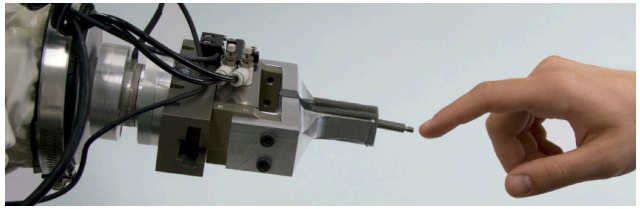
The Project

The European funded ECHORD project “European Clearing House for Open Robotics Development” began in May 2009 with the ambitious goal of bringing together Europe’s robotics manufacturers with the excellent European research institutions. This has been hugely successful! ECHORD now comprises 53 universities and more than 80 industrial partners, coordinated by Prof. Knoll, Technical University of Munich. The project‘s international orientation and its positioning in the existing robotics landscape are emphasized by the participation of the University of Naples Federico II (Prof. Siciliano) and the University of Coimbra in Portugal (Prof. Pires).

Europe has a very strong robot industry and there is significant research potential as well as technological knowledge. There has been a long history of outstanding research and development in both robot manufacturers and research institutes. However, finding common ground between manufacturers and the research community, especially when it comes to defining the future direction of robotics research, has proven difficult in the past. This is one of the recurring themes on both sides, and a new level of cooperation is long overdue. Thus, ECHORD acts as a “clearing house” to streamline successful know-how transfers.

As of 2011-09-22



The Partners

Technische Universität München

Università di Napoli Federico II

Universidade de Coimbra

Participates with the PRISMA Lab partners

Università della Basilicata

Università di Cassino

Seconda Università di Napoli

Università di Roma Tre

Università di Salerno

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SEVENTH FRAMEWORK PROGRAMME

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The Experiments

51 experiments have been selected for funding from 243 submitted proposals. All these joint projects are based on scenarios and research foci relevant to both the robot manufacturers and research institutions. Lasting only 12 and 18 months, these experiments can be of different types: some are geared towards joint enabling technology development, others towards application development and yet other towards feasibility demonstration. Together they demonstrate the wealth of research conducted under the umbrella of ECHORD.

Obviously, there have been and will continue to be many long-term effects and benefits to the industry as a whole (developing new technology, unifying a fragmented community etc.), but also more unexpected successes like the fact that, the ECHORD team managed to actively motivate hardware suppliers to display their offer in the European showcase of robotics, which now displays nearly 300 items.

This full range of industry-academia collaborations and the resulting knowledge transfer will provide European industry as a whole with tangible and measurable results by accelerating the development of new enabling technologies and by the deployment of robotics technology into new applications. With ECHORD as the driving force, the European robotics industry can achieve a significant cutting-edge advantage in an increasingly competitive world market.

The Research Challenge

The range of research topics and subjects in the field of robotics is virtually unlimited. Thus, ECHORD has defined a clear thematic orientation which is reflected in selected ***scenarios***. Three scenarios have been identified, which are both scientifically challenging and commercially relevant. They consist of challenges, which robotics experts can easily understand and use as a basis for their own research. The scenarios, which build on each other, are:

- human-robot co-worker
- hyper-flexible manufacturing cells
- cognitive factory

Within these scenarios, different ***research foci*** have been identified. They combine mechanical design and controller technology developed by manufacturers with the research community's expertise in sensing, cognition, and behaviour control. The research foci are:

- human-robot interfacing & safety
- robot hands & complex manipulation
- mobile manipulators & cooperation
- networked robots

The Structured Dialogue

Structured dialogue refers to dialogue practices developed in order to facilitate and maximize efficiency in dialogues focused on problem definition and action tasks toward problem resolution. For ECHORD it means achieving improved industry-academia cooperation, finding out what industry really needs, increased knowledge transfer and knowledge of future trends in robotics. This highly valuable information is and will be obtained via a diverse range of information gathering techniques, such as target group interviews, Delphi studies, conferences, workshops, extensive literature research, and visits with experiment partners as well as industry and academic representatives who are not working within ECHORD. This systematic bidirectional exchange of views and opinions about the trends, needs and technology developments has already lead to important insights.

The unique, never before tried structure of ECHORD can be seen as a basis for further EU projects – tapping untold potential and application possibilities. The impact that the project has already had is immense and will continue to shape the robotics community in the future. We have gathered experience, developed structures and systems and best practice standards for a novel type of project that can be utilized for a myriad of areas.

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