

# Design of a Digital Library System for Large-Scale Evaluation Campaigns

Marco Dussin and Nicola Ferro

Department of Information Engineering – University of Padua  
{dussinma,ferro}@dei.unipd.it

**Abstract.** This work describes the effort of designing and developing a Digital Library System (DLS) able to manage the different types of information resources produced during a large-scale evaluation campaign and to support the different stages of it. We discuss, in particular, the design of DIRECT, a DLS developed to assist the work of the actors of international evaluation campaigns.

## 1 DIRECT: A DLS for Large-Scale Evaluation Campaigns

Scientific data, their management, access and reuse through citation, curation, enrichment, and preservation are essential components of scientific research. We consider Information Retrieval (IR) experimental evaluation as a source of valuable scientific data and, therefore, we have designed and developed a DLS for scientific data able to support the course of an evaluation initiative and to promote the dissemination and sharing of the experimental results. The result of our work is Distributed Information Retrieval Evaluation Campaign Tool (DIRECT) [2,1], a DLS which has been developed, adopted and tested in the Cross-Language Evaluation Forum (CLEF)<sup>1</sup> campaigns since 2005.

Figure 1 shows the complete architecture of DIRECT. This architecture has been designed by deeply studying the information space entailed by an evaluation campaign in the light of the Data, Information, Knowledge, Wisdom (DIKW) hierarchy [4]. This approach, which is quite innovative since few studies have dealt with the problem of modelling and organizing the information resources produced during an evaluation campaign, allows us to organise the different types of information resources at different levels of the hierarchy, to assign them to different types of actors, and to recognize known and new interaction patterns to offer to the users the best way to assist them in their tasks of scientific production and sharing of knowledge. Further modularity is granted by the Model-View-Controller (MVC) approach which pervades the user interface and the use of a templating engine. Different types of users have different types of interfaces, but they can access all the information created by the other users at the right level in the hierarchy and in a compact and suitable way [3].

---

<sup>1</sup> <http://www.clef-campaign.org/>

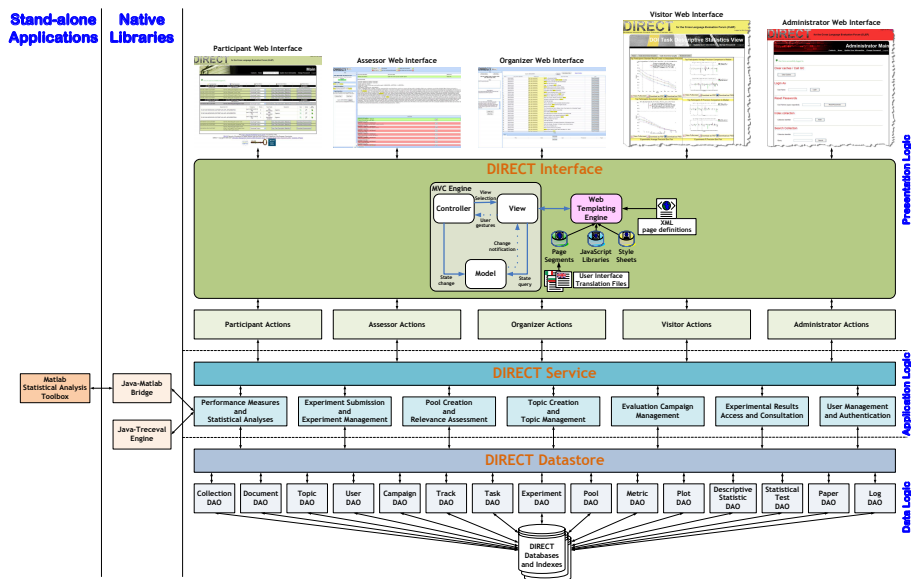


Fig. 1. Architecture of DIRECT

## Acknowledgments

The work reported has been partially supported by the TrebleCLEF Coordination Action, as part of the Seventh Framework Programme of the European Commission, Theme ICT-1-4-1 Digital libraries and technology-enhanced learning (Contract 215231).

## References

1. Agosti, M., Di Nunzio, G.M., Ferro, N.: The Importance of Scientific Data Curation for Evaluation Campaigns. In: Thanos, C., Borri, F., Candela, L. (eds.) Digital Libraries: Research and Development. LNCS, vol. 4877, pp. 157–166. Springer, Heidelberg (2007)
2. Di Nunzio, G.M., Ferro, N.: DIRECT: a System for Evaluating Information Access Components of Digital Libraries. In: Rauber, A., Christodoulakis, S., Tjoa, A.M. (eds.) ECDL 2005. LNCS, vol. 3652, pp. 483–484. Springer, Heidelberg (2005)
3. Dussin, M., Ferro, N.: The Design of the User Interface of a Scientific DLS in the context of the Data, Information, Knowledge and Wisdom. In: Agosti, M., Thanos, C. (eds.) Proceedings of the Fourth Italian Research Conference on Digital Library Systems (IRCDL 2008) (2008)
4. Zeleny, M.: Management Support Systems: Towards Integrated Knowledge Management. *Human Systems Management* 7(1), 59–70 (1987)