

IM2.DMA

Data Management and Access

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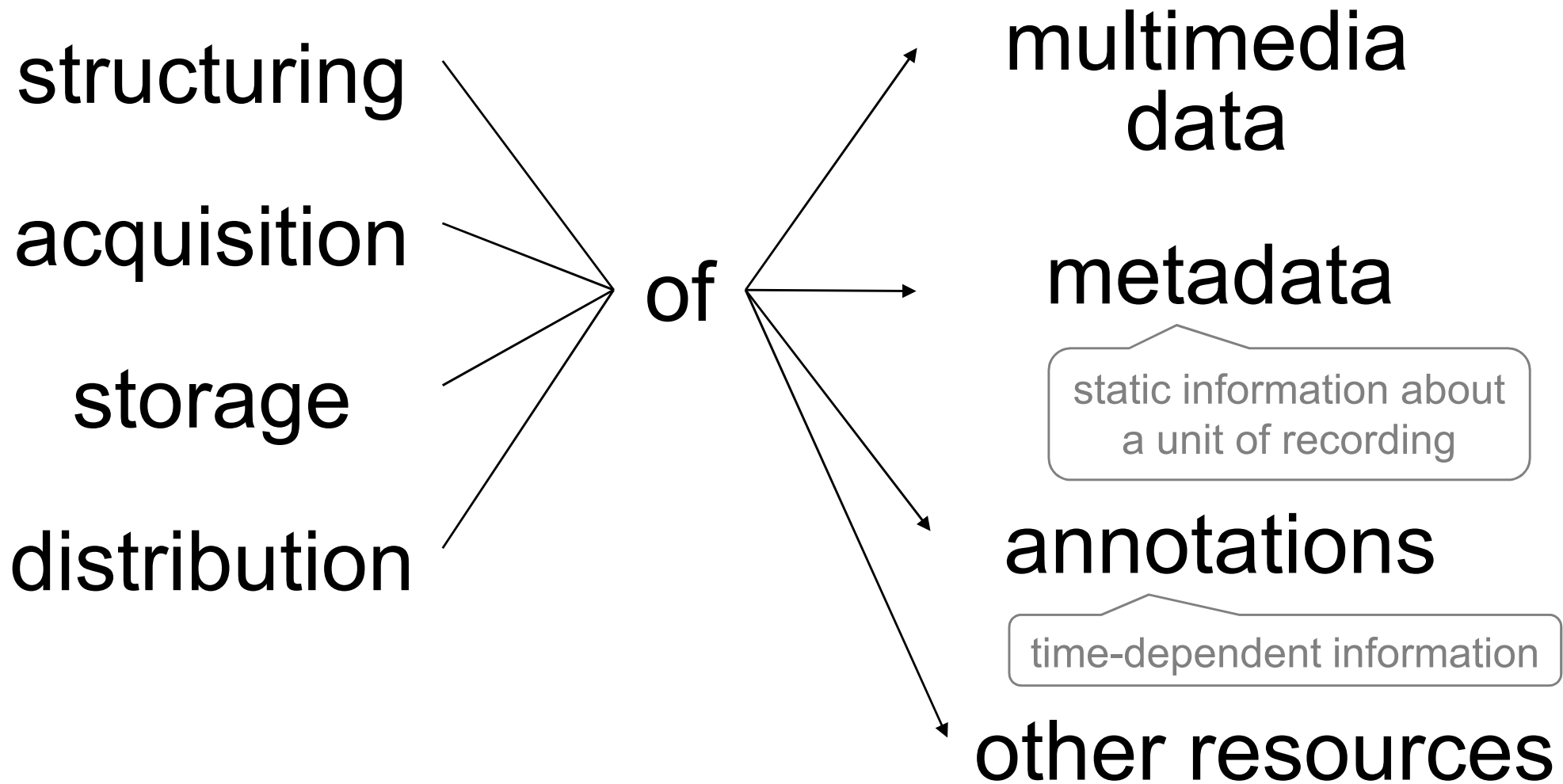
IM2 Summer Institute
August 31, 2009



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R&D issues in IM2.DMA



IM2.DMA in 2008-2009

Data Management and Access

*Devices
for data
acquisition*

- T1. Interoperability of meeting rooms
- T2. Portable recording devices for conferences and talks
- T3. RFID enabled meeting rooms
- T4. Record pilot data with new devices

*Data and
software
repositories
and portals*

- T5. Normalization of metadata and annotations formats
- T6. Media file servers: maintenance, improvement of delivery formats
- T7. Databases for multimedia data, metadata and annotations
- T8. IM2 demo and software portal

A brief history of IM2.DMA

- 2005: decision to create an IP on data and devices
 - phase 1: IM2 organized rather by partner
 - phase 2: new, better-integrated structure
 - election of IP heads, then elaboration of work plan
- 2006: start of IM2.DMA
- **Partners: Idiap, DIVA/UniFr, EIAFr, ISSCO/UniGe, CGC/EPFL, IAM/UniBe**
- 2007-8: support projects, MultiEval and InkAnno
- 2008: re-organization following budget reduction
- 2009: end of phase 2, preparation of phase 3

Evolution of DMA tasks from years 1-2 to years 3-4

2006-2007	2008-2009
<p>Devices for data acquisition T1. Improve portability of SMRs T2. Integrate the use of documents in SMRs T3. Record pilot data with new settings</p> <p>Metadata/annotations: structuring/acquisition T4. Metadata: def. of common format; manual acquisition or conversion from other sources T5. Annotations: def. of shared annotation model; manual acquisition or automatic annotation</p> <p>Data storage and access T6. Media file servers: maintain; improve usability and reliability T7. Databases for multimedia data, metadata and annotations</p>	<p>Devices for data acquisition T1. Interoperability of SMRs T2. Portable recording devices for conferences and talks T3. RFID enabled meeting rooms T4. Record pilot data with new devices</p> <p>Data and software repositories and portals T5. Normalization of metadata and annotations formats T6. Media file servers: maintenance and improvement of delivery formats T7. Databases for multimedia data, metadata and annotations T8. IM2 demo and software portal</p>

Overview of achievements over the past four years

January 2006 – August 2009

T1. Portability and interoperability of meeting rooms

- Video recordings using IVC-4300 card writing to disk
 - e.g. Idiap SMR records 11 channels (cameras + laptops)
- Maintenance and upgrade of SMRs & recorders
- Tested communication solutions between SMRs
- Achieved communication between Idiap and DIVA/UniFr SMRs using the EVO system from CERN
 - successful multimodal connection (audio, video, slides)
 - user-friendliness to be evaluated, depending on needs

T2. Portable recording devices for conferences and talks

- Idiap PAS services commercialized by Klewel spinoff
 - received Seal of e-Excellence of the European Multimedia Forum at CeBIT 2008
 - selected for Venture Leaders 2008 by Venturelab (CTI)
- Increased portability & facilitated deployment
 - automatic cameraman, automatic director
 - improved capture application and slide capture from beamer
 - Firewire and VGA2USB
 - result compares favorably to capture stations on the market

T3. RFID enabled meeting rooms

- RFID environment operational in the DIVA/UniFr SMR
 - integrated & synchronized with other devices & software
 - participants can register using personal RFID card
 - registered participants can make individual annotations
 - meeting can be replayed later indicating the annotations
- Meeting assistant based on printed documents
 - recognizes documents on the table
 - detects hand movements of the meeting chair

T4. Record pilot data with new devices

- More recordings are made using Idiap PAS, Klewel, and DIVA/UniFr
 - dozens of events
 - hundreds of hours
 - research corpora: NIST RT, job interviews, lies, ...
- In addition of course to the IM2/AMI Corpus

T5. Normalization of metadata and annotations formats

- IM2/AMI annotations released in several formats
 - corrected NXT and database-ready TSV + tools
- IM2/AMI metadata released
 - declarative IMDI and OAI formats with customized browser as online demo, plus DB-ready TSV, plus tools
- IM2/AMI corpus documents registered to DB
- Participate to ISO TC37/SC4 standard on dialog acts
- *Ongoing work:* share metadata of AMI/IM2 Corpus over the OLAC network of Language Archives

T6. Media file servers:

<http://mmm.idiap.ch>

- Maintenance and upgrade of the system
- Added Flash streaming server
- Added attractive interface in Adobe Flex
- *Ongoing work:* adapt part of MMM to distribute a public version of the GEMEP DB of the Affective Sciences NCCR
 - towards a communal repository of data

T7. Databases for multimedia data, metadata and annotations

- Released [Hub 2.2](#) client/server architecture for live annotation exchange
 - improved: connection efficiency, richness of possible queries over annotations, handling of the results by clients, robustness, C++ interface
 - detailed testing and documentation
- IM2/AMI annotations were entered into the Hub's DB
- Released [ezHub](#): allows definition of data structures used in the Hub, for instance meeting-related ones
 - with documentation, tutorial, and examples

T8. IM2 demo and software portal

- Ongoing work on IM2-wide demo template using video recordings + documentation
 - quite delayed by lack of workforce
- Will send soon requests for demo descriptions to IP heads

IM2.DMA sub-projects 2007-2008

- InkAnno (IAM/UniBe)
 - delivered editor for handwriting annotation
 - delivered reference transcriptions of handwriting data (pen and whiteboard) of IM2/AMI Corpus
 - will be used in PhD thesis at UniBe in IM2.HMI
- MultiEval (ISSCO/UniGe)
 - delivered MultiEval demonstrator: online comparison of annotation files (reference vs. candidate)
 - <http://www.issco.unige.ch:8080/multieval/>
 - available metrics: for ASR and segmentation, for NXT format

Networking and perspectives

- IM2.DMA connected to most other IPs
- Communication: IM2.DMA wiki
 - <http://www.im2.ch/intranet/ips/wiki/DMA>
- IM2.DMA involved in organization of MLMI
 - Machine Learning for Multimodal Interaction
 - 2007, 2008 → in 2009, joint event with ICMI
- Klewel: SNSF image of the month, Feb. 2009
- Future, phase 3: support role in IP1 and IP2
 - less data, but more infrastructure for demos