
The DARIAH-EU and OpenAIRE collaboration on Open Science publishing practices

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Abstract

In the digital research ecosystem, we no longer produce only papers. Research results can take many forms that coexist with the research paper, such as data, software, images, teaching materials, videos and more. The possibility of sharing, disseminating, and re-using digital research products of different type is fundamental for an effective implementation of the Open Science (OS) paradigm [1,2]. OS is a set of practices of science, advocated by all scientific/scholarly communication stakeholders (i.e., research funders, research and academic organizations, and researchers), according to which the research activities and all the products they generate should be freely available, under terms that enable their findability, accessibility, re-use, and re-distribution [3].

In the current scholarly communication ecosystem, it is not an easy task to apply Open Science principles and to keep the diverse types of research outputs visible, easily discoverable and connected. In order to support the shift towards Open Science, the OpenAIRE initiative introduces and implements the concept of Open Science as-a-Service (OSaaS) on top of the existing OpenAIRE infrastructure (www.openaire.eu), by delivering out-of-the-box, on-demand deployable tools in support of Open Science.

OpenAIRE materializes an open, de-duplicated, participatory metadata research graph of interlinked scientific products (including research papers, datasets and software), with Open Access information, linked to funding information, research communities and infrastructures by collecting more than 100 millions of metadata records from more than 9,000 scholarly data sources world-wide. Thanks to the availability of the research graph, OpenAIRE is in the position to offer added-value services to research communities and infrastructures.

In the context of the EC H2020 OpenAIRE-Advance project, DARIAH-EU and OpenAIRE are collaborating on this topic and piloting one of those added-value services: the Research Community Dashboard (RCD).

The OpenAIRE RCD (<https://connect.openaire.eu>) provides Research Infrastructures (RIs) and its researchers with the services required to connect the research life-cycle the RIs support with the scholarly communication infrastructure, in such a way science is reusable, reproducible, and transparently assessable.

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The OpenAIRE RCD allows the easy deployment of community-specific gateways that work as single access points to a virtual space including metadata descriptions of all products in the OpenAIRE research graph that are relevant to the community (e.g. articles, datasets, software, workflows) as well as links between such products. Via the community gateway, researchers can also find Open Science-oriented publishing tools that they can use to manually deposit research products of any kind via Zenodo (www.zenodo.org), the OpenAIRE “catch-all” repository run by CERN, specifically thought for researchers without an institutional/thematic repository of reference, but that can be used by any researcher willing to publish any type of research product. To group depositions of the same community of practice, researchers can use the mechanism of the “Zenodo communities”, which can be considered “containers” of research products related to a specific topic. When a gateway is deployed for a given community, a dedicated Zenodo community is also created.

A community gateway is managed by a set of RCD managers, which can configure the criteria that the OpenAIRE algorithms will apply to the graph for the identification of relevant products. Specifically, RCD managers can configure the algorithms by choosing relevant projects, content providers (e.g. institutional repositories, data archives), and Zenodo communities and by specifying the acknowledgment statements to be found in the full-texts of Open Access publications. Every product linked to the selected objects in the OpenAIRE graph will be automatically marked as relevant for the community (i.e. every research result “funded by” a selected project will appear in the community gateway).

Researchers can also contribute to enrich the graph by *(i)* depositing their products on Zenodo, *(ii)* assert (i.e. claim) that an existing product is relevant for the given community, and *(iii)* assert links between products. As a consequence, researchers populate and access an open, participatory scholarly communication graph of interlinked objects dedicated to their RI, through which they can share any kind of products in their community, maximise re-use and reproducibility of science, and outreach the scholarly communication at large.

The graph is also analyzed for the calculation of statistics that support the monitoring of research impact of the RI and the uptake of Open Science principles among its researchers.

The RCD for DARIAH-EU is currently available as a beta at <https://beta.dariah.openaire.eu/> and the DARIAH team is currently configuring it in order to instruct OpenAIRE algorithms about the criteria by which research products available in OpenAIRE should be assigned to the DARIAH-EU RCD. In particular, OpenAIRE algorithms are being configured to find research outcomes produced thanks to the DARIAH infrastructure based on:

Acknowledgment statements available in the full-texts of Open Access publications;

Links from research products to DARIAH specific projects (e.g. DESIR, HaS-DARIAH);

The provider from which OpenAIRE collected the metadata records (e.g. all products from the DARIAH collection of HAL);

Relevant Zenodo communities (e.g. the DiMPO Zenodo community).

Once the configuration is stable and applied by OpenAIRE algorithms, the RCD will show relevant statistics about the uptake of Open Science practices, such as the percentage of Open Access publications and numbers of publications linked to datasets and to software, and the research impact of DARIAH. The DARIAH team will collaborate jointly with the OpenAIRE team for the definition of the indicators to be calculated, possibly based on the request and expectation of the DARIAH management and funding agencies.

Acknowledgments: This work has been co-funded by the OpenAIRE-Advance project (Horizon 2020) under Grant number 777541.

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Keywords: Open Access, Open Science, scholarly communication, research impact