

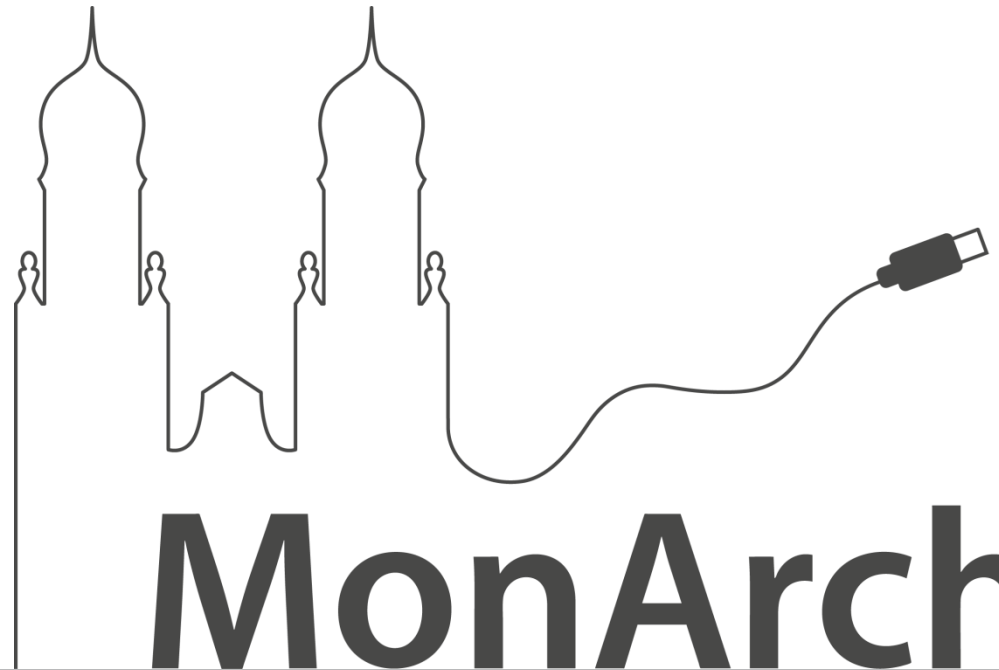
Digital Archives for Cultural Heritage

Speakers

Alexander Stenzer

Claudia Woller

30th May 2011



MonArch

MonArch at a Glance

- The overall goal of the MonArch project is to define a **methodology** for **making accessible, catalogue, inventory, digitally secure**, and **preserve** the archives of monumental built and archeological heritage.
- MonArch approach: Storing digitized archival **based on their structural position within a building or site**

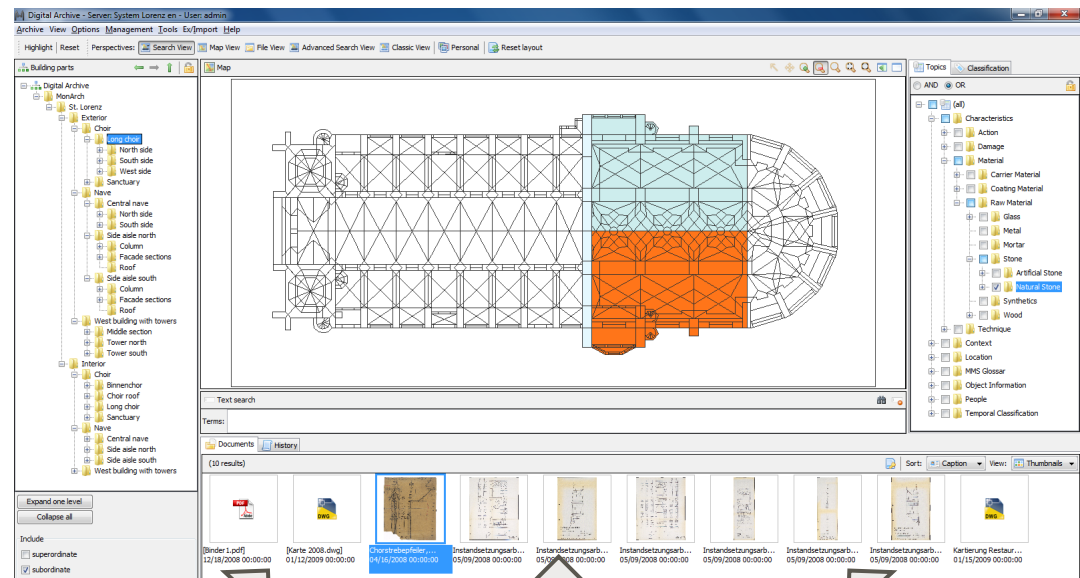
- Have you ever tried to find information concerning a certain building part in an archive?
- Why store digitized documents based on their structural position within a building?
 - Documents belonging to a building's archive are usually only related to a certain part of a building.
 - Archaeology: Sites are normally excavated room by room.

- Common problems
 - The documents themselves are of value, frequent use wears and damages them.
 - Sometimes even inventory numbers are missing.
 - Though if an archive is well-organized, search queries are limited and only one-dimensional ones are possible.
- ➔ Great effort, less effective

The **MonArch Digital Archiving System** is a metadata repository used for spatial capture, semantical tagging, management and storage of digital documents.

Supported types:

- Text documents
- Images
- Scans
- Drawings, CAD
- Maps
- Plans
- 3D-reconstructions
- Tables
- Reports
- ...

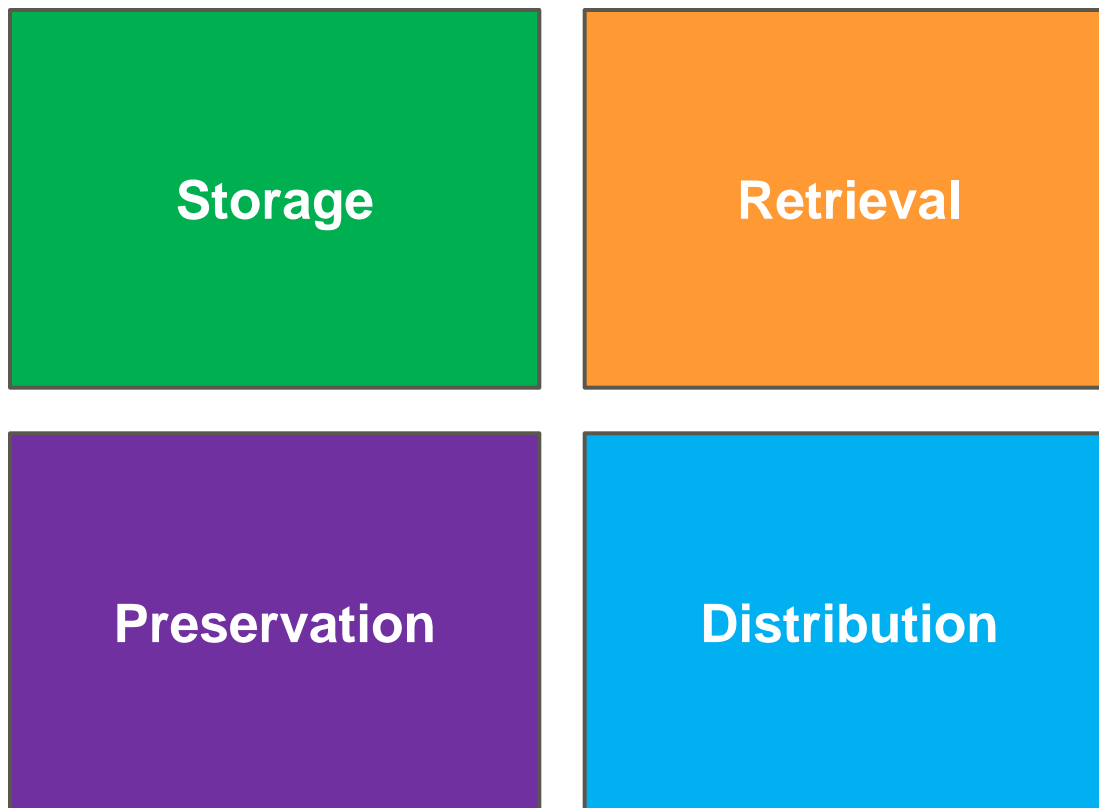



CAD maps


text documents


any formats

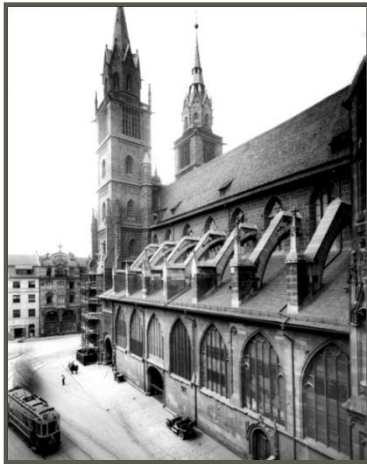
- There are four main tasks during the project we would like to discuss in more detail:



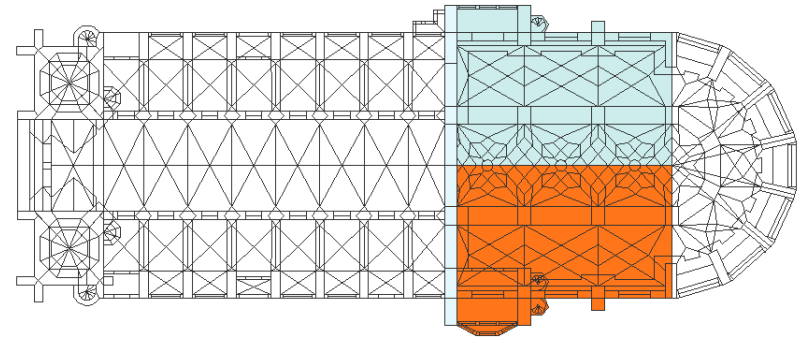
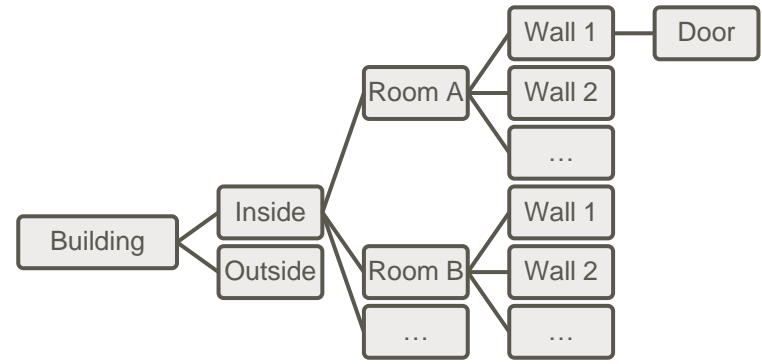
Information Storage

- Documents
 - Historical maps and plans, photographs, text documents, climate data, stream based data ...
 - All file formats are supported
- Metadata
 - Automatic extraction
 - Can be modified by the user
 - Incremental assignment is possible every time
- Navigational map and geo-objects
 - Imported as CAD-graphics or other digital drawings

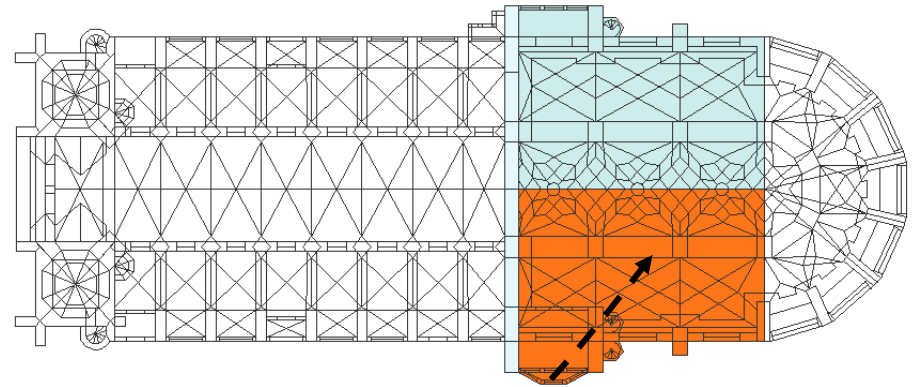
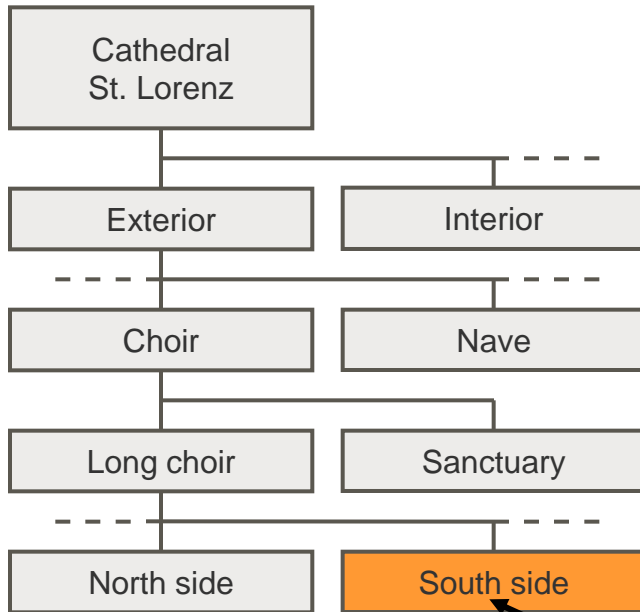
Spatial Reference



Information

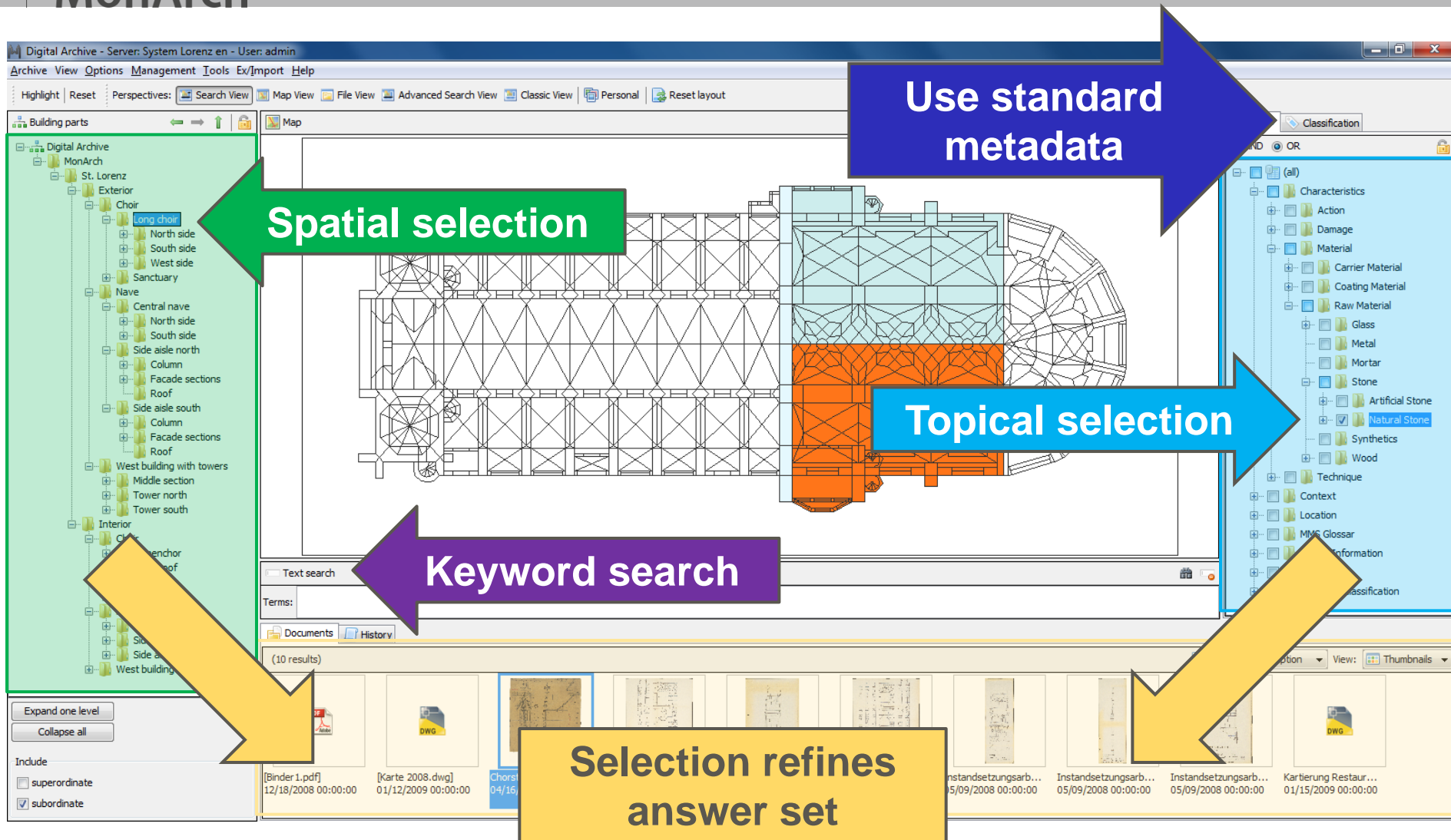


Representing Structure



Information Retrieval

Information Retrieval



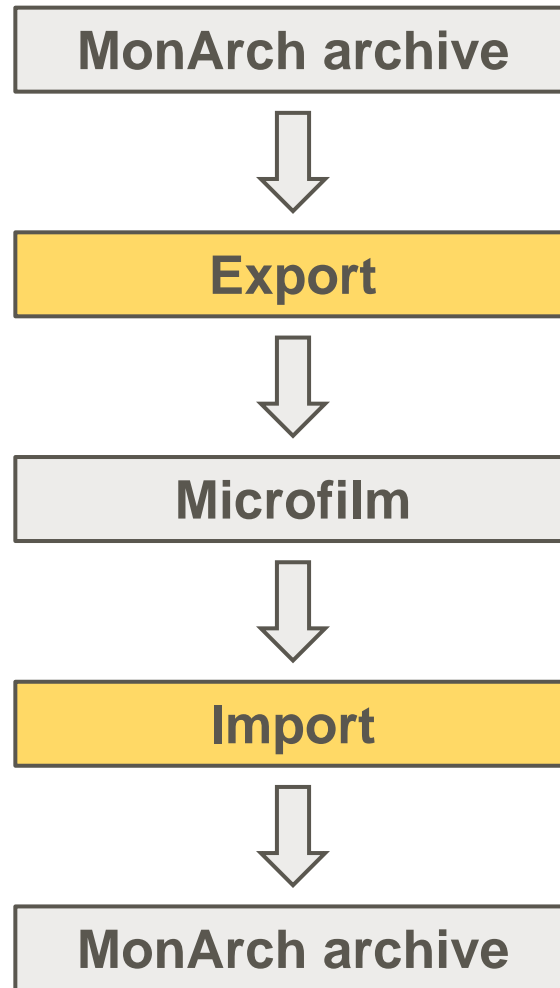
The screenshot shows the MonArch Digital Archive interface. The main window displays a 3D architectural model of a building with a section highlighted in orange. The interface includes a left sidebar with a tree view of building parts, a top menu bar, a search bar, and a right sidebar with a classification tree. Annotations with arrows point to various features:

- Spatial selection:** A green arrow points to the tree view on the left.
- Use standard metadata:** A blue arrow points to the top menu bar.
- Topical selection:** A blue arrow points to the classification tree on the right.
- Keyword search:** A purple arrow points to the search bar.
- Selection refines answer set:** A yellow arrow points to the search results list at the bottom.

The search results list shows 10 results, including files like [Binder.1.pdf], [Karte 2008.dwg], [Chorst...], and several [Instandsetzungsarb...].

Preservation

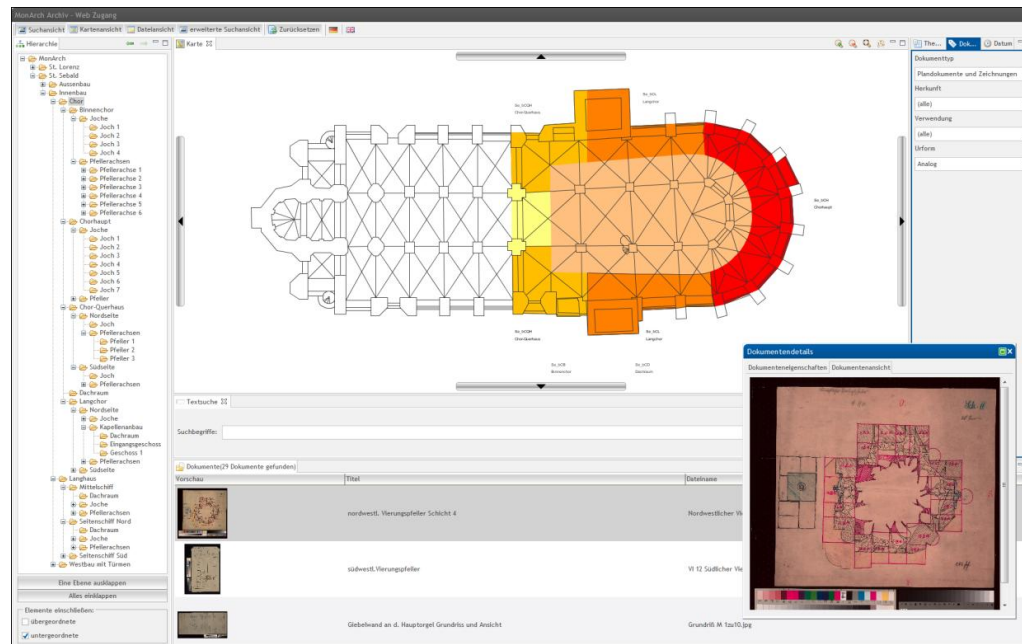
Long-term Preservation



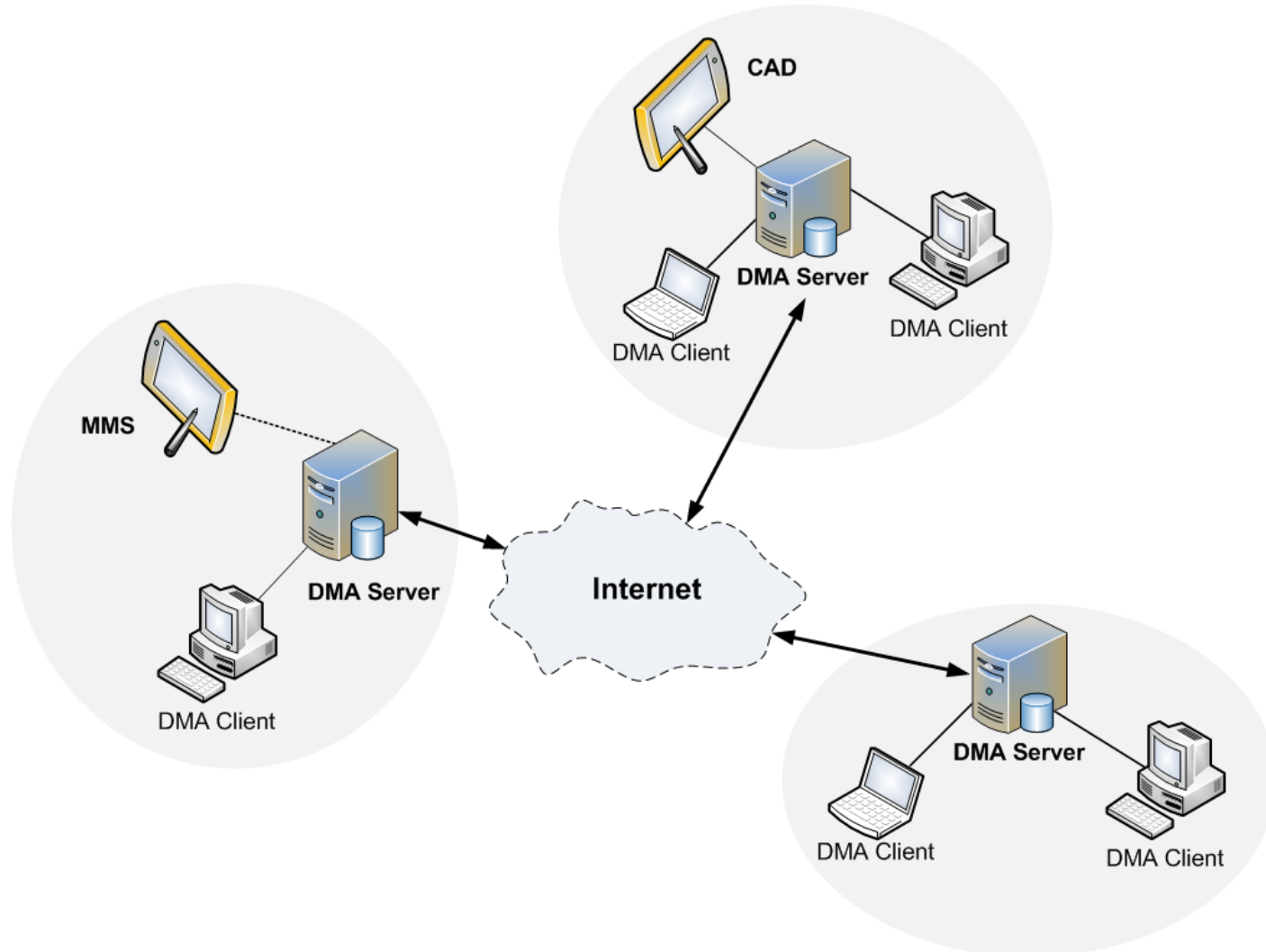
Distribution

Access Information

- Access to digital archives in the office, on the way or on location.
- Access possibilities
 - “Normal” access: **MonArch Client** (read + write)
 - Web access: **MonArch Webclient** (read)
- Multiuser-environment



Distributed Archives



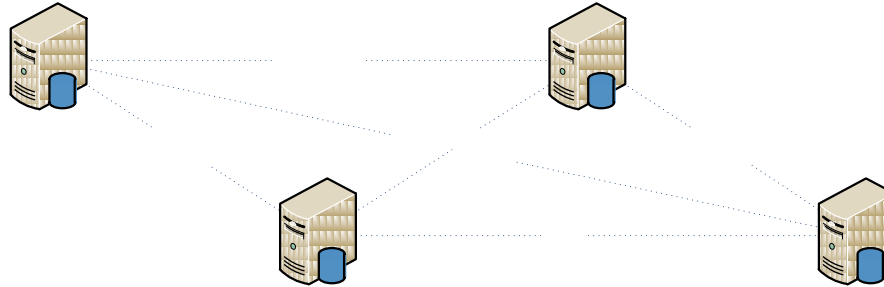
Live Demonstration

Conclusion

- Client/server architecture
 - Multiuser environment
 - Server-side user authentication
 - Local management of access rights
- Peer-to-peer architecture
 - Network of autonomous digital archives
 - Retrieve information distributed over more than one site by a single query
- Web services
 - Easy-to-use Webclient
 - Extensibility
- Combination of semantical, relational and GIS functionality
- Keyword search

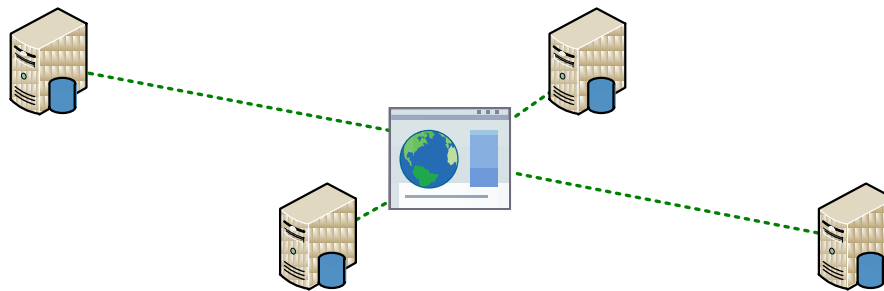
Application Scenarios

- Single building



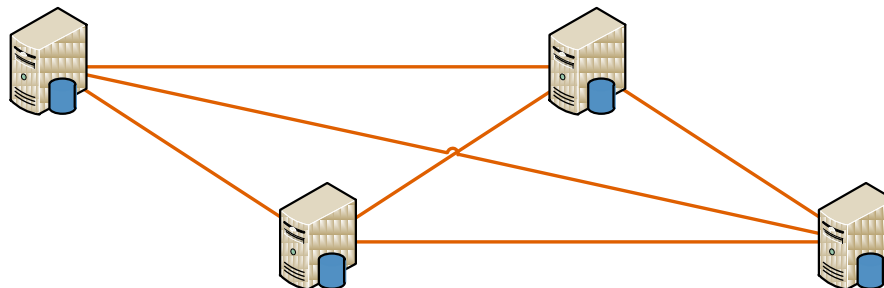
**Stand-alone
archives**

- Overview, set of buildings



**Connected
using Google
Earth**

- Connected archives



**Peer-to-Peer
connection**

- MonArch Client
 - Additional features: Layer system
 - Integration of external archives, e.g., Prometheus & Bildarchiv Foto Marburg
- Climate data
 - Continuous import of sensor data (stored in database)
 - Visualize statistical series (e.g., march of temperature)
- Google Earth
 - Overview of worldwide MonArch archives

- Joint research effort of the University of Passau and the University of Bamberg **in cooperation with preservation agencies, cathedral works and other maintainers of monumental sites**, both European and international.
- **Selected partners and users**
 - Lutheran Parishes of St. Lorenz and St. Sebald, Nuremberg / Germany
 - Cathedral St. Stephan, Passau / Germany
 - Kaiserthermen (Imperial Baths), Trier / Germany
 - St. Kassian, Regensburg / Germany
 - Francke Foundations, Halle / Germany
 - Monuments and Context in Bukhara / Uzbekistan

Discussion

Contact

Dipl.-Ing. (FH) Claudia Woller

Project Management MonArch
Institute for Information Systems and
Software Engineering (IFIS)

University of Passau
94030 Passau

Phone: +49 (0851) 509 3185
Fax: +49 (0851) 509 3182

Claudia.Woller@uni-passau.de
www.monarch-project.eu

Prof. Dr. Burkhard Freitag

Chair of Information Management
Institute for Information Systems and
Software Engineering (IFIS)

University of Passau
94030 Passau

Phone: +49 (0851) 509 3131
Fax: +49 (0851) 509 3182

Burkhard.Freitag@uni-passau.de
www.im.uni-passau.de