

### A New Step Toward Digital Library Foundations

Contributed by:

Leonardo Candela and Donatella Castelli

Italian National Research Council

Pisa, Italy

{leonardo.candela, donatella.castelli}@isti.cnr.it

DL.org ([www.dlorg.eu](http://www.dlorg.eu)), a European Coordination Action on "Digital Library Interoperability, Best Practices and Modelling Foundations", has recently finalised a new version of the "Digital Library Reference Model". This has been produced by using the DELOS Digital Library Reference Model (produced in February 2008) as a firm starting point and drawing on global expertise harnessed through six working groups made up of more than 50 international experts who are active in the Digital Library domain.

The *Digital Library Reference Model* is a volume comprising four different yet complementary parts, each forming a self-contained artefact, i.e., 'The Digital Library Manifesto', 'The Digital Library Reference Model in a Nutshell', 'The Digital Library Reference Model Concepts and Relations', and 'The Digital Library Reference Model Conformance Checklist'. Abridged versions of the Manifesto, In a Nutshell and the Checklist are available in print and online.

The *Digital Library Manifesto* declares the intentions, motives, overall plans and views on a long term initiative leading to the production of a foundational theory for Digital Libraries. It identifies the main notions characterising the whole Digital Library domain. It introduces the three types of relevant 'systems', i.e., *Digital Library*, *Digital Library System*, and *Digital Library Management System*. It describes the main concepts characterising these systems, i.e., *organisation*, *content*, *user*, *functionality*, *quality*, *policy* and *architecture*. The *Digital Library Manifesto* also introduces the main roles that actors may play within digital libraries, i.e., *end-user*, *manager* and *software developer*. Finally, it describes the reference frameworks needed to clarify the DL universe at different levels of abstraction, i.e., the *Digital Library Reference Model* and the *Digital Library Reference Architecture*.

The *Digital Library Reference Model in a Nutshell* briefly introduces the overall picture underlying a comprehensive model conceived to capture the essence of Digital Libraries in terms of the main domains characterising them, the principal concepts existing in each domain and the main relationships connecting such concepts.

The *Digital Library Reference Model Concepts and Relations* presents in detail the main concepts, axioms and relationships characterising the Digital Library domain independently from specific standards, technologies, implementations, or other concrete details. For each of the 200+ concepts and 50+ relations included in the model, the document provides a detailed characterisation comprising a definition, the set of connections with other concepts, the rationale explaining its existence and a set of examples of concrete instances of the specific entity.

Finally, the *Digital Library Reference Model Conformance Checklist*, one of the main novelties included in the new volume, provides a set of statements to enable assessors to determine whether or not the digital library they are analysing is compliant with the *Digital Library Reference Model*.

Clearly, the digital library is a dynamic research domain, and the diversity of needs among different digital libraries continues to introduce new concepts that have to be incorporated into the model. Hence, at any point in time these documents should be considered dynamic versions of documents that will continue to evolve.

In order to contact the keepers of this set of artefacts, please send an email to [referencemodel@dlorg.eu](mailto:referencemodel@dlorg.eu). The full document is available from <http://referencemodel.dlorg.eu>.

*The Digital Library Reference Model*, April 2011, is co-authored by Candela, L.; Athanasopoulos, G.; Castelli, D.; El Raheb, K.; Innocenti, P.; Ioannidis, Y.; Katifori, A.; Nika, A.; Vullo, G.; Ross, S. and submitted to the European Commission as Deliverable D3.2b.