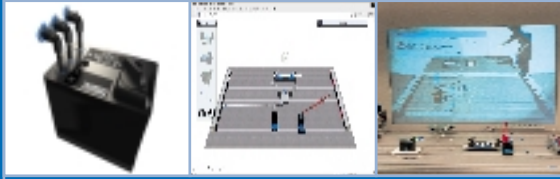


product



Derive develops a mechatronic learning environment where on-site and remote components merge into a cooperative learning process.

4

The envisaged system allows to work together with complex real and virtual mechatronic systems, consisting of parts which may be distributed all over the world.

The learning environment includes a supportive web-database with multimedia learning sequences providing theoretical background information, exercises and help to handle training tasks.

Mechatronic hardware equipment can be connected to the virtual environment with a special-sensor-actor coupling.

Real electro-pneumatic circuits can be directly imported into the virtual world.

The DERIVE learning environment smoothly integrates equipment and supports full hardware in-the-loop functionality.

product

contact

Research Center ARTEC
Work Environment Technology
University of Bremen
Enrique-Schmidt-Str. 7

D - 28359 Bremen

tel +49 421 / 218 4206

fax +49 421 / 218 4449

www.derive.uni-bremen.de

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contact



mixed reality

derive



distributed real and virtual learning environment for mechatronics and tele-service

mechatronic



The mechatronic fitter will adress a challenge in the automation industry. His focus is on the integration of mechanics, electronics and informatics.

The evolution from industrial to information age culminating in networked cross-national enterprises leads to new job requirements in order to satisfy the demands of more complex systems.

1

In their role as multi-skilled technicians the mechatronic fitters assemble and maintain machines and system processes both on site and online. They work both autonomously and in multi-disciplinary teams.

Their skills range from mechanical and electrical assembly, programming and installation of mechatronic systems to their testing, fault finding and optimization. They have the social abilities to coordinate their activities within dynamic, multicultural teams.

mechatronic

training



New trends in technical training are an inherent focus of the DERIVE project.

Modern teaching requires more than a traditional classroom setting. Nowadays learning is not an isolated phase in life. Integration of work and life long learning requires new concepts and tools.

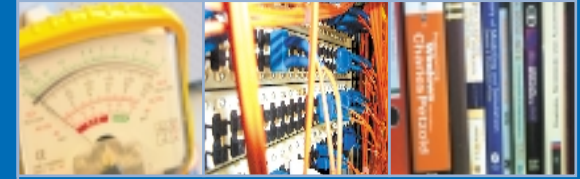
2

Therefore training is not only a matter of assimilating fact knowledge. Social and organisational abilities are key qualifications especially if team work is required.

The DERIVE learning environment is the appropriate tool to realise project orientation in technical training, providing a platform for self-managed and collaborative learning.

training

research



Our main research focus in the DERIVE project is the analysis and development of innovative mixed reality human computer interfaces.

To develop adequate technological and pedagogical concepts for e-learning in future technical training, user needs must be analysed in depth.

3

The requirements of different user groups (students, teachers, employers) are described and consolidated. Acting in an environment, where real world objects and IT - technologies are applied simultaneously, requires new concepts of supporting cooperating local and distributed learning groups.

The scientific challenge is to handle physical as well as virtual presence and awareness without confusing side effects. In DERIVE we evaluate the user-friendliness of the developed software, analyse the established communication and tele-cooperation behaviour and qualify the learning benefit of the system prototype.

research