

Repositories  
Collaboration  
Web application design  
and implementation  
Digital libraries  
WAI  
Social tagging  
Ontology management  
Semantic Web Services  
Online dictionaries  
Joint authoring  
Business Grids  
Distributed archives  
Metadata schema management  
Plagiarism detection  
Podcasting  
OAI protocols  
Group calendars  
Unified messaging  
Collaborative filtering  
Unified search & browse  
DL Evaluation  
Location-aware service  
Multimedia archive  
Ad-hoc workflows  
Full text search and OCR  
Online decision making  
Self-organizing communities  
Proactive monitoring

# DSD

institution

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DEPARTMENT OF  
DISTRIBUTED  
SYSTEMS

## DSD

Established in 1994, MTA SZTAKI DSD (Department of Distributed Systems) was one of the very first to introduce and apply WWW technologies in Hungary. Since the mid-90s DSD has specialized in the research and development of distributed applications and middleware, including Web-based software systems, groupware applications and services, digital library and archive systems, digital art projects and mobile computing. The Department has participated in numerous European and national (post-academic) joint research projects (DONAU, BREIN, MIK, ABILITIES, DELOS, INFRAWEB, ORG, GeneSyS, EUTIST-AMI, StreamOnTheFly, PublicVoiceXML, Promocio, Web4Groups, SELECT, CORES, KNIXMAS, E-Municipality).

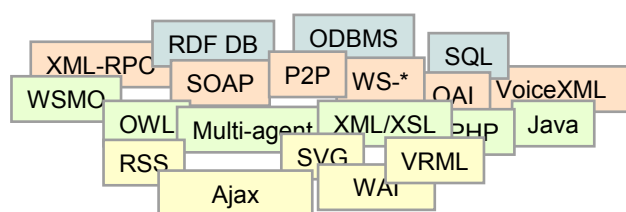
## Collaboration

To enrich collaboration, the smart integration of different communication channels (e-mail, chat, phone, etc.) and paradigms (joint editing, voting, etc.) is a key for us (Web4Groups). Generalization of rating, filtering (<http://select.sztaki.hu>) and voting (<http://voting.sztaki.hu>) allowed us to offer solutions so as to find the best links or best beer for one's taste. Supporting management work and creating awareness of project actions are in our current focus, via lightweight, flexible and ad-hoc workflows (E-Municipality, DONAU) and proactive monitoring (Promocio, DONAU).

## Semantics

The first level of applying semantics is to achieve interoperability between existing databases or metadata schemas (<http://cores.dsd.sztaki.hu>). We also experiment with this task in case of on-line dictionaries (<http://dict.sztaki.hu>). Based on common semantic platforms, we aim at real service level interoperability (INFRAWEB, BREIN) and business semantics (Promocio, DONAU).

## Technologies Used



## Art & Visualization

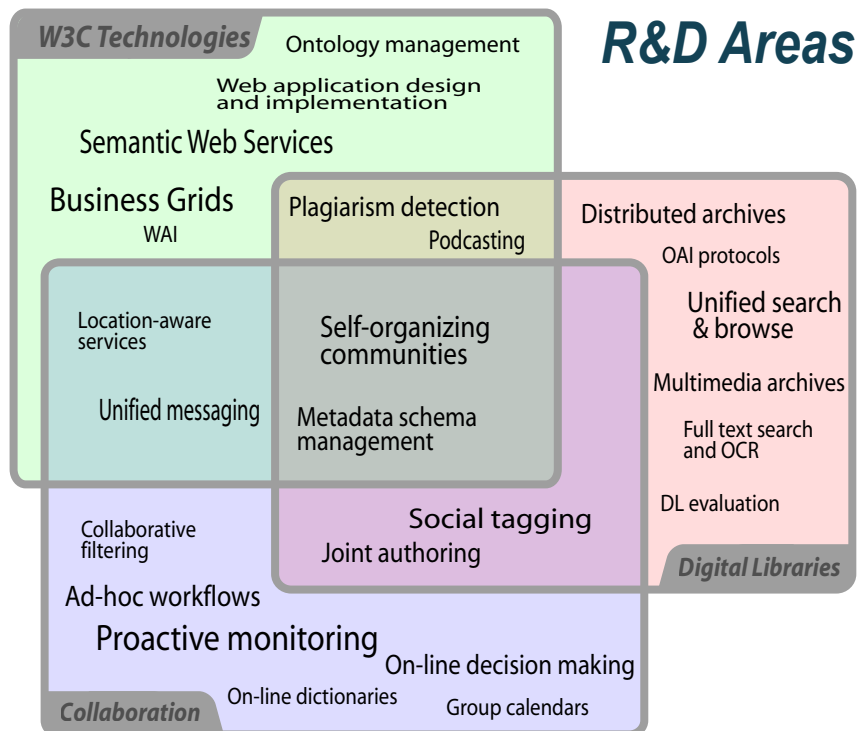
Going beyond interesting webpage designs, live internet art, such as interactively created or distorted art pieces or virtual 3D galleries, can help us to relax and find new ways of using our glooming desktop screens. Such excursions of our team resulted in the 3D visualizations of metro stations or digital library collections, among others.

## Outreach Activities

DSD organized ECDL2007, the 11th European Conference on Research and Advanced Technology for Digital Libraries (Budapest, 16-21 Sep 2007); WWW2003, the 12th International World Wide Web Conference (Budapest, 20-24 May 2003), and other workshops, courses in its domains. DSD runs the W3C Hungarian Office.

## References

RICOH (Japan), EADS Astrium Transportation (France), INRIA (France), Telefonica (TID) (Spain), PricewaterhouseCoopers (Luxembourg), Elsas Datamat (Italy), ATOS Origin (Spain), Fraunhofer Gesellschaft (Germany), Profium SA (Finland) Kapsch Aktiengesellschaft (Austria), Magyar Telekom (Hungary), T-Online (Hungary), T-Mobile (Hungary), arvato Systems Hungary (Hungary), FreeSoft Nyrt. (Hungary)



## Digital Libraries

Large, heterogeneous document sets can be produced abundantly today thanks to the OAI protocols. Unified collections, such as the National Digital Data Archive, ranging from paintings of the 19th century to Hungarian folk songs require special services to satisfy the users (<http://nda.sztaki.hu>). Also, community radios, additionally to content merging, need self-organizing social structures, backed up by peer-to-peer organization (StreamOnTheFly).

The creation of useful and usable services for digital library users is in our focus, for example to enhance the generation of one's own podcast (<http://radio.sztaki.hu>), or efficient browsing/querying (AQUA), or plagiarism detection (<http://kopi.sztaki.hu>).

DSD has participated in several EU Framework R&D projects (FP4-7) and in many others supported by Hungarian national funds. Our fields of expertise include research in digital libraries and archives (methods, technologies, applications), collaborative groupware systems, project management and workflow systems, and Semantic Web technologies.

Our research and innovation activities aim at providing advanced and sophisticated solutions, tools and services. Excellence is ensured by the wide range of technologies, know-how and applications we incorporate in our work, which is done by highly-qualified and experienced researchers and developers.

## Projects

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DONAU	RICOH-SZTAKI Collaboration
BREIN	Business Objective Driven Reliable and Intelligent Grids for Real Business
ABILITIES	Application Bus for Interoperability In enlarged Europe SMEs
MIK	MIK 3.1.2. Service and Application Development for Mobile Systems
Promocio	Proactive Multimodal Collaboration and Monitoring Platform for Independent Organizations
ORG	National Cancer Registry
INFRAWEBs	Intelligent Framework for Generating Open (Adaptable) Development Platforms for Web-Service Enabled Applications Using Semantic Web Technologies, Distributed Decision Support Units and Multi-Agent-Systems
GeneSys	Generic Systems Supervision
StreamOnTheFly	Personalized Community Radio Program with Collaborative Filtering Agents and Bandwidth Sensitive Streaming
PublicVoiceXML	VoiceXML Trial for and Open Source Reference Implementation
E-Municipality	Demand Driven Information Tools for E-Administration
HEKTÁR	Applying Open Digital Library Recommendations to Hungarian ElectronicLibraries
Web4Groups	Transfer of Knowledge between Research, Education, Business and Public Administration through the World Wide Web
DELOS NoE 1-2	Network of Excellence on Digital Libraries
SELECT	Rating and Filtering of Scientific, Technical and other Network Documents
CORES	A Forum on Shared Metadata Vocabularies
AQUA	Advanced Query User Interface Architecture
KNIXMAS	Knowledge Shared XPS-based Research Network Using Multi-Agent Systems
NDA@SZTAKI	NDA@SZTAKI: searching and browsing facility for the digital archives of cultural heritage
KOPI	Online Plagiarism Search and Information Portal

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## DSD's Projects and Expertise

R&D Projects															Services									
DONAU	BREIN	MIK	ABILITIES	PROMOCIO	ORG	INFRAWEBS	GeneSys	StreamOnTheFly	PublicVoiceXML	E-Municipality	HEKTÁR	Web4Groups	DELOS NoE 1-2	SELECT	CORES	AQUA	KNIXMAS	Online dictionary	Online Voting System	NDAO@SZTAKI	KOPI	Scientific visualization	Digital art projects	Homepage development

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