Cognitive Workflow Capturing and Rendering with On-Body Sensor Networks

Fact Sheet

Project Information

**Cognito**

Grant agreement ID: 248290

**Closed project**

**Funded under**
FP7-ICT

**Overall budget**
€ 4 232 648

**EU contribution**
€ 3 232 177

**Coordinated by**
DEUTSCHES FORSCHUNGSGEMEINSCHAFT FUR KUNSTLICHE INTELLIGENZ GMBH

Germany

Start date
1 January 2010

End date
31 December 2012

Project description

Cognitive Systems and Robotics
System design to assist and interact with individual human activity, particularly that concerns with task solving and hand manipulation of objects and tools
The automatic capture, recognition and rendering of human sensory-motor activities represent essential technologies in many diverse applications. Current capture systems focus primarily on capturing raw motion data that is organised as a single cinematic sequence, with little or no reference to the underlying task activity or
workflow patterns exhibited by the human subject.

The aim of the COGNITO project is to develop novel techniques that will allow cognitive workflow patterns to be analysed, learnt, recorded and subsequently rendered in a user-adaptive manner. COGNITO will map and closely couple both the afferent and efferent channels of the human subject, enabling activity data to be linked directly to workflow patterns and task completion. The focus will be on tasks involving the hand manipulation of objects and tools due to their importance in many industrial applications.

The automatic capture, recognition and rendering of human sensory-motor activities represent essential technologies in many diverse applications, ranging from 3D virtual manuals through to training simulators and novel computer games. Although capture systems already exist on the market, they focus primarily on capturing raw motion data, matched to a coarse model of the human body. Moreover, the recorded data is organised as a single cinematic sequence, with little or no reference to the underlying task activity or workflow patterns exhibited by the human subject. The result is data that is difficult to use in all but the most straightforward of applications, requiring extensive editing and user manipulation, especially when cognitive understanding of human action is a key concern, such as in virtual manuals or training simulators. The aim of the COGNITO project is to address these issues by advancing both the scope and the capability of human activity capture, recognition and rendering. Specifically, we propose to develop novel techniques that will allow cognitive workflow patterns to be analysed, learnt, recorded and subsequently rendered in a user-adaptive manner. Our concern will be to map and closely couple both the afferent and efferent channels of the human subject, enabling activity data to be linked directly to workflow patterns and task completion. We will focus particularly on tasks involving the hand manipulation of objects and tools due to their importance in many industrial applications.

**Fields of science**

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**Programme(s)**

**Topic(s)**

**Call for proposal**

FP7-ICT-2009-4
Funding Scheme

Coordinator Contact

Didier STRICKER (Prof.Dr.)

Coordinator

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<th>Activity type</th>
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<td>Trippstadter Strasse 122</td>
<td>Research Organisations</td>
<td>€ 903 988</td>
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<td>67663 Kaiserslautern</td>
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### TRIVISIO PROTOTYPING GMBH

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<td>€ 391 960</td>
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