DILAS

DIGITAL LIBRARY ANNOTATION SERVICE

Design, Implementation and Evaluation of Multimedia Annotations for Users' Collaboration

DELOS WP1 - Task 1.5   DELOS WP4 - Task 4.10

DELOS All Task Meeting
Paris, January 30, 2006

Outline

▶ Project description;

▶ DiLAS system description;

▶ Project work progress;

▶ Conclusions and next steps;

▶ Dissemination and publications.

People

Coordinators:

▶ Maristella Agosti (UNIPD): Task 1.5 Coordinator;
▶ Emanule Panizzi (ROMA1): Task 4.10 Coordinator;

Partners:

▶ *Fraunhofer IPSI, Germany* (**FHG/IPSI**): Ulrich Thiel;
▶ *Institute of Knowledge Sharing, Denmark* (**IKS**): Hanne Albrechtsen;
▶ *Risø National Laboratory, Denmark* (**RISOE**): Annelise Mark Pejtersen;
▶ *Swedish Institute of Computer Science, Sweden* (**SICS**): Preben Hansen;
▶ *University of Rome "La Sapienza", Italy* (**ROMA1**): Emanuele Panizzi;
▶ *University of Duisburg-Essen, Germany* (**UNIDUE**): Norbert Fuhr, Ingo Frommholz;
▶ *University of Padua, Italy* (**UNIPD**): Maristella Agosti, Nicola Ferro, Nicola Orio.

Digital Library Management Systems

The third DELOS Brainstorming Meeting, held in Corvara, Italy, in July 2004, pointed out that:

▶ digital libraries had to become more user-centred;

▶ digital libraries should not be just passive repositories but require more active collaboration and communication tools;

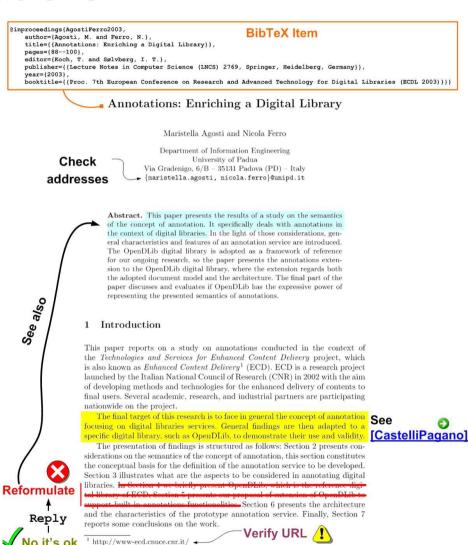▶ there is a need for more general purpose digital library management systems.

DiLAS Goals

▶ to implement an annotation DLMS service,

  ▷ based on design guidelines and existing partners available tools, and
  ▷ accessible from different DLMSs;

▶ to integrate it into two different systems,

  ▷ the DAFFODIL and BRICKS systems;

▶ to evaluate its use

  ▷ as a new way to interact with a DL,
  ▷ for cooperation among DL users and stakeholders, and
  ▷ performing a study of users behaviour, of the system usability, and of the impact on the DL development and use.

Why Annotations?

▶ a very well-established practice and widely used;

▶ a way for merging personal contents with the information resources provided by DLs;

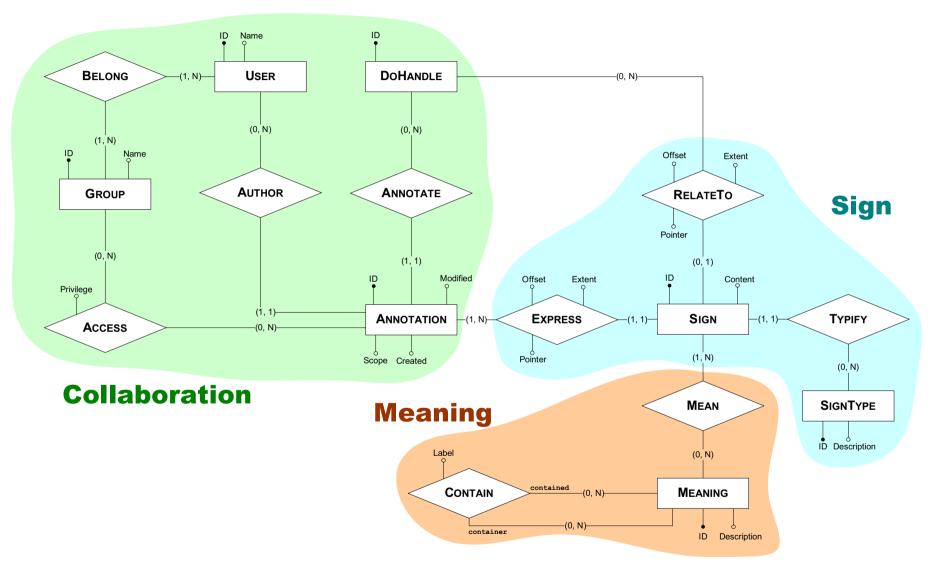▶ a means for improving collaborative work practices;

Research Background

▶ Design and development of DL annotation systems:

▷ COLLATE - Collaboratory for Annotation Indexing and Retrieval of Digitized Historical Archive Material (**FHG/IPSI**);

▷ DAFFODIL - Distributed Agents for User-Friendly Access of Digital Libraries (**UNIDUE**);

▷ FAST - Flexible Annotation Service Tool (**UNIPD**);

▷ IPSA - Image Archive of the Paduan School (**UNIPD**);

▷ MADCOW - Multimedia Annotation of Digital Content Over the Web (**ROMA1**);

▶ Empirical evaluation of DL annotation systems:

▷ COLLATE (**IKS**, **RISOE**);

▷ Large software company in Europe (**SICS**).
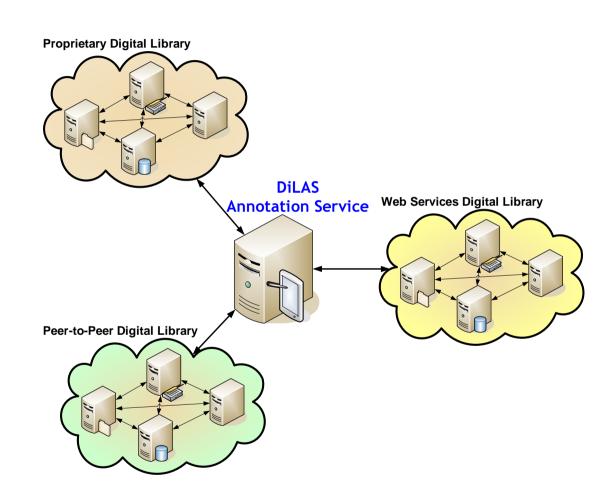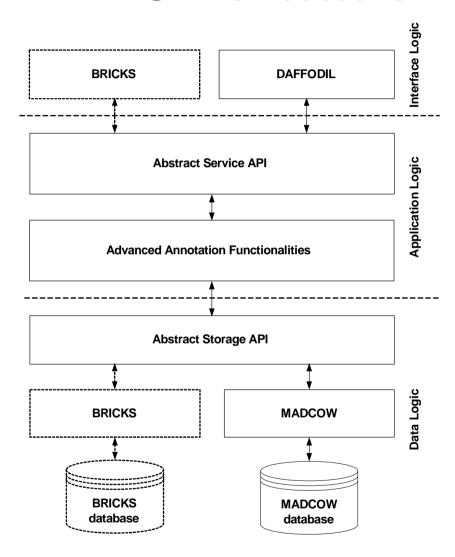
Annotation Model

DiLAS Design Choices

▶ objectives:
  ▷ flexibility;
  ▷ modularity;
  ▷ integration with different kinds of DLMS;
▶ motivations:
  ▷ paradigm of interaction with DLMS;
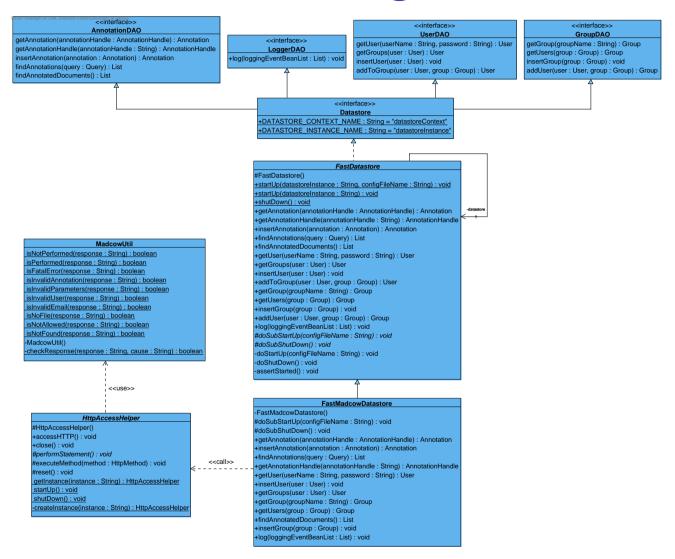 ▷ documents and annotations hypertext characteristics;
  ▷ search functionalities.

Proprietary Digital Library

DiLAS Annotation Service

Web Services Digital Library

Peer-to-Peer Digital Library
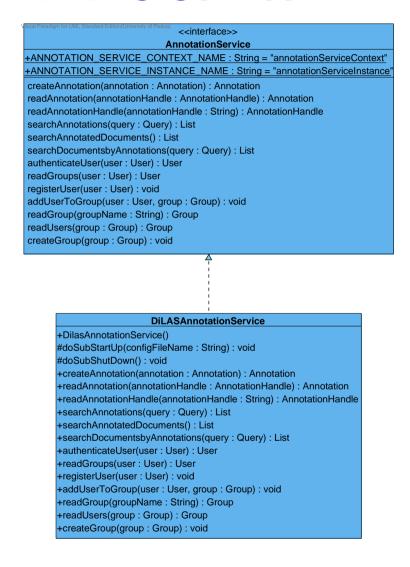
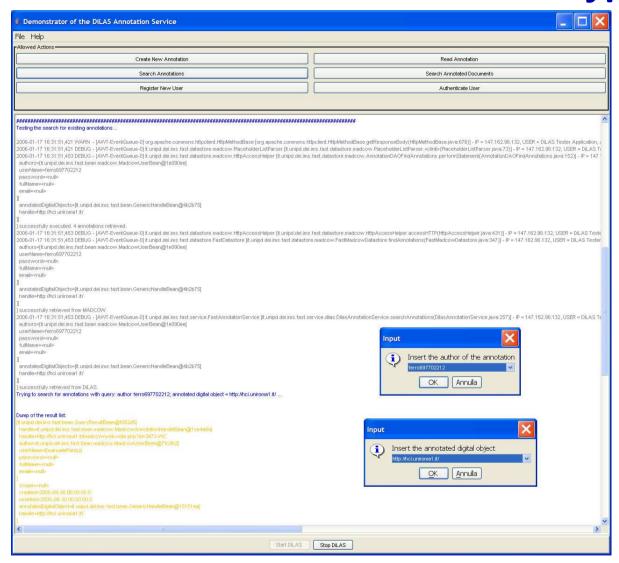# DiLAS Architecture

DiLAS Storage API
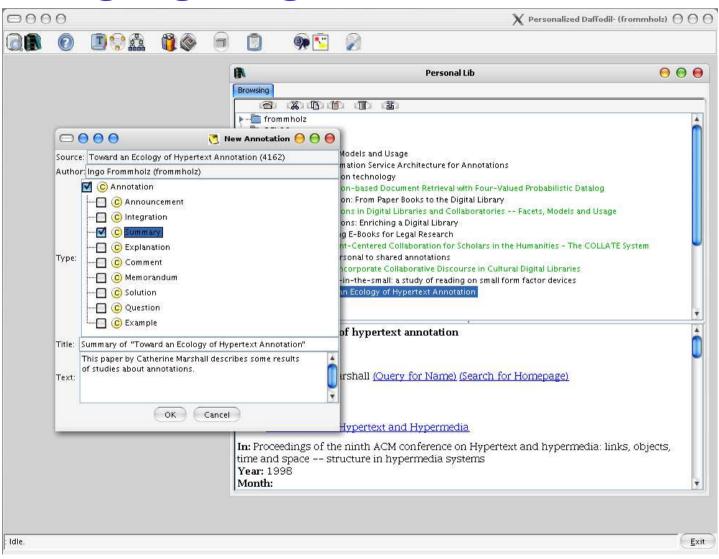
DiLAS Service API

First DiLAS Demonstrator Prototype

Ongoing Integration of DAFFODIL

Conclusions and Next Steps

▶ An architecture for the DiLAS system has been proposed (FHG/IPSI, ROMA1, UNIDUE, UNIPD);

▶ A first prototype of DiLAS, which integrates FAST and MADCOW, has been implemented (DELOS researcher exchange between UNIPD and ROMA1);

▶ Integration of DAFFODIL into DiLAS is currently ongoing (UNIDUE);

▶ Better understand DL-users use of annotations will be achieved through an empirical evaluation (IKS, RISOE, SICS);

▶ Missing features for real users will be identified through an empirical evaluation (IKS, RISOE, SICS).

Publications (1/3)

[Paris2005] M. Agosti, H. Albrechtsen, N. Ferro, I. Frommholz, P. Hansen, N. Orio, E. Panizzi, A. M. Pejtersen, and U. Thiel. DiLAS: a Digital Library Annotation Service. In J.-F. Boujut, editor, *International Workshop on Annotation for Collaboration. Methods, Tools, and Practices*, pages 91-101. Paris, November 24-25, 2005.

[Colis2005] M. Agosti and N. Ferro. Annotations as Context for Searching Documents. In F. Crestani and I. Ruthven, editors, *Proc. 5th International Conference on Conceptions of Library and Information Science – Context: nature, impact and role (Colis5)*, pages 155–170. LNCS 3507, Springer, Heidelberg, Germany, 2005.

[DELOSWS2005] M. Agosti and N. Ferro. A System Architecture as a Support to a Flexible Annotation Service. In C. Türker, M. Agosti, and H.-J. Schek, editors, *Peer-to-Peer, Grid, and Service-Orientation in Digital Library Architectures: 6th Thematic Workshop of the EU Network of Excellence DELOS. Revised Selected Papers*, pages 147–166. LNCS 3664, Springer, Heidelberg, Germany, 2005.

Publications (2/3)

[DELOS2005] M. Agosti, N. Ferro, H. Albrechtsen, I. Frommholz, E. Panizzi, and U. Thiel Design, Implementation and Evaluation of the Use of Digital Multimedia Annotations in DL Interaction and DL Users Collaboration. In C. Thanos, editor, *DELOS Research Activities 2005*, pages 47–48. ISTI-CNR, Gruppo ALI, Pisa, Italy.

[JCDL2005] M. Agosti, N. Ferro, and N. Orio. Annotating Illuminated Manuscripts: an Effective Tool for Research and Education. In M. Marlino, T. Sumner, and F. Shipman, editors, *Proc. 5th ACM/IEEE-CS Joint Conference on Digital Libraries (JCDL 2005)*, pages 121–130. ACM Press, New York, USA, 2005.

[AVIVDLib2005a] M. Agosti, N. Ferro, and N. Orio. Annotations as a Support to Research Users. In T. Catarci, S. Christodoulakis, and A. Del Bimbo, editors, *Proc. 7th International Workshop of the EU Network of Excellence DELOS on Audio-Visual Content and Information Visualization in Digital Libraries (AVIVDiLib'05)*, pages 117–120, Centromedia, Viareggio, Italy, 2005.

Publications (3/3)

[DNIS2005] P. Bottoni, R. Civica, S. Levialdi, L. Orso, E. Panizzi, and R. Trinchese. Storing and Retrieving Multimedia Web Notes. In S. Bhalla, editor, *Proc. 4th International Workshop on Databases in Networked Information Systems (DNIS 2005)*, pages 119–137, LNCS 3433, Springer, Heidelberg, Germany, 2005.

[AVIVDLib2005b] P. Bottoni, R. Civica, S. Levialdi, L. Orso, E. Panizzi, and R. Trinchese. Storing and Retrieving Multimedia Web Notes. In T. Catarci, S. Christodoulakis, and A. Del Bimbo, editors, *Proc. 7th International Workshop of the EU Network of Excellence DELOS on Audio-Visual Content and Information Visualization in Digital Libraries (AVIVDiLib'05)*, pages 111–116, Centromedia, Viareggio, Italy, 2005.

[IPM2005] P. Hansen, and K. Järvelin. Collaborative Information Retrieval in an information-intensive domain. *Information Processing & Management*, 41(5):1101–1119, 2005.