How FAIR is EOSC? An Overview of FAIR Activities within the Various EOSC funded initiatives

© Damien Lecarpentier
CSC-IT Center for Science,
Espoo, Finland
damien.lecarpentier@csc.fi

Abstract. The talk overviews FAIR activities within the various EOSC funded initiatives.
Keywords: FAIR, EOSC, initiative.

Science is changing, both in the way it is performed and the way it is communicated. Driven by remarkable advances in information and communication technologies, today's scientific infrastructures offer researchers unprecedented access to data sources, data-intensive sensors, and increasingly comprehensive analysis and simulation facilities that have revolutionized scientific methods in a remarkably short space of time. Research services, processes and outputs are becoming accessible to all levels of society. Enormous amounts of data are being generated, bringing extraordinary new opportunities for their innovative reuse in novel scientific, commercial, and citizen-science contexts. This is Open Science.

To harness its full value and reap the fruits of public and private investment, the European Commission has launched the European Open Science Cloud (EOSC) initiative. EOSC will foster an open, collaborative platform for the management, analysis, sharing, reuse and preservation of research data on which innovative services can be developed and delivered. For this, Europe can build on decades of public investment in scientific infrastructures—experimental facilities, networking, high-performance and high-throughput computing, cloud services, scientific software and institutional and community data repositories—by connecting national and international infrastructures and services. The European Open Science Cloud will provide a researcher with access to all the varied distributed resources they are able to use in the pursuit of their research—data storage, compute cycles, and the packaged combinations of data and compute we term services—in a way that is easy to use. And by "easy to use" here we almost certainly mean "familiar": using the Science Cloud should be as much like using a desktop computer as possible.

Much of the technology to achieve the European Open Science Cloud already exists. Challenges remain, of course, but they are more ones of policy than technology, of agreement between resource providers, of adoption of common approaches, in particular concerning the management of research data. A few years ago a limited set of very clear principles were formulated and are now getting wide acceptance from research funders, policy makers and within the research communities: the FAIR data principles. The principles essentially say that research outputs, in particular data, should be Findable, Accessible, Interoperable and Reusable. This should be true for reuse by humans or by algorithms and other automated processes. There is an overwhelming and general support for the basic idea of FAIR data (and other research resources, including software and data services) and some work already in progress on how to accomplish and operationalize FAIR.

The FAIR principles have also penetrated EOSC and are becoming a key component of it. The EOSC pilot [1] and the EOSC-hub [2] projects are beginning to align their activities around FAIR, the upcoming ESFRI clusters address FAIR aspects at disciplinary levels, and forthcoming projects are expected to work on FAIR certification schemas to be adopted by EOSC. The challenge is now to make FAIR the foundational principles of EOSC and embed them into EOSC Rules of Participation. This can be done on the basis of the FAIR Guiding Principles [3] and the FAIR Data Action Plan HLEG interim recommendations [4], but will require concrete actions which should taken by all the EOSC related initiatives, generic and thematic, and some coordination. The overall objective is to accelerate the realisation of EOSC by ensuring a wide uptake of the FAIR principles and practices across disciplines, at national, European, and global level.

References

[1] https://eoscpilot.eu

[2] https://www.eosc-hub.eu

[3] Wilkinson, M. D., M. Dumontier, I. J. Aalbersberg, G. Appleton, M. Axton, A. Baak, N. Blomberg, et al. 2016. "The FAIR Guiding Principles for scientific data management and stewardship." Scientific Data 3 (1): 160018. doi:10.1038/sdata.2016.18. http://dx.doi.org/10.1038/sdata.2016.18.

[4] Collins, S., Genova F., Harrower, N, Hodson S., Jones S., Laaksonen L., Mietchen D., Petrauskaite R., Wittenburg P., FAIR Data Action Plan: Interim recommendations and actions from the European Commission Expert Group on FAIR data, June 2018. https://doi.org/10.5281/zenodo.1120245

Proceedings of the XX International Conference "Data Analytics and Management in Data Intensive Domains" (DAMDID/RCDL'2018), Moscow, Russia, October 9-12, 2018