

Visualizing the Volumetric Accuracy of Medical Tracking Solutions

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Project Partner: FRAMOS

Project Requirements Presentation

Computer Aided Medical Procedures (CAMP)

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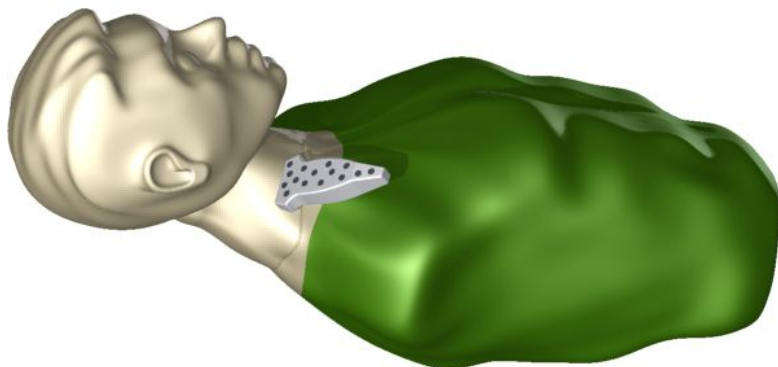
October 4, 2015

Overview

- Project Proposal
 - Background and Motivation
 - Problem Statement
 - Stakeholder
- Project Plan
 - Requirements and Specifications
 - Tasks and Subtasks
 - Work Packages and Milestones

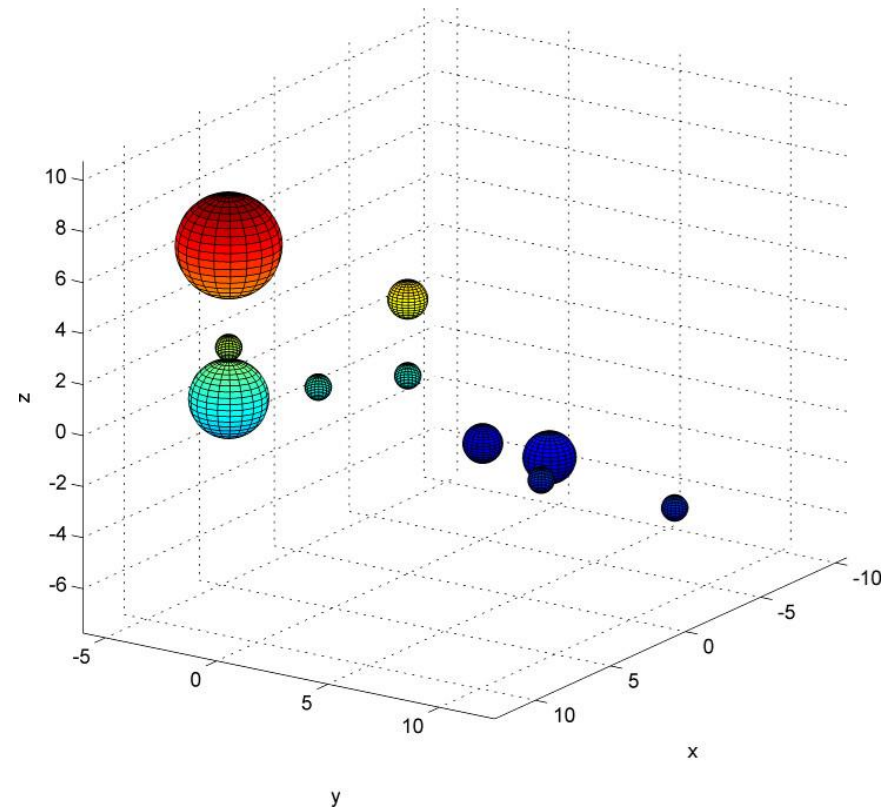
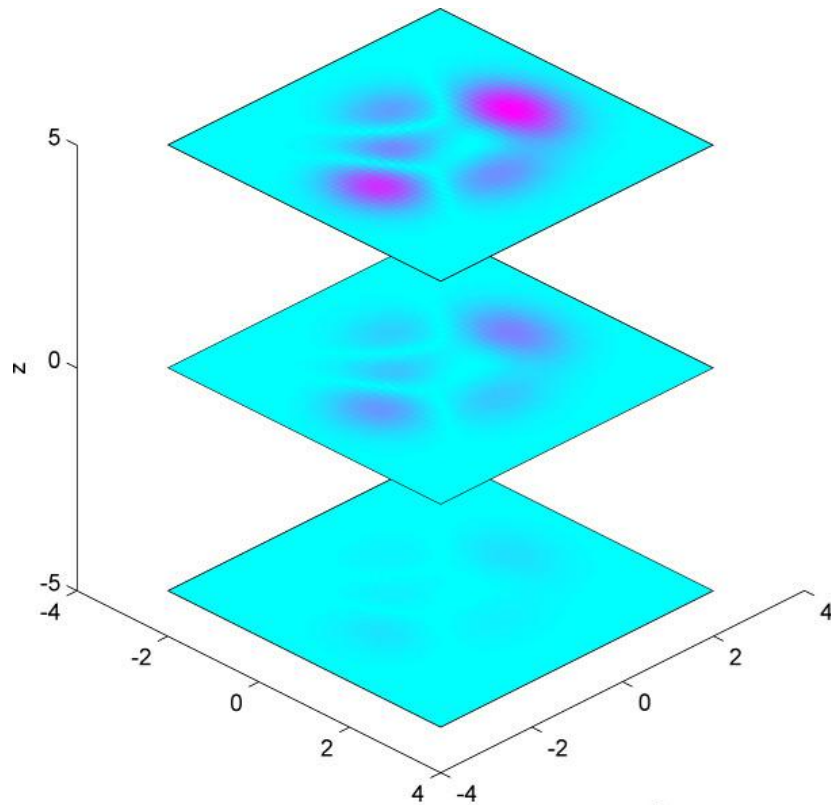
Background and Motivation

- Computer aided medical procedures
 - Accurate position and orientation information in real-time
 - Different system
 - Spatial accuracy unknown



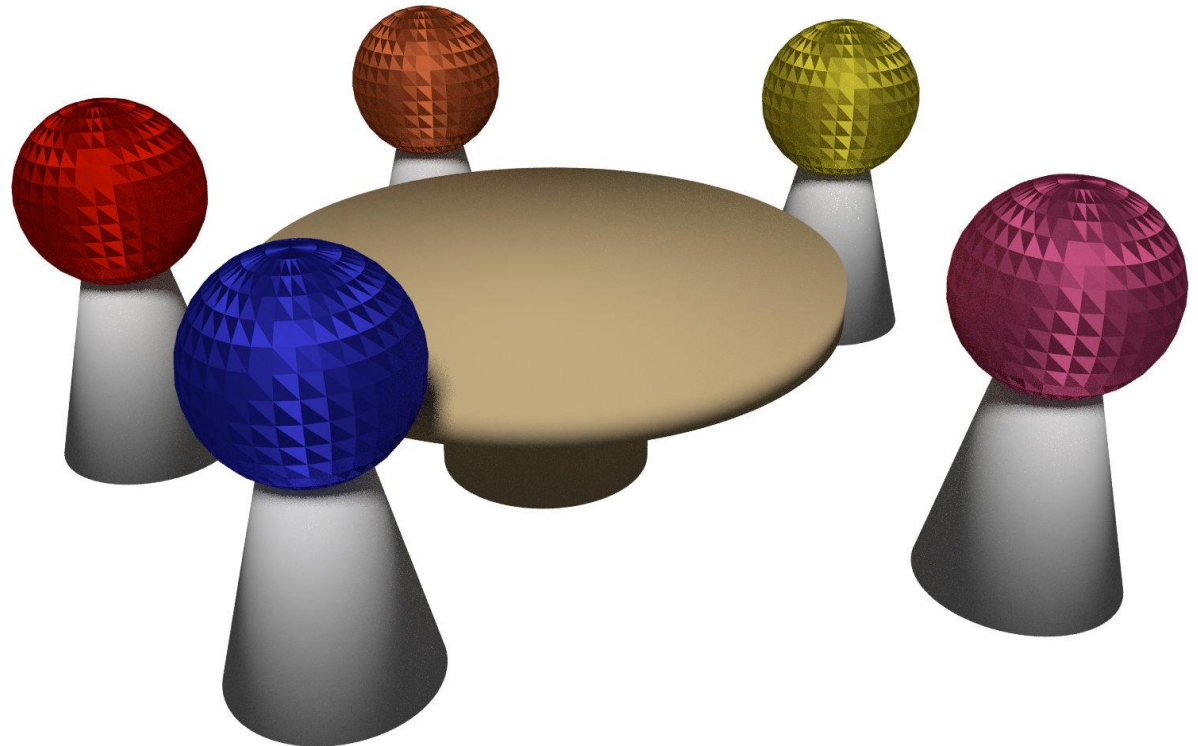
Problem Statement

- Visualizing the volumetric accuracy using an interactive GUI



Stakeholders

- Project partner
 - FRAMOS^[1]
 - IFL^[2]
- Supervisor
 - Benjamin Busam
- Project Manager
 - Stefan Matl



- [1] <https://www.amos.com/> (November 1, 2015)
- [2] <http://campar.in.tum.de/Chair/IFL> (November 1, 2015)

Requirements and Specifications

- Visualization
 - Differentiate tracking error and system accuracy
 - Additional reference points or (medical) devices
 - Offer different visualizations
- GUI
 - Interactive
 - Real-time

Tasks and Subtasks

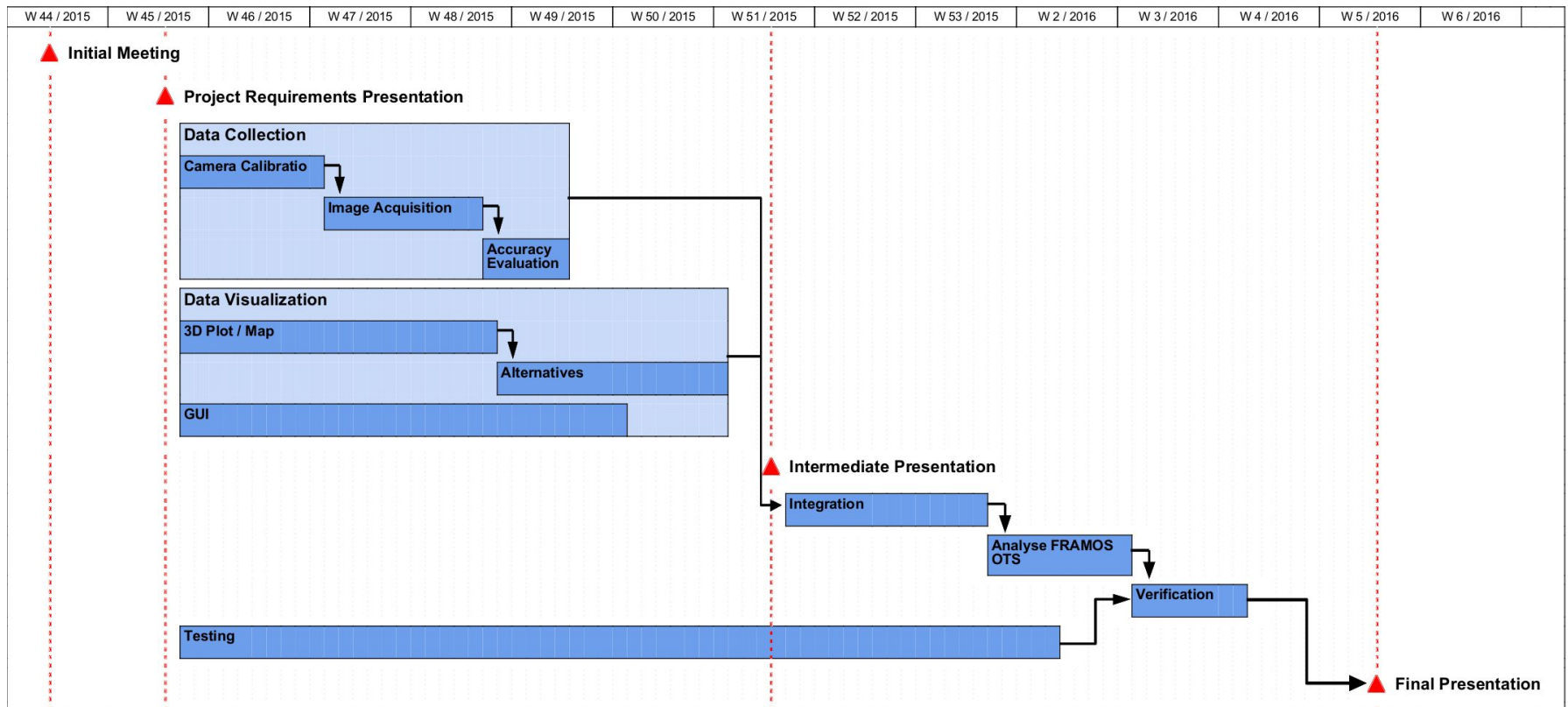
- Camera calibration^[1, 2]
- Collect data with camera
- Visualize data
- Combine visualization with real-time acquisition
- Analyse FRAMOS Optical Tracking System^[3]
- Tests / Verification
- Documentation / Report



- [1] Zhang, Zhengyou. "A flexible new technique for camera calibration." *Pattern Analysis and Machine Intelligence, IEEE Transactions on* 22.11 (2000): 1330-1334.
- [2] Sun, Wei, and Jeremy R. Cooperstock. "Requirements for camera calibration: Must accuracy come with a high price?." *Application of Computer Vision, 2005. WACV/MOTIONS'05 Volume 1. Seventh IEEE Workshops on*. Vol. 1. IEEE, 2005.
- [3] https://www.amos.com/fileadmin/media/pdf/news/2015/FRAMOS_OTS/amos-ots_flyer_engl.pdf (November 1, 2015)

Work Packages and Milestones

- Gantt Chart^[1]



- [1] created with Google Sheets

- Questions
- Comments
- Ideas

