Event Recording in Smart Room

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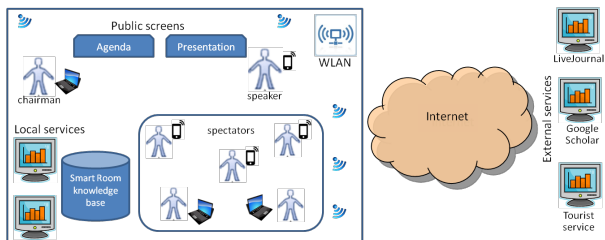April 25, 2013, Petrozavodsk, Russia

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Smart Room in PetrSU

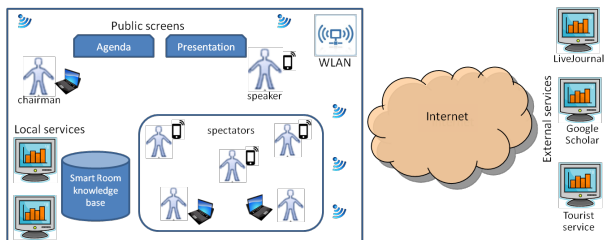Project is intended for automated conduction of:

- conferences and meetings
- seminars and trainings
- lectures and labs

SR system exploits the Smart Space concept and Smart-M3 platform
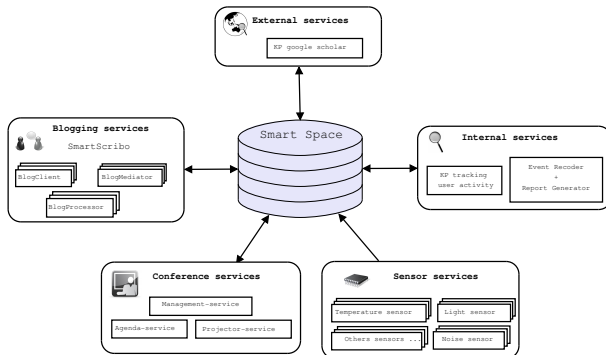
SmartRoom Functions

- Automatic registration of participant presence
- Presentation and conference management using mobile device
- Measurement of room physical characteristics
- Providing feedback through blogging

Smart Room Service Architecture

- Services allow users to interact with the Smart Room and obtain different information
- Users access services via personal mobile devices
- Every service is a data source that can be processed and visualized

Event Recording

Event definition

- Data change in smart space identifies event
- Subset of data in smart space describes event

Interval definition

- Event registration indicates interval start
- Another event registration indicates ending
- Intervals may have internal events and intervals
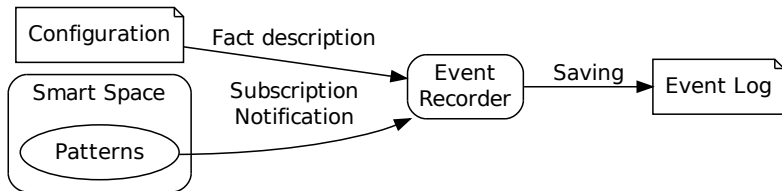
Event Visualization in Smart Room

Visualization of events happenned during the conference allows:

- clearly see the time of event occurence
- depict relations between events
- produce summary reports for analisys
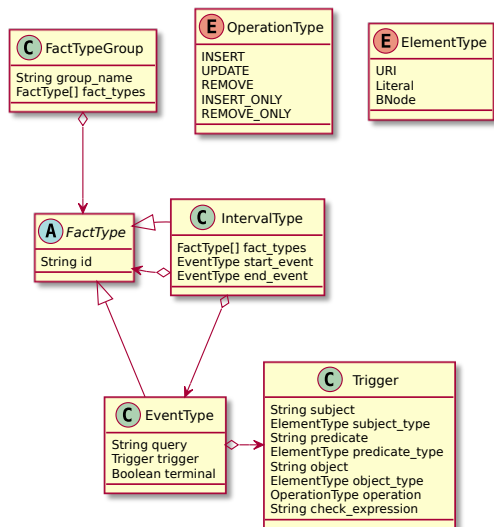- debugging cooperation between Smart-M3 agents

Event Recorder Lifecycle

- Read event description from configuration file
- Setup subscriptions to smart space
- Upon recieving notification from SIB, register event and retrieve event description from smart space
- If interval is started, setup subscriptions for internal facts
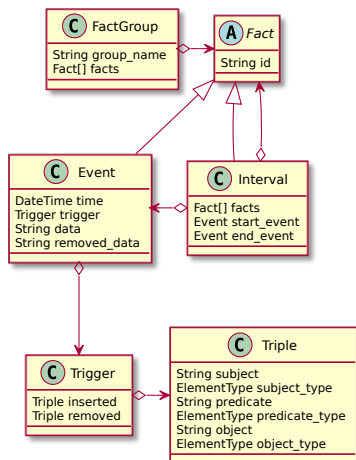- Write information into output file

```
Configuration ──── Fact description ──┐
                                      │
                                      ▼
Smart Space          Subscription   Event
                     Notification  Recorder ── Saving ──▶ Event Log
  Patterns ──────────────────────────▶
```
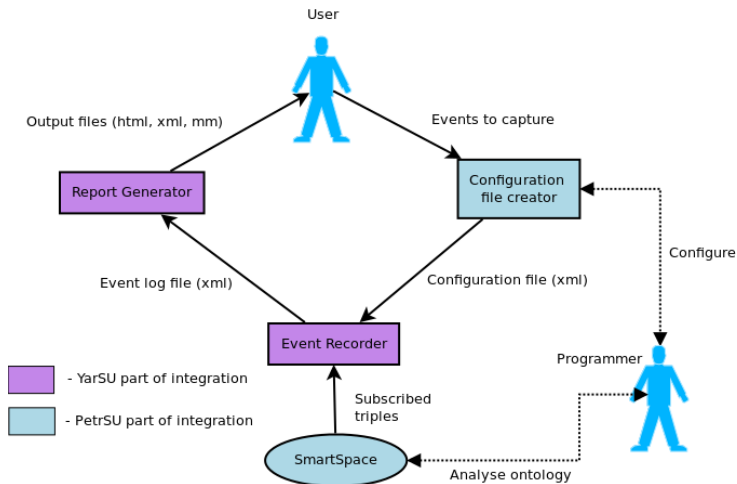
Event Recorder Ontological Models

Smart Room Event List
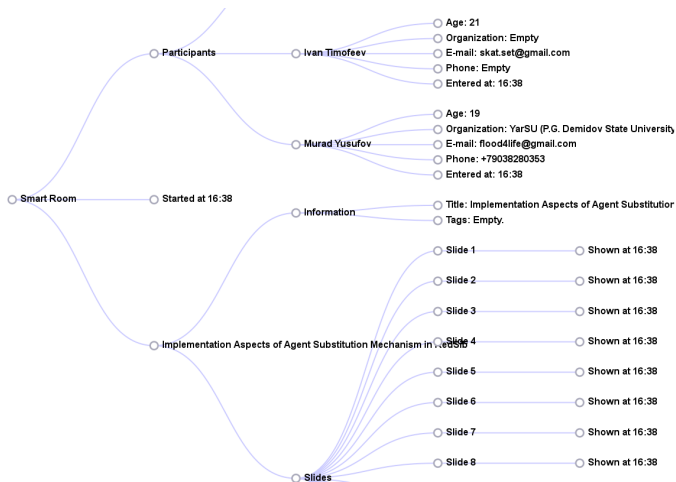
We decided to track the following events:

- Conference start
- Conference end
- Presentation start
- Presentation end
- Slide change
- Participant presence
- New message recieved through the blog service
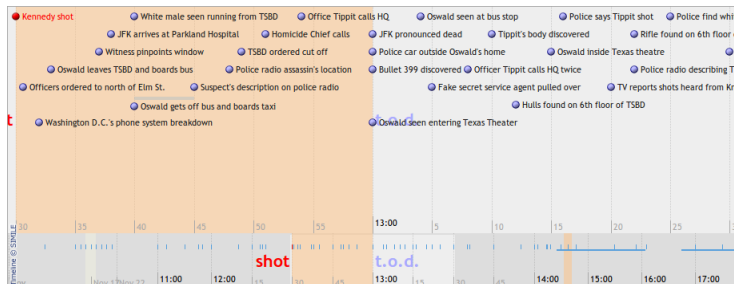
Systems Integration Scheme

Visualization: Mind Map

- Mind Maps display events as a graph
- Suits best to display complex hierachical events

Visualization: Timeline

- Timeline displays events in sequential order
- Suits best to display parallel and lasting processes

Results

- Generalization of event recording features to any smart space application
- Integration of the event recording features into the Smart Room system
- Producing summary reports on held events in two formats: mind map and timeline

Further development: support online visualization when reports are formed on-the-fly and immediately provided for public observation

Thank you for attention!