

Stepping Up Towards Greater Alignment of Repository Networks

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Abstract. Over the past few years, the Confederation of Open Access Repositories (COAR) has established the initiative “Aligning Repository Networks” in order to foster global repository interoperability and align policies and practices internationally. This paper outlines several activities to align major repository networks across the globe strategically, technically and on the service level.

Keywords. Repositories, interoperability, harmonization, standards

1. Introduction

Digital repositories are becoming increasingly important components of the scientific communication system. Their value lies in the potential to interconnect them to create a network of repositories, a network that can provide unified access to research outputs and be (re-) used by machines and researchers. Although there are unique requirements in each jurisdictional context, repository networks must be aligned across the world in order to support the truly global nature of research and scholarly communication.

Aligning repository networks is important for a number of reasons (Shearer 2014):

- To develop a seamless scientific infrastructure that supports the needs of researchers at the global level.
- To provide evidence to national funding bodies and governments that local and regional services are being developed in parallel with international activities.
- To provide uniform information to governments and funding agencies about the impact of open access policies.
- To avoid duplication of work across networks and enable cost synergies in areas of common interest.

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COAR² has been working on international alignment of repository networks at three levels: (1) strategic, (2) technical and semantic interoperability and (3) common services.

The alignment work is being undertaken via several mechanisms including bilateral meetings and agreements between the major networks, international working groups, and informal conversations with regions/countries not yet involved.

2. Aligning of Regional Repository Networks

COAR has undertaken several activities over the last year to foster global repository interoperability through the initiative “Aligning Repository Networks”³. In this initiative several major international organizations emphasize their support for immediate open access to research articles and harmonized standards and common vocabularies. The joint committee for Aligning Repository Networks acts as a forum for exchange between repository networks and provides a global voice promoting the role of repositories as critical research infrastructure. Therewith, these joint programs strengthen open access managed as a commons within the scholarly community. Participating repository networks are benefiting both strategically and pragmatically from the international collaboration.

A meeting of senior representatives from Africa, Asia, Europe, Latin America, and North America (April 2015/Porto/Portugal) showed that many networks have evolved significantly over the last year and are ready to collaborate with others more extensively. Activities shall include closer cooperation around the development of guidelines and tools, and several bilateral collaborations between different networks. In addition, supporting communication shall raise the visibility of repositories and their networks as key infrastructure components. It will underpin efforts at both the international and local levels to raise awareness about the value of repositories. Support was also expressed for further engaging with policy makers and other stakeholders, especially the Global Research Council (GRC) to ensure adoption of balanced open access policies (Shearer & Müller 2015).

2.1. Cooperation between Large Regional Networks in Europe, North- and South-America

There is already significant repository infrastructure in many countries and regions of the world, which are connected through national and thematic networks. Worldwide, three continents stand out in implementing strong regional ties in setting up e-infrastructure networks based on repositories. Certainly, these networks have evolved based on the unique local requirements and mandates, and are at different stages of

² The Confederation of Open Access Repositories (COAR) is an international association with over 100 members and partners from around the world representing libraries, universities, research institutions, government funders and others. COAR brings together the repository community and major repository networks in order build capacity, align policies and practices, and act as a global voice for the repository community.

³ See <https://www.coar-repositories.org/activities/advocacy-leadership/aligning-repository-networks-across-regions/>

development. It should be noted that there are also repository systems in other regional and national contexts including Australia, China, Canada, and Japan among others (Shearer 2015).

In *Europe*, OpenAIRE aggregates the research output of EC-funded projects and makes them available through a centralized portal. All EU member states are participating in this project, as well as five associate countries, making a total of 33 countries. OpenAIRE currently aggregates the metadata from over 6,000 repositories and OA journals across Europe.⁴ In *Latin-America*, LA Referencia maintains a centralized harvester, promotes common standards across Latin America and works at the strategic level to further promote open access. These services reflect the public policy agreements of the science and technology authorities in nine countries. LA Referencia currently harvests metadata from eight national nodes aggregating from about 200 repositories.⁵ In 2013, the SHARE initiative was launched to bring together information about the publication output in *Northern America*. SHARE, a joint effort by three large stakeholders, creates an openly available data set about research activities across their life cycle by collecting, connecting, and enhancing metadata that describes research activities and outputs.⁶

Several pilot collaborations are being set up in order to show how repository alignment can help moving towards a global knowledge network. Concretely, the networks of LA Referencia, OpenAIRE, and SHARE are engaged consensually to discuss synergies and potential areas of collaboration. In particular, a number of specific areas were identified between regional networks and COAR in which all commit to collaborate on:

- Regular data exchange: Exchange data and develop agreements around jurisdictional harvesting and aggregation leading to greater coverage and efficiencies across regions.
- Common metadata and vocabularies: Work towards consensus about key metadata elements and common vocabularies to express funders and institutional affiliations, open access status, and project IDs. This will contribute to the COAR-CASRAI work already underway aimed at developing common metadata elements and support repository managers in better exposing their collections.⁷
 - Common technological services: Assess the feasibility of adopting common broker/router technologies and other services.
 - Ongoing dialogue: Meet regularly to share approaches and perspectives about technical and strategic challenges.⁸

2.2. *Interoperability between OpenAIRE and LA Referencia*

A regional workshop focusing on interoperability between LA Referencia and OpenAIRE (Nov 2015/Rio de Janeiro/Brazil)⁹ aimed to set up closer collaboration

4 <http://www.openaire.eu>

5 <http://lareferencia.redclara.net/rfr/>

6 <http://www.share-research.org/>

7 See <https://www.coar-repositories.org/activities/advocacy-leadership/working-group-global-interoperability-of-oa-repository-networks/>

8 See <https://www.coar-repositories.org/activities/advocacy-leadership/aligning-repository-networks-across-regions/collaboration-on-data-exchange-technological-development-and-metadata/>

between these two networks in order to enhance the usability and visibility of the collective content in the networks and enable the development of value added services across the two regions.

Specific agreements were made:

- The national nodes of LA Referencia will adopt the OpenAIRE Guidelines and participate in the development of the upcoming guidelines versions.
- LA Referencia will develop a strategy and launch communities of practice to facilitate sharing of expertise across participating countries and to support implementation of guidelines at local institutions.
- LA Referencia, OpenAIRE and COAR will partner to develop a blended learning course to build capacity in managing repositories in Latin America.
- LA Referencia and OpenAIRE will provide validators that will enable repositories to assess their level of compliance with the guidelines.

2.3. Engaging with Other Regions

Amidst the different levels of network ties and acknowledging the diversity of approaches and capacities across different regions, COAR is seeking possibilities to collaborate worldwide and to involve regions with less network structure. In this spirit, COAR promotes international alignment with other regions and countries in Africa, Australia, Canada, China, Japan and India based on dialogue and presentations with various organizations and players in those regions. The most recent development is the launch of a regional Open Access initiative in Asia with COAR in March 2016.

3. Conclusion

There is already significant repository infrastructure in many countries and regions of the world, which are connected through national and thematic networks. These regional and national networks are in the process of further aligning their practices globally through the COAR Aligning Repository Networks initiative, making their collections more valuable by enabling new services to be built on top of their aggregated contents. Through a number of strategic and pragmatic activities, COAR is working on different aspects of alignment between repositories and repository networks. A special focus is given to three regions worldwide represented by SHARE, LA Referencia, and OpenAIRE. The alignment work is being undertaken via several mechanisms including bi- and multilateral meetings and agreements between the major networks, international working groups, and informal conversations. COAR aims to expand these activities to include a greater number of organizations and regions. Finding the right balance between local and regional needs and a truly global agreement for repositories will be the key element in this process.

9 See http://lareferencia.redclara.net/rfr/sites/default/files/docs_publicos/informeworkshop25-26noviembre2015.pdf

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