



Center for
Human-Machine-Interaction



German Research Center
for Artificial Intelligence

smartFactory^{KL}

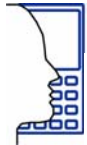
**Cognitive systems for flexible planning and control
of micro assembly processes**

Prof. Dr.-Ing. D. Zuehlke



Organization and EC Project Expertise

Who we are:



Center for
Human-Machine-Interaction

smartFactory^{KL}

Experience in the design of user oriented systems and HMI-Interfaces

First European, multi-vendor research, development and demonstration center for industrial ICT

Our experience:



UNIVERSIDAD
POLITECNICA
DE VALENCIA

Several successful industry related research projects and scientific interchange since many years



Budapest University of Technology and Economics

Driving international research in the area of “Ambient Intelligence” technologies



Cooperative research in the field of digital planning tools for plant design

smartFactory^{KL}
the intelligent factory of the future

Project idea

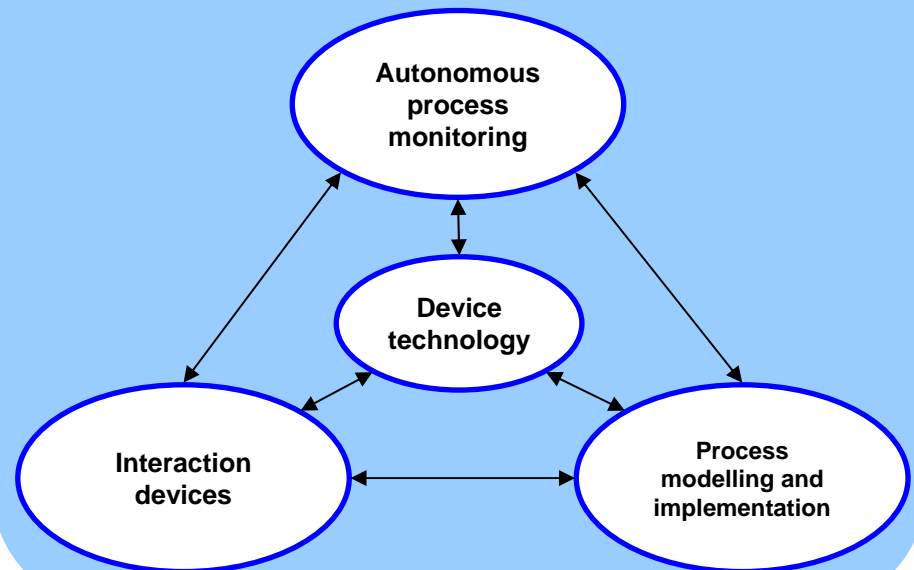
Need for the project:

- increase of process efficiency
 - cognitive systems allow self-optimizing processes
 - automated disturbance handling
- intuitive user interactions → User-friendliness can be improved

Objectives:

- **Autonomous process monitoring**
 - learning control system
 - automated reactions on disturbances
- **Interaction devices**
 - optimized HMI for programming phases
 - new multi-modal interaction devices
- **Process modelling and implementation**
 - increase abstraction level for programming
 - integration of optimization algorithms
- **Device technology**
 - modern sensor concepts
 - device technology to demonstrate concepts

Cognitive process planning and control



Project idea (continued)

Considered FP7 topics:

“...Robots handling, individually or jointly, tangible objects of different shapes and sizes, and operating either fully autonomously...”

„...Robots, sensor networks and other artificial systems, monitoring and controlling material and informational processes...”

„...Intuitive multimodal interfaces and interpersonal communication systems...”

Fact sheet

Project form	CP Strep
Budget	2,3 M€
Duration	36 month
Partners	Up to 9 partners

Partners:

Industry

Adept Technology (USA)
Ehrfeld Mikrotechnik (Ger)
Sysmelec SA (CH)

Research Centers

DFKI (Ger)

Universities

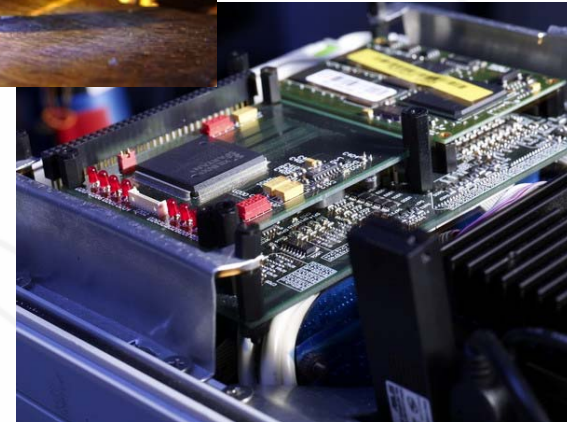
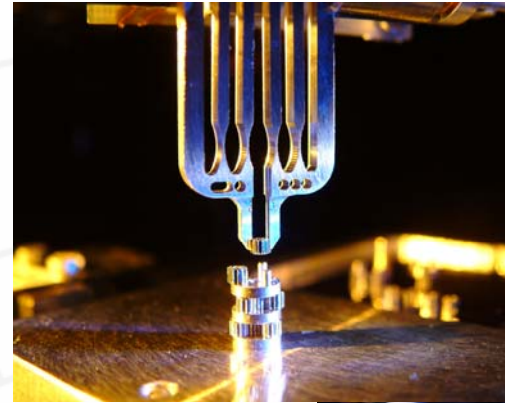
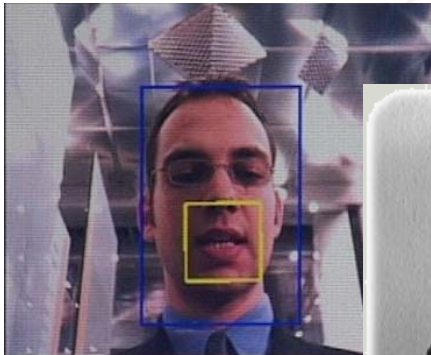
Universidad Politécnica de Valencia
Kaiserslautern University of Technology

Additional Expertise Needed

Additional, further partners with focus on:

- industrial applications,
- process control,
- artificial intelligence,
- micro assembly

are very welcome.



Contact:

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