

Modernising the Infrastructure of the Catalan Research Portal

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Keywords

Research portal, CERIF, interoperability, data infrastructure, CRIS, scalability, Open Science

Extended Abstract

a) Context and motivation

The **Research Portal of Catalonia** (PRC) is an aggregating infrastructure that centralises and makes visible information about research produced at universities and research centres in Catalonia. The portal integrates data on researchers, projects, publications, doctoral theses and other research outputs, with the aim of improving the visibility, transparency and reusability of scientific information.

The project was first presented at CRIS2015 as an already operational initiative, highlighting from the outset the use of the **CERIF** standard as a common data model to ensure interoperability between different institutional CRIS systems. Subsequently, at CRIS2023, the portal's significant growth was presented, both in terms of content volume and the range of services offered, consolidating its role as a key component of the Catalan research ecosystem.

Looking ahead to CRIS2026, this proposal focuses on a new turning point in the project: the **modernisation of the portal's technological infrastructure**. After more than a decade of operation, this evolution addresses the need to ensure sustainability, scalability and adaptability in response to the continuous increase in data volume, new functional requirements and future services.

b) Objective

The main objective of this contribution is to describe and analyze the technical and functional evolution of the Research Portal of Catalonia, with a particular focus on:

- The architectural and technological improvements recently implemented.
- The functional enhancements introduced for the source institutions providing the data.
- The planned roadmap for the coming years, both in terms of functionality and infrastructure.

In particular, the contribution highlights several functional improvements designed to benefit participating institutions, including:

- The improvement and integration of validation and deduplication workflows directly within the portal.
- The possibility for different institutions to perform asynchronous data updates.
- Enhanced visualisation of newly ingested content prior to publication.

- The incorporation of additional contextual information from alternative external sources such as OpenAlex.

c) Approach / methodology

The presentation follows an **evolutionary case study** approach, combining:

- A review of the initial design decisions of the project, especially the adoption of **CERIF** as the data exchange standard.
- A comparative description of the previous architecture and the new portal infrastructure.
- An analysis of data ingestion, update and exploitation workflows.
- The definition of the future development roadmap.

d) Main results / contributions

The modernisation of the PRC infrastructure has made it possible to:

- Improve the scalability and performance of the portal.
- Facilitate the incorporation of new content and services.
- Strengthen the quality and consistency of aggregated data.
- Maintain and consolidate the use of **CERIF** as a key interoperability element, demonstrating the long-term validity of the decisions taken during the initial phases of the project.

In addition, a **future roadmap** is presented, including potential new functionalities and the exploration of new services based on emerging technologies, such as AI.

e) Conclusions and impact

This contribution shows how a regional research portal can evolve over time while maintaining solid principles of interoperability and open standards, and at the same time adapting its infrastructure to new technological challenges. The experience of the PRC may be useful for other CRIS initiatives facing similar processes of growth and modernisation.

Relevance to conference topics

- Open and sustainable infrastructures
- Interoperability and standards (CERIF, PIDs)
- Evolution of CRIS systems and research aggregators
- FAIR data and Open Science

Type of contribution

The contribution is suitable both for an oral presentation and for a poster format