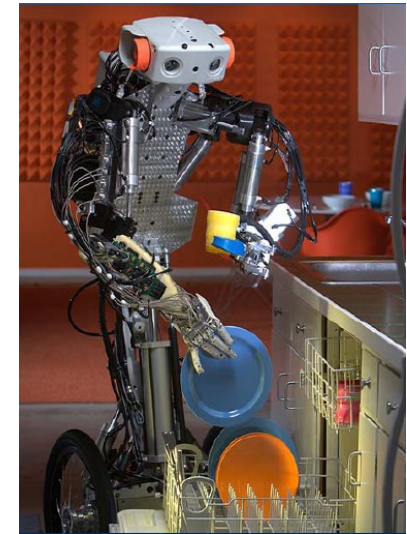
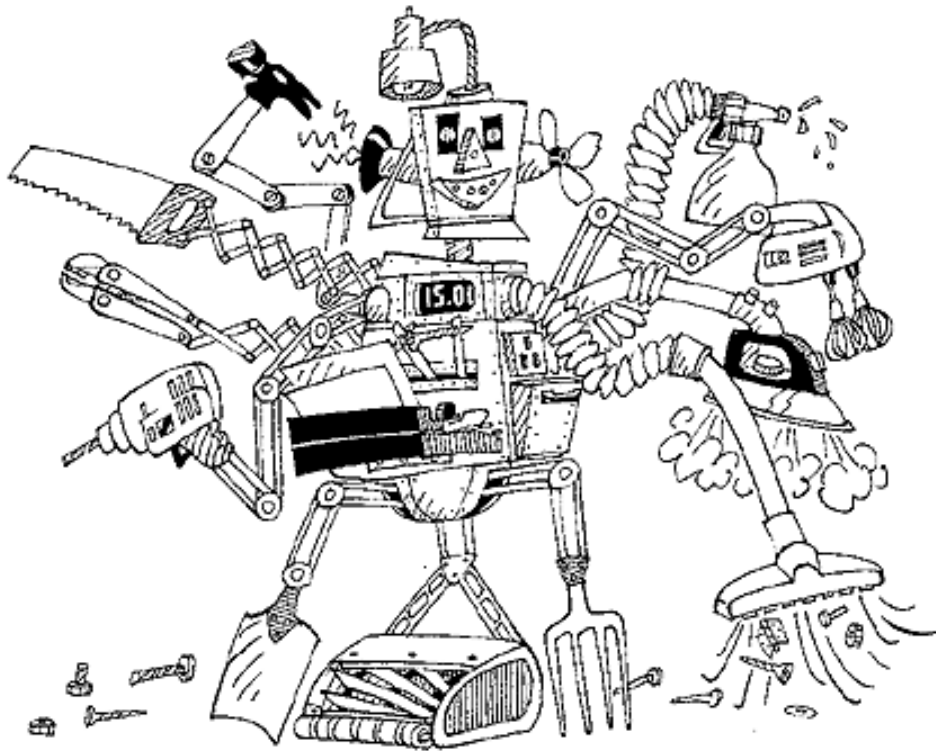


# servicerobotik

Autonome Mobile Serviceroboter



Monty (Anybots.com)



## Investition in Ihre Zukunft

gefördert durch die Europäische Union  
Europäischer Fonds für regionale Entwicklung  
und das Land Baden-Württemberg





# servicerobotik

Autonome Mobile Serviceroboter

## Hochschule Ulm



University of  
Applied Sciences

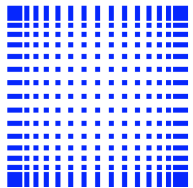
- **Hochschule Ulm**  
University of Applied Sciences  
Prof. Dr. Christian Schlegel



Hochschule  
Ravensburg-Weingarten

University of Applied Sciences

- **Hochschule Ravensburg-Weingarten**  
University of Applied Sciences  
Prof. Dr. Wolfgang Ertel  
Prof. Dr.-Ing. Holger Voos



## hochschule mannheim

- **Hochschule Mannheim**  
University of Applied Sciences  
Prof. Dr.-Ing. Thomas Ihme  
Prof. Dr. Bernhard Wirnitzer



# servicerobotik

Autonome Mobile Serviceroboter

## Service Robotics:

A robot which operates semi or fully autonomously to perform services useful to the well being of humans and equipment

- Automation in unstructured and dynamic environments
- Addresses key issues of future “intelligent” (capable of making decisions) products



Adaptivity  
Robustness

Reliability  
Safety

Everyday setting  
Engineering

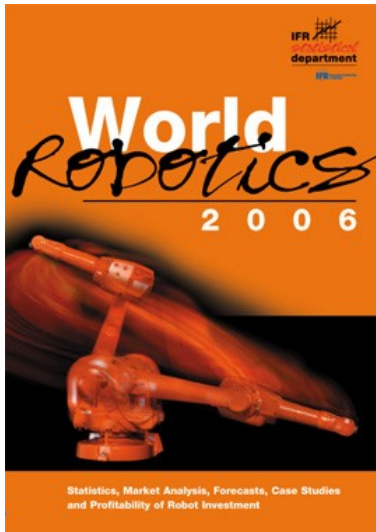
Performance  
...



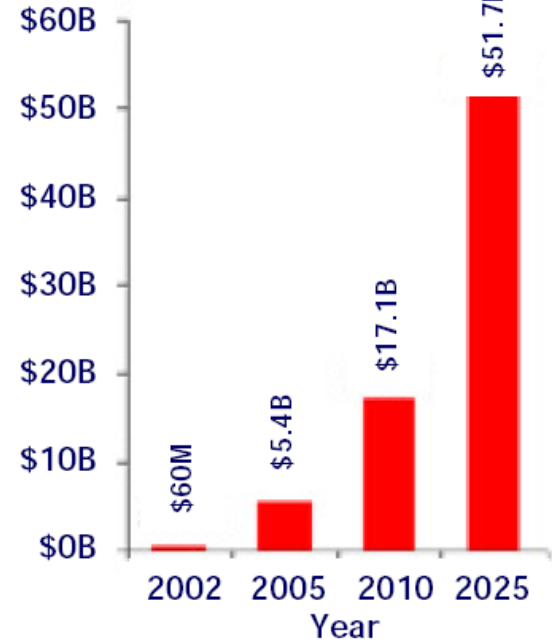


# servicerobotik

Autonome Mobile Serviceroboter



Market Size (Billion \$)



## Personal & Service Robotics Market Growth

Source: UNEC and IFR



### Motivation:

- acting in everyday-life environment is still a great challenge in service robotics
- matured algorithms and solutions exist for subproblems
- a methodology to open a systematic engineering approach for service robotic applications is still missing

### Objective:

- developing a methodology for building service robotic systems
- substantially facilitate development of autonomous mobile service robots

### Approach:

- extend and merge separated techniques under the objective of suitability for daily use



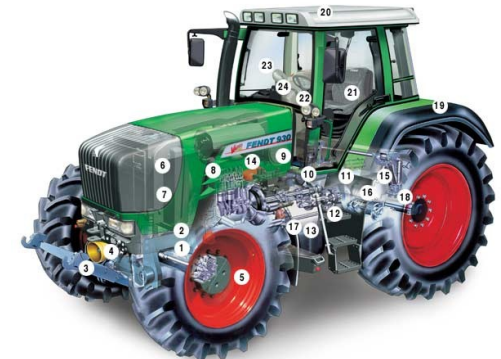
# servicerobotik

Autonome Mobile Serviceroboter

- Adaptive intelligent control  
AG Ertel / Ravensburg-Weingarten
- Verification of safety properties  
AG Voos / Ravensburg-Weingarten
- Software technology  
AG Schlegel / Ulm
- Localization / Mapping  
AG Schlegel / Ulm
- Information-optimized object recognition  
AG Wirnitzer / Mannheim
- Adaptive real-time image processing  
AG Ihme / Mannheim



**OBJECTIVE:**  
Methodology for  
service robots in  
everyday settings  
**DEMONSTRATORS**

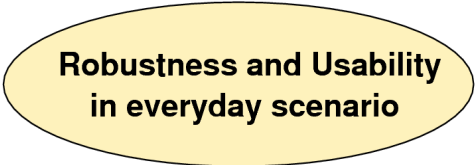




# servicerobotik

Autonome Mobile Serviceroboter

**Benchmark within ZAFH:**



*is achieved by distinguished contributions  
in the following principal topics:*

