

CERIF-CRIS, A Research Information Model for Decision Support: Use and Trends for the Future

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Abstract:

Current Research Information Systems (CRISs) are dedicated to manage information about Research through CERIF. CERIF is a data model describing the Research involved entities and their manifold relationships in an efficient and scalable way. In addition to the ER-Model CERIF specifies an XML exchange format and develops a domain vocabulary – aimed at re-use and mappings, and towards increased openness. CRISs serve many stakeholders in their recording, reporting and decision-making alongside the entire research process ; whether they are developing programmes, allocating funding, assessing projects, executing projects, generating results, assessing results or transferring technology. A CRIS contains data and metadata or information about e.g. project managers, ongoing and completed projects, research departments, funding organisations, programmes and funding, researchers, research results (publications, patents, products), events, infrastructures (facilities, services, equipment) and their timely relationships (semantics), enabling an integrated approach for managing research information. CERIF – the Common European Research Information Format – is a European Commission Recommendation to Member States and its roots date back to the late 80ies, where it has always been tightly related with CRISs). It is now in the responsibility of euroCRIS, a non-profit organisation dedicated to the development of Research Information Systems and their interoperability.

The CERIF data model allows for a metadata representation of research entities, their activities and interconnections, their output (results) and underlying infrastructure as well as a high flexibility with formal semantic relationships, enabling quality maintenance, archiving, access and interchange of research information to support knowledge transfer to decision makers, for research evaluation, research managers, strategists, researchers, editors and the general public. A CRIS can be implemented using a subset or superset of the full CERIF model for projects, people, organisations, publications, patents, products (research datasets), services and facilities (or equipment in particular) including role-based, temporally-bound relationships. The main advantage of CERIF is with its semantically neutral architecture. Today CERIF is used for implementation of a standalone CRIS, as a model to define the wrapper around a legacy non-CERIF CRIS allowing for homogeneous

access to heterogeneous systems, and as a definition of a data exchange format to create a common data warehouse from several CRIS.

Increasingly there is an emphasis on evaluation of research output and combining publications with data. CRIS are ideally placed to provide the relevant information in whatever form is required and the use of CERIF allows not only recordings of the relevant information but also a provides a standard for interchange CERIF XML. Various national, international and commercial CRIS are available and CERIF is increasingly being adopted as the standard and recognized internationally. With the new Linked Open Data task group in euroCRIS, another technology is being approached, namely Linked Open Data towards formal ontologies, and thus a wider re-use of CERIF in emerging communities; In an e-infrastructure environment of GRIDs and CLOUDs, ambient computing, workflow, and Web2.0 technologies a CRIS becomes the central focus for research outputs such as publications, patents, products including R&D datasets and software. The perfect CRIS provides a workflow on the GRIDs surface, metadata and data exchange standards and complete process ICT support – seen by the end-user as a ‘workbench’ integrating all the information processing requirements.

Keywords: data model, research information system, metadata