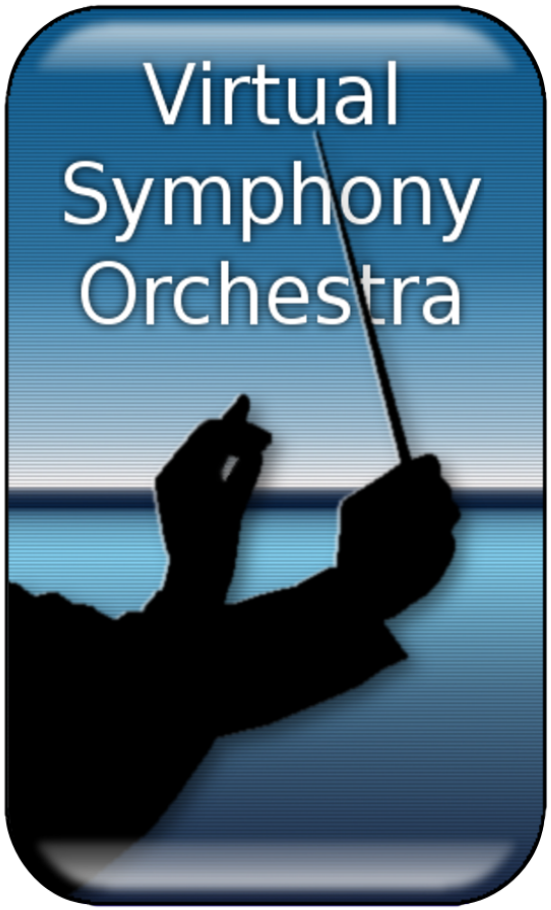
VSO Client Acceptance Test

TECHNISCHE UNIVERSITÄT MÜNCHEN



Bayerischer Rundfunk

Agenda

- Project Management
- Project Goals and Requirements
- Current Status and Future Work
- Prototype Configuration
- Prototype Hands-on Demonstration

Project Management

by Martin Ott

Project Participants


Bakr Albatran


Dimitri Alexeev


Daniel Angermeier


Oliver Arafat


Jan Birke


Bernd Brügge


Eva Fenzl


Jason Franklin


Catinca Golesteanu


Nicolas Heuser


Christian Hörwick


Volker Iden

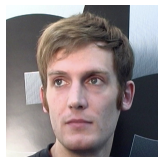

Christian Kern


Michael Knapp

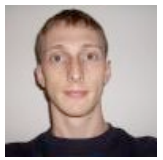

Peter Lachenmeier


Karim Morsy


Martin Ott


Florian Schneider


Christian Schröder


Harald Stangl


Christoph Teschner


Federico Tessman


Leon von Tippelskirch


Periklis Tsirakidis


Timo Wolf


Diego Wyllie


Vera Yordanova

Project Organization

Participants and Partners

Client: Mariss Jansons,
Symphonie Orchestra
des Bayerischen Rundfunks

Project Management:
Prof. Bernd Brügge
Timo Wolf
Martin Ott

Cross-Functional and Organizational Teams

- Project Management Team
- Architecture Team
- Innovation Team
- Demo Team

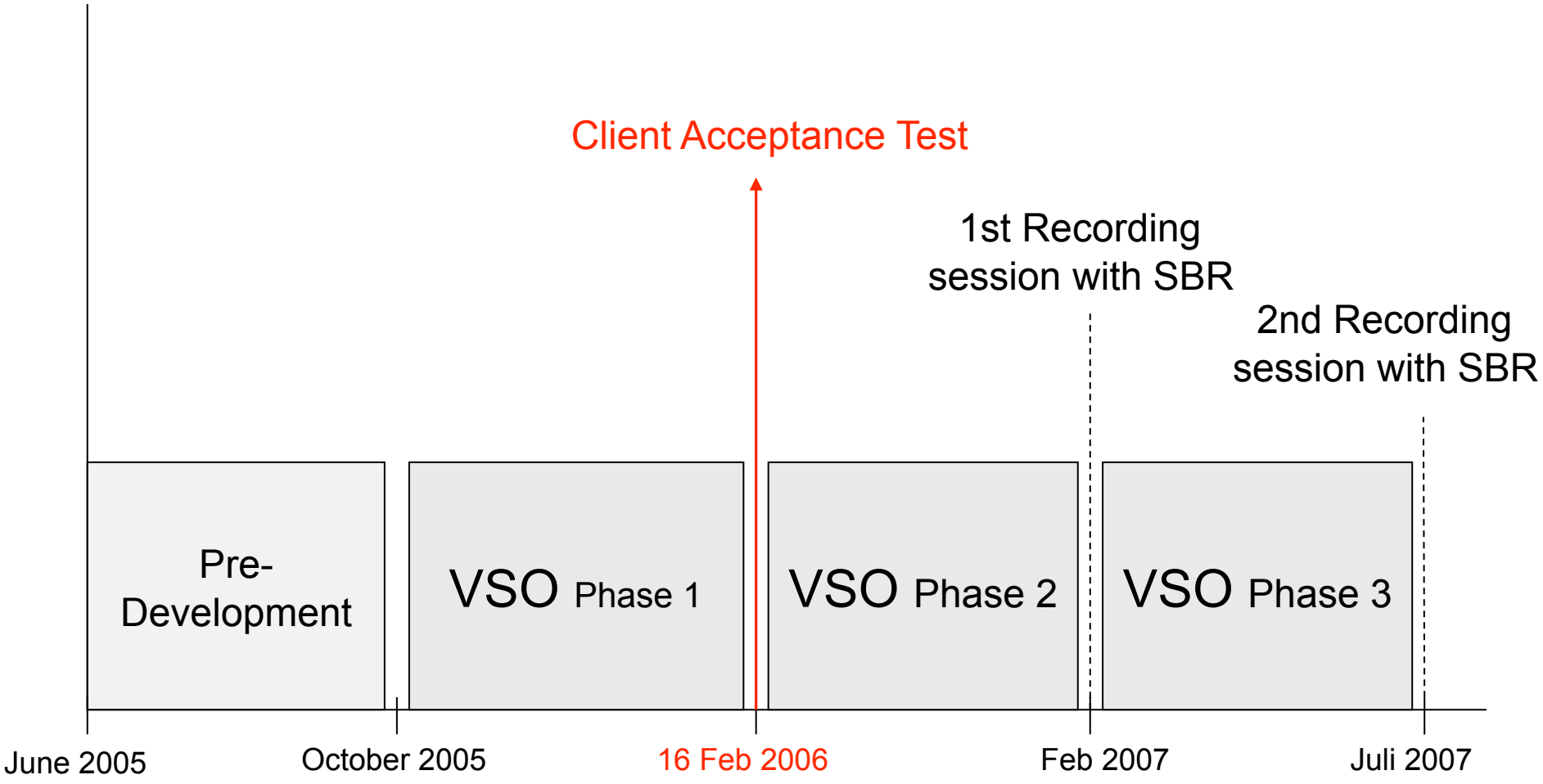
Development Teams

- Orchestra Team
- User Interface Team
- Audio Team
- Video Team
- Tracking Team

Other important Roles:

- Core Architect
- Review Manager
- Sound Engineer

Project Schedule



Project Goals and Requirements

by Vera Yordanova

Project Goals

- **Inspire** children for classical music
- **Teach** children to conduct
- **Experience** the feeling of conducting

Project Scenario

- Alice is standing before the virtual symphony orchestra and wants to conduct.
- The orchestra designer creates and positions an orchestra for her.
- At first Alice walks through the orchestra and listens to the music.
- When she is ready she starts conducting.
- She has trouble conducting and wants to be taught by the System.

Functional Requirements

- Visual and acoustic 3D Environment
- Detection of conducting patterns (2/4, 3/4, 4/4 ...)
- Areal positioning of the listener
- Audio and Video time stretching
- Teaching modul
- Multimedia control

Non-functional Requirements

- **Audio and video scalability**
- **Usability**
- **Performance**

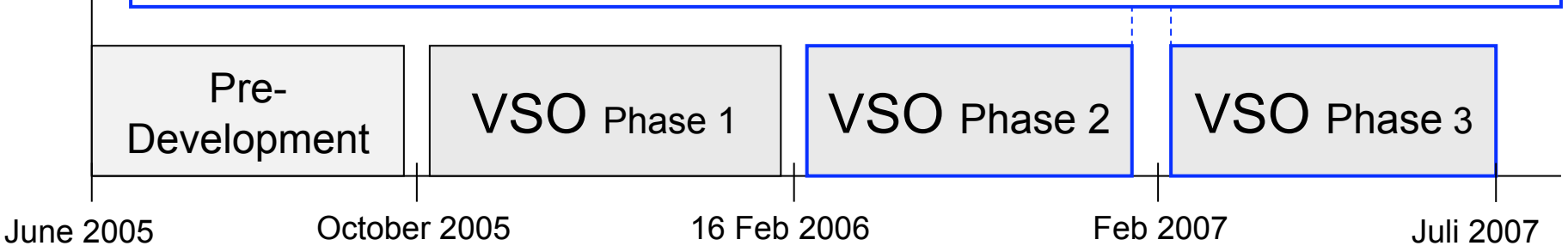
Project Current Status and Future Work

by Martin Ott

Current Status

Future Work: Diploma Topics

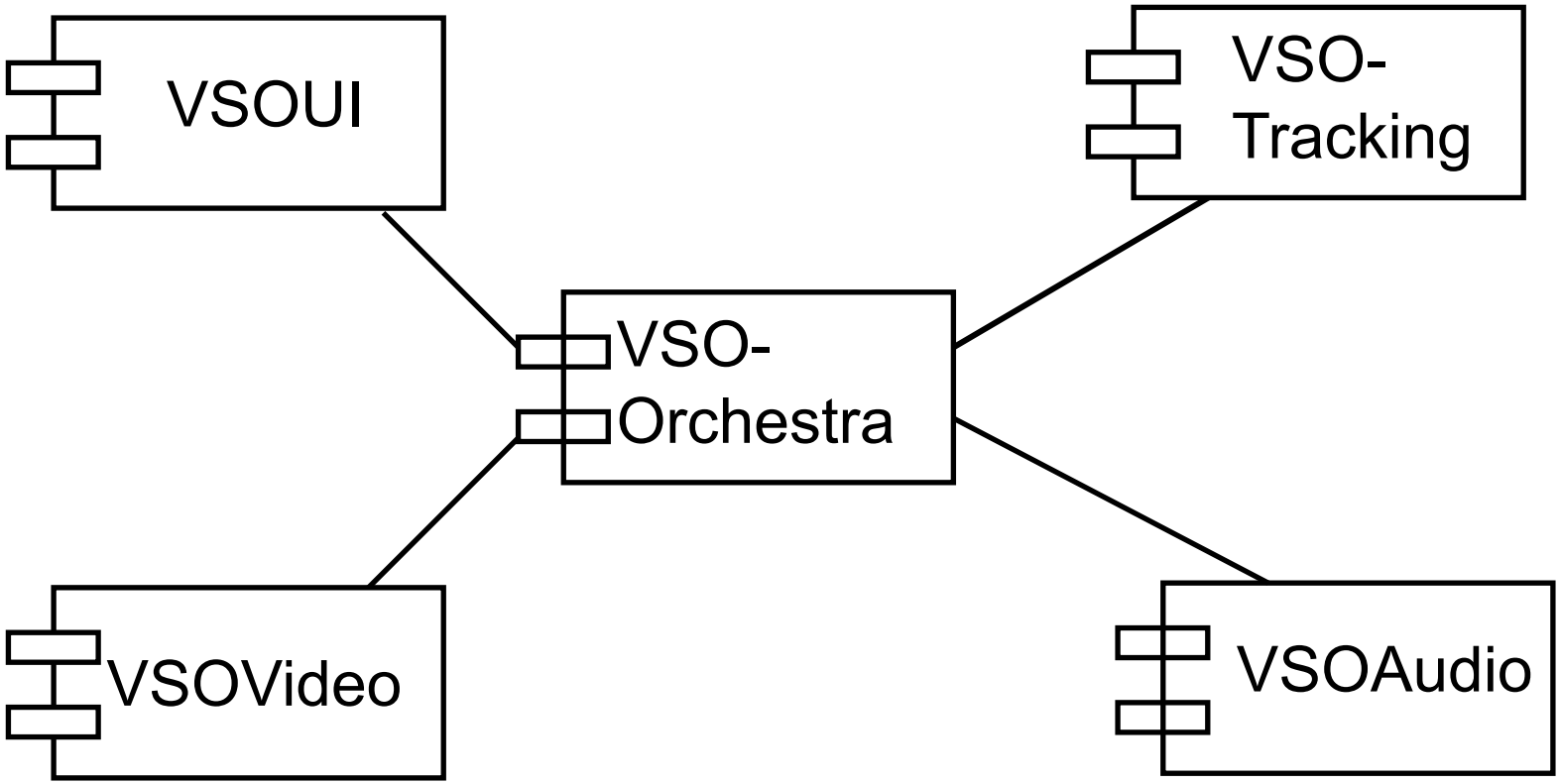
- Gesture and face tracking recognition for conductors
- Teaching a child how to conduct
- Augmented Reality VSO: synchronization of the orchestra and the musical score (Sibelius, Finale)
- Design and Implementation of the home scenario with a thin client
- VSO as Multiple Player Video Game
- Framework for multimedia interactive systems (e.g. Intelligent Home)



Prototype Configuration

by Jason Franklin

System Decomposition

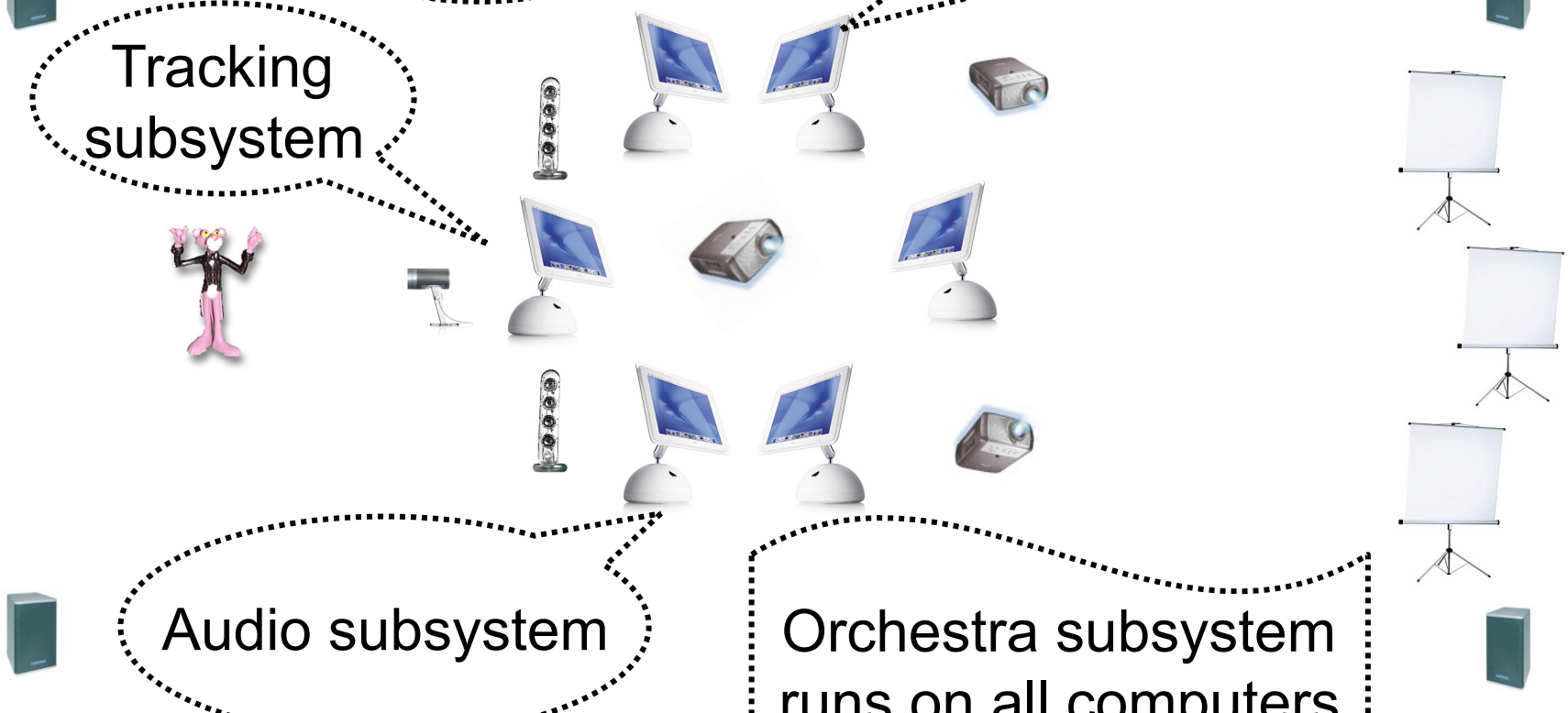


Prototype Configuration

User Interface runs on all computers

Video subsystem

Tracking subsystem



Audio subsystem

Orchestra subsystem runs on all computers

Prototype Demo

by Dimitri Alexeev

Prototype Demo: Requirements

- ✔ Visual and acoustic 3D environment
- ✔ Detection of the conducting patterns
- ✔ Areal positioning of the listener
- ✔ Audio and video time stretching
- Teaching modul
- Multimedia control

Prototype Demo: Scenarios

- **Walking through the orchestra**
- **Conducting the virtual orchestra**
- **Configure assembly of the musicians**

Hands-on Demo