

European Open Science Cloud: Largest Research Data Repository

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A “repository” is a receptacle in which data are kept and made available. In [academic publishing](#), many major universities and its libraries have their own repositories for academic research papers. Other repositories are public and created to offer open access to researchers as an alternative publishing route using standard channels. Not only are these channels bogged down and slow going, most publishers require researchers to pay for any article they attempt to access. University libraries are also required to pay thousands of dollars each year for subscriptions to the major publishers’ journals.

To provide another alternative to the standard methods of publishing in scientific publications, a report from the Commission High Level Expert Group on the European Open Science Cloud (HLEG EOSC) was presented in October 2016. A summit was subsequently held on June 12, 2017, in Brussels, Belgium, during which the new EOSC was discussed. This information is provided here.

Open Science Cloud

According to an article in *Horizon*, the impetus behind creating the new EOSC was the recognition that science must use the Internet more efficiently and effectively to help provide the most up-to-date information on research and discoveries. To that end, research institutions worldwide collaborated to create a new repository, EOSC. The hope is that this huge repository would more easily further collaboration among scientists to address subjects such as climate changes and decoding the human genome.

With a database this large, stewards to oversee the data would be needed. Scientists also have to agree to share their data. European Union Member States have come together to discuss the concept and share its implementation. Many funding organizations and other participants are offering their advice and experience for processing such large amounts of data. If the concept works, it is anticipated that researchers will have access to enormous amounts of scientific data within the next few years.

Millions of Researchers Will Benefit

Europe has [nearly 72 million scientific professionals](#) who stand to benefit from this new approach. Although the amount of data is staggering, The European Data Infrastructure will provide the base. Networks and storage facilities capable of accommodating such a large data load will be instituted and data will be stored in the cloud. Of course, scientists would need powerful search engines to enable multiple queries and fast results.

According to a [2016 press release](#) from HLEG, the timeline for development was as follows:

- 2017: Make all scientific data available.
- 2018: Create an initiative to accelerate the development of supercomputers (quantum technology).
- 2020: Roll out a new infrastructure to accommodate the immense amount of data.

In addition to the obvious benefits to scientists worldwide, it is anticipated that the data will be available to businesses that might otherwise not have access, such as small and medium-size organizations. In addition, the new type of power chip used would provide new technology to other industries. Some public services could also benefit from the new technology by making available their own data, reducing the cost of the service.

Funding

It was estimated that nearly \$8 billion in investments would be needed to fund the project allocated over 5 years. HLEG recommends changing the standard funding model for research data to one that is a combined national and European Commission scheme. According to HLEG, approximately 5 percent of research costs should be

allocated to managing and integrating data.

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