

*In this joint position paper, Germany and the Netherlands call for rapid action on the European Open Science Cloud in order to benefit from the full potential of research data and stay on top of global cloud developments.*

## **INTRODUCTION**

Open Science can significantly increase the excellence and impact of science, benefitting the economy and society as a whole.<sup>1</sup> The current discussion on the future of Europe underlines the need for joint action to exploit this potential with a clear focus on creating substantial European added value. The exponential growth of data and the trend towards a more data-driven economy increasingly makes data a factor for success in scientific competition. Therefore better and wider access to research data is urgently needed.

At present, a number of obstacles prevent European researchers from reaping the full benefits of data-driven science. The majority of datasets from publicly funded research are still inaccessible to most scientists in the same discipline, not to mention other potential users of the data. Currently, only 18% of the data in open repositories is reusable.<sup>2</sup> Access and ‘machine actionability’ are hampered by a lack of common or widely used standards, the huge degree of fragmentation in terms of data handling and processing methods, and the need for improved practices and tools.

In this context, we believe that the establishment of the “European Open Science Cloud” (EOSC), envisaged by the European Commission as a trusted, open environment for European researchers for the handling of all phases of the data life cycle and generated results, offers a unique opportunity for Europe. It could greatly accelerate the advancement of knowledge, enable economic growth, improve the translation of research results for the benefit of society, and consequently help secure Europe’s place at the forefront of the global data-driven economy.

However, if we want to capitalise on the momentum of the digital data era, we must act now. Data-driven science is rapidly progressing on a global scale and numerous institutional and national initiatives are underway. This means compatibility with other international initiatives needs to be ensured and further fragmentation avoided. If we want to maintain Europe’s position as a place of scientific excellence and its attractiveness to the most talented researchers worldwide, now is the time to create optimal conditions for data-driven research and innovation in Europe.

Against this backdrop, Germany and the Netherlands see the need for a fast track implementation initiative to boost the further development of the EOSC. The primary focus is to involve all networked initiatives, research disciplines and interested Member States in order to make research data findable, accessible, interoperable and re-usable (FAIR) and as

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<sup>1</sup> The transition towards an Open Science system - Council conclusions, 9526/16, adopted on 27.05.2016.

<sup>2</sup> Are FAIR Data Principles FAIR? LIBER Webinar by Alastair Dunning, 10.03.2017.

such pave the way for the establishment of the EOSC, in line with the recommendations of the Commission High Level Group on the European Open Science Cloud<sup>3</sup>.

As science becomes increasingly data-driven, making data FAIR will create real added value as it allows for combining data sets across disciplines and across borders to address pressing societal challenges that are mostly interdisciplinary in nature. FAIR data will also contribute to more robust and transparent scientific processes. FAIR data will make it easier to verify research results, which will foster excellence and help to increase trust in scientific findings.

Converting to FAIR data is a challenge for all actors in the scientific landscape. For example, scientific institutions need to remove technical and organisational barriers to ensure interoperability and accessibility. Scientists need to consider data management from the very beginning of a project to make data findable by way of meaningful metadata. And funding providers have to acknowledge the effort related to data management as a prerequisite for FAIR data.

A decentralised approach is required, driven essentially by the research community itself and building on existing initiatives with critical mass, at the level of Member States (such as the German National Research Data Infrastructure (NFDI) or the Dutch National Open Science Platform) as well as other science-driven initiatives. National and European measures need to be interlinked to prevent diverging developments and duplication of efforts and investments. We thus call for a coordinated approach to the supporting e-infrastructure ecosystem, applying the principle of subsidiarity and aiming at the lightest possible, internationally effective governance.

## **THE WAY FORWARD**

To this end, Germany and the Netherlands propose to support the GO FAIR initiative as a promising approach towards establishing the EOSC. With its distinguishing elements of a bottom-up, completely open-to-all, cross-border and cross-discipline approach, GO FAIR can contribute to a broad involvement of the European science community as a whole, including the “long tail” of science. This will also further the engagement of the scientific community and science policy institutions in Member States that are not yet or only marginally involved in current EOSC initiatives. Institutions in all Member States are set to benefit from this inclusive and community-driven approach for the development of FAIR data and associated services, which aims at fostering complementarity with (inter)national initiatives and at integrating the experience from current and future EOSC pilot measures in Horizon 2020. Such EOSC pilot measures and GO FAIR have a joint goal, but focus on different aspects, phases and timing of the Cloud. The EOSC pilot measures will contribute to establish the overall governance framework for the EOSC, whereas GO FAIR will focus on early implementation needs of existing networks and consortia.

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<sup>3</sup> Realising the European Open Science Cloud, First report and recommendations of the Commission High Level Expert Group on the European Open Science Cloud, 2016.

GO FAIR follows the recommendations of the Commission High Level Group on the European Open Science Cloud with the aim to ‘federate the gems’ across the Member States, hence forming an ecosystem of GO FAIR implementation networks. GO FAIR foresees an implementation strategy based on three interactive processes that take up the approach outlined by the HLEG EOSC as follows: (i) the development of an ecosystem of infrastructures; (ii) building up competences for research data management, including the training of data stewards capable of providing FAIR data services; (iii) setting up and promoting a programme of (cultural) change with relevant stakeholders, to value curated data as important research results.

As a community-driven initiative, GO FAIR has drafted a first set of basic principles of governance in its Rules of Engagement: GO FAIR is intended to be a self-coordinating, board-governed organisation drawn from the stakeholder community, taking decisions driven by community consensus and consideration of different interests. The GO FAIR governance is to be inclusive and reflect the demographics of the membership. This will help to build confidence in a common approach towards the EOSC.

As these Rules of Engagement are the backbone of the GO FAIR initiative, they have to be further developed and constantly updated by the governing board in a suitable procedure.

Germany and the Netherlands will support the GO FAIR initiative by establishing a support office for the GO FAIR initiative for a pilot phase of 2 years. The office will support the governing board of GO FAIR and implementation networks in the different Member States. To safeguard the self-governing character of GO FAIR, the office will primarily focus on the following three activities:

- Assisting implementation networks/hubs to align themselves with the GO FAIR Rules of Engagement in order to prepare them to join the GO FAIR initiative.
- Supporting the implementation and further development of GO FAIR e.g. by organising GO FAIR events such as workshops and meetings of the governing board.
- Fostering compliance with the self-prescribed Rules of Engagement by supporting the establishment and implementation of a monitoring mechanism for the GO FAIR implementation networks.

Given the urgency, we strongly call on other Member States for an expression of political support for the GO FAIR initiative and to encourage their research and e-infrastructure communities to join GO FAIR.

We jointly call on the European Commission to strengthen its efforts towards the realisation of the EOSC through proposing appropriate governance and funding frameworks, both in the short and long term (i.e. Horizon 2020 and its successor), while taking adequate consideration of GO FAIR and other initiatives. This requires close cooperation with Member States and stakeholders.

We call on the research and e-infrastructure communities in all Member States to join the GO FAIR initiative and participate in shaping its future, making FAIR data and services a reality

and preparing the EOSC as an endeavour driven by the science community itself for the benefit of all.

We believe that it will be important to make rapid progress in implementing the GO FAIR approach across institutions, disciplines and Member States. We thus call on the German and Dutch research community already engaged in the context of GO FAIR to work towards pilot implementation networks that could kick start the GO FAIR initiative by jointly providing concrete “proof of concept” in several fields of science as soon as possible and with the aim to be expanded to GO FAIR nodes in other countries. Germany and the Netherlands propose to provide a first report on progress at the Competitiveness Council in December 2017.

We suggest that the Competitiveness Council keeps regular track of the progress of the EOSC, including concrete actions taken to implement GO FAIR. We invite Member States, the European Commission and the scientific community to share our vision for the development of GO FAIR as set out as follows:

In six months

Pilot implementation networks start to develop into a federated environment for scientific data-sharing and reuse, linking existing and emerging networks across domains and countries.

In one year

Templates and methodologies start being developed that can be used as a modular, scalable and fit-for-purpose implementation scheme by new GO FAIR implementation networks. The number of cross-border implementation networks of involved MS is growing. Output from other EOSC pilot measures in Horizon 2020 is taken into account.

In two years

GO FAIR is optimally integrated in the emerging EOSC as well as the national structures and contributes substantially to solving their FAIR data needs. GO FAIR nodes have been established in the majority EU Member States and have built solid links with other initiatives on a global scale.