

# HAEC News

Collaborative Research Center, HAEC „Highly Adaptive Energy-Efficient Computing“ (SFB 912)

## News

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- Dates/Events
- Flexible childcare project
- Welcome our new colleagues
- Publication

### Impressum:

CRC HAEC  
TU Dresden  
CRC 912  
01062 Dresden

Tel: +49 351 463-41023  
Fax: +49 351 463-41099

[sandra.helms@ifn.et.tu-dresden.de](mailto:sandra.helms@ifn.et.tu-dresden.de)

## WELCOME TO OUR FIRST EDITION

*Dear HAEC team,*

It is my pleasure to introduce you to our first edition of the HAEC newsletter which we intend to publish quarterly. The information provided will summarize our research activities, targets and successes, to help us all understand where we are at. In each edition we will introduce one project in detail. We will also include a selection of relevant events coming up and review past conferences where HAEC was involved.

You can contribute to HAEC News by submitting your stories to the admin team which we will introduce in this edition. So please keep an eye out for anything special that might be of interest to all of us.

I would like to use this newsletter to keep us all abreast of the projects within HAEC which should help us streamline the main objectives of the CRC.

I appreciate your time to read the news and thank you in advance for your future contributions.

With best wishes and  
Happy HAECing!

*Gerhard P. Fettweis*

*CRC SFB 912 Coordinator*

# HAEC at the 2<sup>nd</sup> IEEE Technology Time

Dresden hosted the second IEEE Technology Time Machine (TTM) from 23 to 25 May 2012 and HAEC invested in a 30 sqm exhibition booth, introducing the CRC HAEC in general, the 60 GHz short-range transmission demonstrator, the ATLAS chip as well as the energy-aware resource management. Despite the hard work of setting up the demonstrations, the presenting teams enjoyed being able to showcase their research results to the audience. Speakers as well as TTM participants showed a keen interest in the displays and thoroughly studied the posters. Most were particularly curious about HAEC's ambition in general.

The TTM attracted over 200 internationally renowned industry leaders and scientists from over 30 countries. A crowd of engineers and visionaries proved to be the ideal audience for our exhibition. We would like to thank all staff manning the booth during the TTM for their effort setting up the demonstrations as well as for professionally presenting HAEC. We do believe that it was very worthwhile participating at the TTM and support the ambition to welcome the symposium to Dresden again in 2015.



Source: Helene Fung, IEEE



Source: Mark Vasquez, IEEE

Dates for your diary	HAEC Seminar 2012	
<ul style="list-style-type: none"> <li>• 20. - 21.06.2012 <i>HAEC Research Festival</i></li> <li>• 12. - 13.06.12 <i>Nanofair 2012 Dresden</i></li> <li>• 27.06.2012 <i>7<sup>th</sup> Silicon Saxony Day Dresden</i></li> <li>• 05.- 07.12.2012 <i>SEMICON Japan</i></li> </ul>	<ul style="list-style-type: none"> <li>• 06.06.2012 B04 – Markus Hähnel</li> <li>• 04.07.2012 A03 – N.N.</li> <li>• 01.08.2012 A08 – N.N.</li> <li>• 05.09.2012 B06 – Möbius / Rybina</li> </ul>	<ul style="list-style-type: none"> <li>• 10.10.2012 B02 - Eldora</li> <li>• 07.11.2012 A07 - Nieweglowski / Schöninger</li> <li>• 12.12.2012 B03 Daum</li> </ul>
		<p>Time: 09:00-10:30 Room: BAR II 63a</p>

## Flexible Childcare Project

Childcare is currently one of the most discussed subjects in Dresden. The city of Dresden cannot, at the moment, guarantee childcare for every child under the age of three. Therefore, we have looked into options to offer *flexible childcare* for HAEC employees and to open our own *day nursery* for five kids under three years of age. For the day nursery we would need to rent an apartment and employ one or two nannies. Together with the company *eq-Wirtschaftsberatung für Familien-management* we have worked out a suitable concept for us which we had submitted to the DFG for consideration. The DFG has approved our project 'Flexible Childcare' which we can support financially

through the special fund for Gender Equality Measures.



Source: www.kinderhotels.com

However, we will not be able to finance the rent for the apartment from this fund. This issue has not yet been resolved but we do hope to find a workable solution soon.

We have been full of energy to drive the project 'Flexible Childcare' forward and prepared a draft contract with *eq*. This draft was discussed with Dr. Zeimer (Head of

Administration), who expressed his concern about the costs of the project. However, we welcomed the opportunity to discuss the matter with him as well as the possibilities such as co-financing the rent for the day nursery with the university. In conclusion, there are several hurdles to take and issues to be resolved but we do hope that there will be a favorable outcome for all concerned in the end.

## HAEC New Additions

Project	Name	Start
A01	Khafaji, Mohammed	June 2012
A02	Hensel, Hermann	July 2012
A03	Chong, Zhijiat	January 2012
A04	Ilsche, Thomas	April 2012
A05	Schiselski, Mario	March 2012
A06	Claus, Martin	January 2012
A06	Rosenbaum, Tommy	February 2012
A08	Gerbracht, Sabrina	March 2012
B01	Büger, Christoff	February 2012
Z01	Helms, Sandra	April 2012
Z01	Bley, Sandra	March 2012

*We welcome all new colleagues to HAEC and wish you every success with your work and research.*

## Publications

### Subproject A02:

S. Krone, and G. Fettweis, **Capacity of Communications Channels with 1-Bit Quantization and Oversampling at the Receiver**, *Proceedings of the IEEE Sarnoff Symposium (Sarnoff'12), Newark, USA*

S. Krone, L. Landau, F. Guderian, B. Almeroth, H. Hensel, M. Laabs, M. Jennings, D. Plettemeier and G. Fettweis, **60 GHz Short-Range Transmission: A Multi-Gibt/s Wireless Data Link**, *Design Automation and Test in Europe (DATE'12), Dresden, Germany*

S. Krone, L. Landau, F. Guderian, B. Almeroth, H. Hensel, M. Laabs, M. Jennings, D. Plettemeier and G. Fettweis, **60 GHz Short-Range Transmission: A Multi-Gibt/s Wireless Data Link**, *ITG Workshop on Smart Antennas (WSA'12), Dresden, Germany*

N. Ul Hassan, M. Lentmaier, G. Fettweis, **Comparison of LDPC Block and LDPC Convolutional Codes Based on their Decoding Latency**, *7<sup>th</sup> International Symposium on Turbo Codes & Related Topics (ISTC 2012), Gotheburg, Sweden*

### Subproject A06:

M. Schröter, T. Rosenbaum, G. Wedel, J. Krause, A. Pawlak, **TCAD-based SiGe HBT Technology Roadmap**

**Generation**, *ITRS Spring Meeting, Nordwijk, Netherlands*

### Subproject B01:

Ch. Piechnick, S. Richly, S. Götz, C. Wilke and U. Aßmann, **Using Role-Based Composition to support Unanticipated, Dynamic Adaption-Smart Application Grids**, *Fourth International Conference on Adaptive and Self-Adaptive Systems and Applications (ADAPTIVE), Nice, France*

S. Götz, C. Wilke, S. Richly and U. Aßmann, **Approximating Quality Contracts for Energy Auto-Tuning Software**, *First International Workshop on Green and Sustainable Software (GREENS 2012), Zurich, Switzerland*

S. Karol, Ch. Bürger and U. Aßmann, **Towards Well-formed Fragment Composition with Reference Attribute Grammars**, *15th International ACM SIGSOFT Symposium on Component Based Software Engineering (CBSE), Bertinoro, Italy*

### Subproject B02:

A. Ecke, A.-Y. Turhan, **Optimizations for the role-depth bounded least common subsumer in EL+**, *Experiences and Directions Workshop (OWLED 2012), Heraklion, Greece*

A. Ecke, A.-Y. Turhan, **Role-depth bounded least common subsumers for EL+ and ELI**, *Description Logics Workshop (DL'12), Rome, Italy*

St. Borgwardt, F. Distel, R. Peñaloza, **How fuzzy is my fuzzy description logic?**, *International Joint Conference on Automated Reasoning (IJCAR'12), Manchester, UK*

St. Borgwardt, R. Peñaloza, **Undecidability of fuzzy description logics**, *International Conference on Principles of Knowledge Representation and Reasoning (KR 2012), Rome, Italy*

St. Borgwardt, F. Distel, R. Peñaloza, **Gödel negation makes unwitnessed consistency crisp**, *International Workshop on description logics (DL'12), Rome, Italy*

St. Borgwardt, R. Peñaloza, **Non Gödel negation makes unwitnessed consistency undecidable**, *International Workshop on description logics (DL'12), Rome, Italy*

A.-Y. Turhan, **Optimizations for the role-depth bounded least common subsumer in EL+**, *Experiences and Directions Workshop (OWLED 2012), Heraklion, Greece*

A.-Y. Turhan, **Role-depth bounded least common subsumers for EL+ and ELI**, *Description Logics Workshop (DL'12), Rome, Italy*

## Publications

### Subproject B02:

St. Borgwardt, **How fuzzy is my fuzzy description logic**, *International Joint Conference on Automated Reasoning (IJCAR'12), Manchester, UK*

### Subproject B03:

P. Zuliani, Ch. Baier, E. Clarke, **Rare-event verification for stochastic hybrid systems**, *15<sup>th</sup> International conference on hybrid systems: Computation and Control, Beijing, China*

Ch. Baier, M. Daum, B. Engel, H. Härtig, J. Klein, S. Klüppelholz, St. Märcker, H. Tews, M. Völp, **Waiting for locks: How long does it**

**usually take?**, *17<sup>th</sup> International Workshop on Formal methods for industrial critical systems, Paris, France*  
Ch. Baier, T. Brazdil, M. Größer, A. Kucera, **Stochastic game logic**, *Acta Informatica, to appear in 2012*

### Subproject B04:

M. Hähnel, B. Döbel, M. Roitzsch, M. Völp, **Towards Characterizing Decoding Complexity as Energy-Utility Functions**, *Design Automation and Test in Europe (DATE'12), Dresden, Germany*

M. Hähnel, **Towards Energy/Utility**, *Diploma Thesis, Chair for Operating*

*Systems, TU Dresden, Germany*

M. Hähnel, B. Döbel, M. Völp, H. Härtig, **Measuring energy consumption for short code paths using RAPL**, *Greenmetrics 2012, London, UK*

### Subproject B05:

T. Kissinger, B. Schlegel, D. Habich, W. Lehner, **KISS-Tree: Smart Latch-Free in-Memory indexing on modern architectures**, *DaMoN 2012, Scottsdale, Arizona, USA*

## Here to help – the HAEC Admin Team:

### **Program Manager**

Dr. Nicolle Seifert  
Tel.: +49 351 463-41042  
[nicolle.seifert@ifn.et.tu-dresden.de](mailto:nicolle.seifert@ifn.et.tu-dresden.de)

### **Secretary**

Sandra Helms  
Tel.: +49 351 463-41023  
Fax: +49 351 463-41099  
[sandra.helm@ifn.et.tu-dresden.de](mailto:sandra.helm@ifn.et.tu-dresden.de)

### **Events/General Support**

Sandra Bley  
Tel.: +49 351 463-41079  
[sandra.bley@ifn.et.tu-dresden.de](mailto:sandra.bley@ifn.et.tu-dresden.de)