity of data types and formats ranging from e.g. statistical, textual and audio-visual data in social medicine and social work including data from national probation systems and penitentiaries – social data - to laser scanner data from archaeology, musical notation software codes, text annotations or curated visual, audio-visual or textual databases of culture.

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<sup>1</sup> EC Staff Working Document (SWD): 2018, 83 final, March 2018.

<sup>2</sup> Ibidem, p.3

Member States stressed that the EOSC should act as a *trusted platform* between research data needs and cloud-based scientific services and e-infrastructures. Other stakeholders identified the *better exploitation of data* generated by the Research Infrastructures and long-term *sustainability*.<sup>3</sup>

This implies the integration of services and the establishment of a federation mechanism; the setting and operationalization of the FAIR principles (findable, accessible, interoperable and reusable); the development of FAIR-compliant certification schemes for data infrastructures and the connectivity of the pan-European Research Infrastructures such as the ESFRI projects and landmarks.

EASSH agrees that further measures are needed to foster the development of professional practices of research data management and stewardship in Europe. In particular, EASSH would like to highlight three main specific features:

1. Working with sensitive, personal data, requiring FAIR and secured environment.
2. Dealing with new data modes: secondary data – e.g. from National Statistics Offices, registries – esp. from Governments, social media data, and qualitative data.
3. Amalgamation of data from different disciplines – social data are combined with environment data, health & medical data, historical data, economic data, etc.

The European Alliance for Social Sciences and Humanities (EASSH) supports this approach and subscribed the EOSC Declaration. Especially on governance stating that *sustainable research infrastructure in Europe requires a strong and flexible governance model based on trust and increasing mutuality. As interdisciplinarity is one of the main objectives of the EOSC, the governance model should be based on representativity, proportionality, accountability, inclusiveness and transparency*.<sup>4</sup>

In the last decades, SSH research infrastructures like CESSDA, CLARIN and DARIAH have successfully developed models of tackling such complexities by integrating and developing services which serve the SSH research communities. Their core mission is to assess community needs, common practices and standards and to develop an environment that is “technically flexible enough to allow for the integration of heterogeneous material and [...] is social enough to allow researcher crowds to discover and analyse their material and make new connections.” (Blanke et al. 2018:11). Such endeavours also set examples and viable models for other scientific domains engaged in diversity, fragmentation and a multitude of standards.

#### *EASSH on EOSC Governance*

SSH researchers, with a focus on people and society, have the experience and a full skill-set to be fully able to address those issues described above. EASSH would like to spell out how we can contribute to the design and shaping of the European Open Science Cloud and its functionalities.

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<sup>3</sup> Ibidem, pg.7

<sup>4</sup> Ibid. pg.5

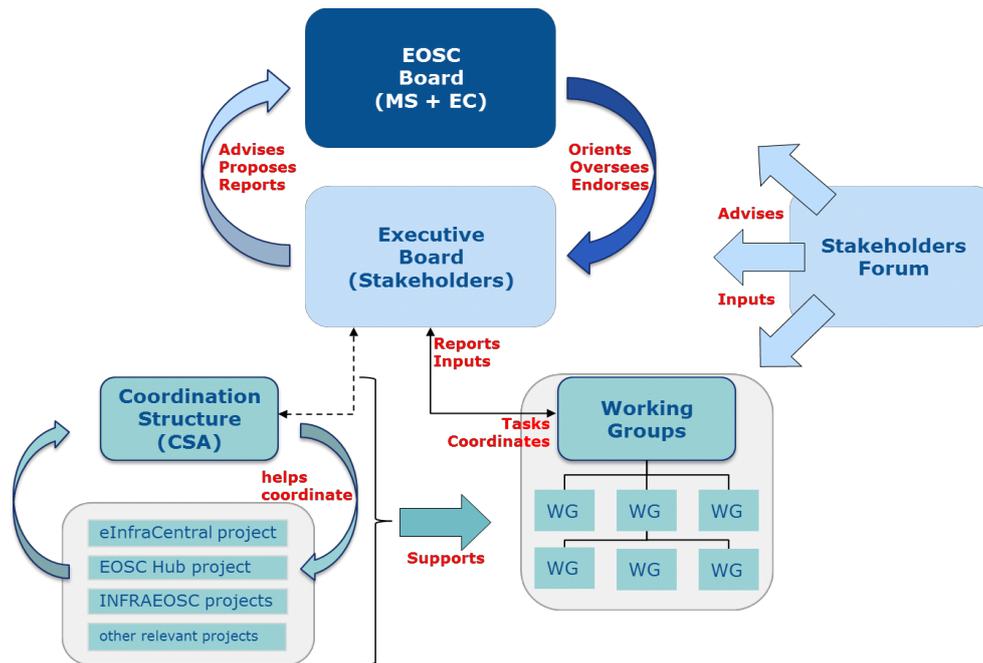
- **Tackling diversity and outlining interoperability of data must emerge from community of practice.**  
The research fields identified under the umbrella of SSH are highly diverse and present inherently heterogeneous, inter-disciplinary landscapes.
- **Pooling together services for science, such as data storage and HPC analytics meaning reduced costs for all participants in the EOSC**  
SSH Research Infrastructures can combine data and e-infrastructure services – especially in distributed environments. They are constantly working on smart solutions for the efficient integration of such services.

The implementation of the European Open Science Cloud must be based on a human-focus approach, not just a technical definition. The collaboration of different research communities is at the heart of the designing of such a digital research ecosystem, which is user oriented. The knowledge and experience of all the European infrastructures (ERICs) are crucial to address those constraints and limitations where the decisions are driven only by technological perspectives.

This is where the strength of SSH manifests its highest value and relevance to address the issues of governance of the EOSC. Considered as a maker of Responsible Research and Innovation, SSH can defend a common approach based on ethics in research, not focused on disciplinary or technical perspective alone.

In the case of the EOSC, it is important that SSH researchers are represented both on the governing and scientific advisory levels (see graphic below) as well as legitimate contributors to the co-development of highly efficient business models for the EOSC. Further valuable aspect that SSH can bring also to the EOSC implementation are the creation of a recursive lab, with the aim to analyse Open Science practices and give feedbacks on uses.

**Figure: Possible EOSC Governance framework as it emerged from the consultation (SWD, p. 33)**



Only contributing to the above fundamental steps for the design of the Open Science, SSH can then address the requirements in *Widening access and building trust* foreseen in the European Cloud initiative (published in April 2016).<sup>5</sup>

To conclude, Open Science policies cover different areas of development such as Open Access, Open Research Data, Open Education, Open Science Cloud, and Citizen Science. In this paper, EASSH focused on how our SSH disciplines contribute to the design of key stages of the development of Open Science in Europe. In particular, we identified four main aspects:

1. the definition of Open Science concept into roadmaps of implementation;
2. the solutions Open Science brings to common challenges in science both in Europe and globally;
3. the responsible and ethical implementation of Open Science
4. the applications of Open Science (e.g. across education sectors, social services, the economy etc)

This is essential to understand how SSH must be more and more involved in the global process of Open Science.

<sup>5</sup><https://ec.europa.eu/digital-single-market/en/news/communication-european-cloud-initiative-building-competitive-data-and-knowledge-economy-europe>