

DFG Priority Program 1183

Organic Computing

program/steering committee:

Christian Müller-Schloer
Hartmut Schmeck (Coordinator)
Theo Ungerer

4th Colloquium

Berlin-Adlershof
February 15/16, 2007

kindly supported by the German Aerospace Center

This colloquium:

- Kindly supported by the DLR
 - special thanks to Marius van der Meer
- Major topic: **Cross-section topics of Organic Computing:**
- In particular:
 - Today: **Self-organisation and Emergence**
 - Tomorrow:
Working groups on
 - Applications
 - Self-organization and emergence
 - Brief status reports on all working groups
 - Architectures
 - Applications
 - Bio-inspired methods
 - Design methods
 - Self-organization and emergence

Events within SPP 1183 (since last colloquium)

- Mini workshop:
Self-Coordination in Large, Dynamically Changing Distributed Systems
Ort: Universität Paderborn, 31.1. -1.2.07 (Mittag bis Mittag)
- Deadline for second phase of SPP: Dec.20, 2007
→ 25 proposals, reviewer committee meets March 30, 2007

Events related to Organic Computing (since last colloquium)

- **SOAS 2006: International Conference on Self-Organization and Autonomous Systems in Computing and Communications**, Erfurt (Germany), September 18 - 20, 2006
- **OCGI 2006: Workshop “Organic Computing – Status and Outlook”**, Dresden, Oct. 5, 2006 (part of GI Annual Conference 2006)
- **ISoLA 2006: Thematic Session on Organic Computing** at the Int. Symp. on Leveraging Applications of Formal Methods, Verification and Validation, Paphos (Cyprus), November 15-19, 2006
- **ARCS'07: Architecture of Computing Systems**, Zurich (Switzerland), March 12-15, 2007

This colloquium:

Organisational remarks:

- **Settlement of travel expenses:**
 - Fill in travel expense forms
 - Attach all relevant tickets and bills (originals, no copies)
 - Send to Institut AIFB, Sekretariat LS1, Universität Karlsruhe
(use preaddressed envelope)
- **Lunch:** outside the lecture room
- Suggestion for **Dinner:** no organised event,
open for self-organisation

Detailed Program:

Thursday

- 09.00 **Welcome / Opening** *SPP-Coordinator / DLR-Representative*
- 09.10 **Introduction Self-Organization and Emergence**
Christian Müller-Schloer (Uni Hannover)
- 09.15 **Emergence in Organic Computing Systems: A Controversial Issue**
Bernhard Sick (Uni Passau)
- 09.45 **Self-Organization from the Perspective of a Physicist**
Udo Erdmann (Helmholtz Gemeinschaft)
- 10.30 Coffee Break
- 11.00 **Self-Organization and Emergence in Multi-Agent Systems**
Giovanna Di Marzo Serugendo (Birkbeck College, London)
- 11.45 **General Principles for Engineering Self-Organizing Applications for the Real World** *Sven Brueckner (NewVectors, LLC, Ann Arbor/USA)*
- 12.30 Lunch Break
- 13.30 **Self-Management and Self-Organization: Differences and Similarities**
Gero Mühl (TU Berlin)
- 14.15 **Some Ideas on Self-Organization from a Technical Perspective**
Christian Müller-Schloer (Uni Hannover)
- 15.00 Coffee Break

Detailed Program:

Thursday

- 15.30 **Generating of 3D-Worlds using High-Resolution Sensors**
Anko Börner (DLR, Information Processing in Optical Systems / Optical Information Systems)
- 16.00 **Presentation of the Institute of Planetary Research**
Tilman Spohn (DLR, Director of the Institute of Planetary Research)
- 16:15 **Mars – The Red Planet in 3D Views**
Ulrich Köhler (DLR, Inst. of Planetary Research)
- 17.00 h End of Session

Detailed Program

Friday, February 16, 2007

- 09.00 Meetings of **cross-section working groups**
- 10.30 Coffee Break
- 11.00 **Status Reports** from the Working Groups
- 12.30 Lunch Break
- 13:30 **Information about Some Aspects of the Next Federal Research Program in Information and Communication Technologies (ICT2020)**
and Discussion of Perspectives for OC
DLR-Representative, SPP-Coordinator
- 14:15 **Sensor Networks for Traffic Situation Analysis**
Ralf Reulke (DLR Institute of Transportation Systems / Humboldt-Uni Berlin)
- 14:45 **Traffic Data Analysis and Simulation**
Reinhardt Kühne (DLR, Director of the Institute of Transportation Systems)
- 15:45 End of Meeting

Organisational remarks

- Slides of all the talks will be available on the SPP web site.
- Provide input for our website on literature on organic computing.
- Thanks again to all of you for active contributions in talks and discussions.
- Thanks again to the DLR (and in particular to Marius van der Meer) for the perfect environment for this colloquium and for the impressive presentations on research at DLR!
- Have a good trip back (after the final presentations).