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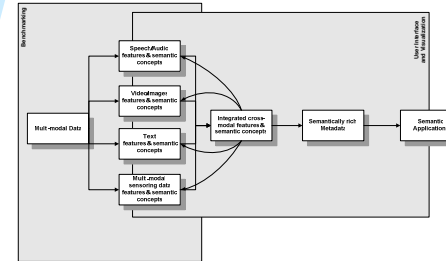


Signal Processing and Speech Communication Laboratory (SPSC Lab) Graz University of Technology

Measurable Intelligent and Reliable Semantic Extraction and Retrieval of Multimedia Data

Multimedia data has a rich and complex structure in terms of inter- and intra-document references and can be an extremely valuable source of information. However,

this potential is severely limited until and unless effective methods for semantic extraction and semantic-based cross-media exploration and retrieval can be devised. Within this context, the MISTRAL project focuses on

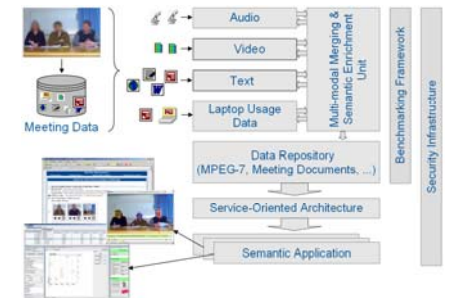


new research in the field of "multi-modal meeting recordings".

The project aims at smart semi-automatic solutions for semantic annotation and enrichment of multi-modal data from meeting recordings and meeting-related documents. At present,

face-to-face and virtual meetings increasingly take place in business processes. Managers and knowledge workers spend up to 80% of their working time in meetings for distinct purposes, e.g. decision making, problem solving, learning and training, reaching a common understanding, or exploration of new ideas.

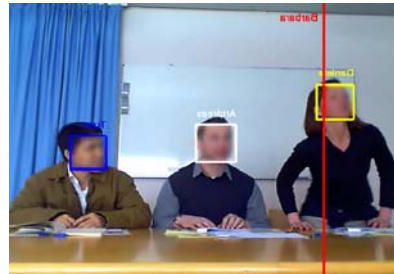
The MISTRAL system allows different access possibilities to meeting information and covers various information needs for meeting recordings from low- to high-level semantics.



Analyzing Meeting Data in Realtime

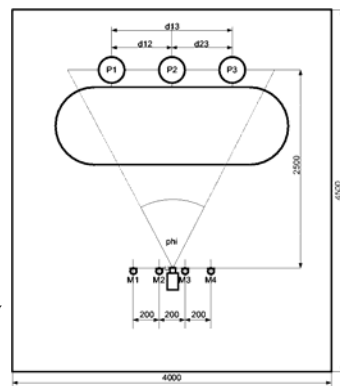


MISTRAL is analysing audio and video data captured in the meeting to find which interactions take place and where persons are localized. The integration of speech to text allows MISTRAL to obtain topics currently addressed in the meeting. To enhance the reliability of the media analysis, MISTRAL monitors interactions between the presenter and the presentation laptop to obtain additional topics currently addressed in the meeting.



The following features are extracted by MISTRAL:

- Identification of the current speaker
- Gender and gestures of the speaker
- Identification of the position of meeting participants
- Actions of participants like dialogs, monologs, persons walking around, persons leaving the room etc.
- Topics of a meeting via speech to text technology and interaction monitoring



Semantic Retrieval of Meeting Data

Based on the extracted features MISTRAL provides semantic search capabilities and tools for analyzing meetings. Search is based on a flexible service oriented architecture and allows searching for topics addressed in a meeting and interaction concepts like discussions. Besides finding meetings as a whole, MISTRAL's search capabilities additionally allow the targeted retrieval of single meeting segments or single scenes, thereby reducing the time to find the correct position of topics or interactions within the meeting recording. Supplementary MISTRAL provides tools for detailed analysis and annotation of one meeting in terms of who has actively participated in a meeting and which topics have been addressed during the Meeting.



In summary, MISTRAL provides the following functionality:

- Flexible service oriented architecture for semantic retrieval of meeting data
- Tools for analyzing interactions and topics addressed in one single meeting
- Tools for annotating the meeting recordings

