

DSpace extensions for wider application scenarios

The new paradigms of scholarly communication, enabled at the turn of the century by emerging technologies, are expressed in many creative ways, with open repositories playing a key role.

The potential of repositories is far from being fully expressed: effective Open Access can be enhanced by integrating repositories in the daily practice of scholarly communication. Interoperability and integration are among the keys of success: OA repositories, as the natural home for all valuable research outputs, should become the core component of a Research Information System and a primary source of information for a Virtual Research Environment.

Through the implementation of a rich and extensible data model and the use of the appropriate standards, DSpace-CRIS (Current Research Information System), DSpace-GLAM (Galleries, Libraries, Archives, Museums), DSpace-RDM (Research Data Management) bring the benefits of an OA repository solution in wider application scenarios.

CRIS systems (also known as RIMS) are the primary source of information for the management of research institutions. DSpace-CRIS, the only open-source CRIS solution in the world, offers an innovative concept that integrates the repository in the system, provides a portal for experts, and exhibits on the web all the available information to improve the institution's visibility [1]. Moreover, DSpace-CRIS "offers a particularly interesting use case for testing these [OpenAIRE] guidelines. In principle, such a combined platform could become OpenAIRE-compliant via OAI-PMH harvesting like any other repository, but could also use its CERIF-XML export feature to meet the guidelines for CRIS managers for a more comprehensive research information exchange"[2].

Cultural Heritage assets, both digitized and born digital, are the primary source for researchers in the field, but also a resource for the wider public and society at large. DSpace-GLAM is a Digital Library management system [3] that makes them open and reusable, through interoperability protocols and standards such as the IIIF, implements LTP and provides a far more sustainable environment than proprietary solutions.

Digital data are increasingly more important in all fields of research, from the hard sciences to the humanities. FAIR (Findable, Accessible, Interoperable, Reusable) data are encouraged by the European Commission and the most relevant research funders. The reproducibility of research results and the preservation of underlying data are fundamental requirements for a state-of-art research data management system. DSpace-RDM fulfills most requirements through the smooth integration with CKAN, providing institutions with a sustainable tool to implement their RDM policies as a contribution to "making Open Science a reality"[4].

These three solutions are all based on DSpace-CRIS open-source code [5] and have been customized by 4Science [6] after specific requirements of the relevant communities. They are aimed at increasing the adoption of DSpace worldwide and to contribute to the expansion of the success of the Open Archives Initiative. Every institution producing digital objects, from research data to cultural heritage, has the opportunity to adopt an open-source, customized and customizable, sustainable tool to share their content, implementing their Open Access policy and contributing to the dissemination and preservation of knowledge.

References

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- [5] DSpace-CRIS is an open-source extension of DSpace: <https://wiki.duraspace.org/display/DSPACECRIS/DSpace-CRIS+Home>. It consists of a data model describing objects of interest to Research and Development, such as Researcher Pages, Projects, Organization Units and Second Level Dynamic Objects (single entities specialized by a profile, such as Journal, Prize, Event) and a set of tools to manage the data. DSpace-GLAM is an additional

configuration that provides the ability to manage, collect and expose data about every entity important for the cultural heritage domain, such as persons, events, places, concepts and so on.

[6] 4Science (<http://www.4science.it/en/>) is a DSpace Registered Service Provider, made up of renowned professionals in the field of open repositories, working with open source communities to support research and cultural institutions through technological progress.

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