

# Plan for first Year of WP5

S. Rockel, J. Zhang

{rockel, zhang}@informatik.uni-hamburg.de



University of Hamburg  
Faculty of Mathematics, Informatics and Natural Sciences  
Department of Informatics

**Technical Aspects of Multimodal Systems**



December 2, 2011

# Outline

Planned Tasks for WP5

Summary

Discussion



# T5.1

## Robot control SW architecture for evaluation

- ▶ define Abstract Robot Control Architecture (ARCA)
  - ▶ provide interfaces
  - ▶ specify control and information flow between components (UML)
- ▶ proved remote interface to the robot

## T5.2

### Simulation infrastructure

- ▶ provide simulation infrastructure
  - ▶ stage 1:
    - ▶ 3D robot model with models of real world sensors
    - ▶ one room, table, cups, cans
    - ▶ physical model and properties of objects

# T5.3

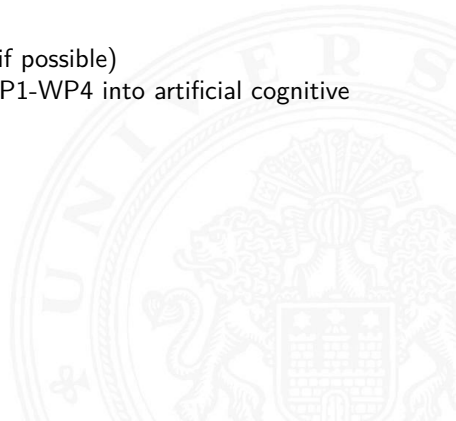
## Sensor data acquisition

- ▶ physical robot
  - ▶ arrange initial experiments and scenarios for WP2 (to gain multi-level symbolic representations from raw sensor data)
- ▶ store acquired data centrally

# T5.4

## Demonstrators

- ▶ Stage 1:
  - ▶ simulated demonstrator
  - ▶ \*partly physical demonstrator (if possible)
  - ▶ integrate achievements from WP1-WP4 into artificial cognitive system (ACS)



# T5.5

## Benchmarking and evaluation

- ▶ Stage 1:
  - ▶ use experiences for reproducing robot activities in essentially identical environments
  - ▶ Demo 1.1: Serve-a-coffee<sup>1</sup>
  - ▶ Demo 1.2: Clear-coffee-mugs-from-table

---

<sup>1</sup>see details in B1.1

# Goals

- ▶ Simulated robot platform
  - ▶ 3D model of PR2
    - ▶ Extension: Kinect, Infrared camera (more?)
    - ▶ Integration of further sensor into simulation
  - ▶ 3D environment restaurant/kitchen
    - ▶ Tables, chairs, objects (static, dynamic)
  - ▶ 3D human models (static, dynamic, random)
- ▶ 2D/3D Navigation (platform, arms)
  - ▶ Collision avoidance
- ▶ Remote interface to the robot



## Goals (cont.)

- ▶ Year one demonstrator 2D/3D Navigation (platform, arms)
  - ▶ collision avoidance
- ▶ Remote interface to the robot
- ▶ Year one demonstrator
- ▶ Abstraction layer for all integrated components
- ▶ Integration onto the real robot
- ▶ Abstraction layer for all integrated components
- ▶ Integration onto the real robot
- ▶ Define Abstract Robot Control Architecture (ARCA) with other project participants
  - ▶ Provide interfaces

# Discussion

- ▶ What is needed by other WP?
  - ▶ Interfaces?
- ▶ Abstraction level of sensory data?
  - ▶ raw data, symbolic data..?



# Thank You!

## Any questions?



# Further Reading

