



## PROGRAMME CERES Open Day 2012, November 7

**08.30 - 09.00 Registration and Coffee**

**09.00 - 09.30 CERES - An International and Industry-connected Research Centre**

*Bertil Svensson*, programme director of CERES, describes how CERES has developed to an internationally well-known research centre for industrially motivated research, and presents some current initiatives to extend this even further.

**09.30 - 12.00 Young researchers presenting:**

09.30 - 09.55 *Hoai Hoang Bengtsson*: Parallelization of AESA Signal Processing using DOL/BIP

09.55 - 10.20 *Anita Pinheiro Sant'Anna*: Acumen: a DSL for modeling and simulating hybrid systems

10.20 - 10.45 Coffee

10.45 - 11.10 *Jan Duracz*: Bringing together simulation and verification of hybrid systems

11.10 - 11.35 *Kristina Kunert*: How can we achieve reliable and energy-efficient real-time communication?

11.35 - 12.00 *Zain-ul-Abdin*: Programming of Massively Parallel Processor Arrays: Experiences & Opportunities

**12.00 - 13.00 Lunch** at Restaurant Spiro to continue the discussions with colleagues and partners.

**13.00 - 14.00 What's going on?**

During this Poster Session you'll have a nice opportunity to look at, listen to short presentations and discuss research activities in and around CERES.

**14.00 - 15.15 Safety-critical applications over off-the-shelf wireless communication technologies**

*Hans-Peter Schwefel*, is Scientific Director at FTW Forschungszentrum Telekommunikation Wien, Austria.

FTW is a nationally leading and internationally acclaimed center for research and development of technologies for future communication systems. FTW was established in 1998 for the purpose of carrying out Research and Development together with partners from academia and industry.

**15.15 - 15.45 In the near future**

In the early 2013 Halmstad University will start the Embedded and Intelligent Systems Industrial Graduate School, we have some project ideas and other issues that we want to inform you about and of course have your views on.

**15.45 - 16.30 Heterogeneity, the Glimmer of Hope in Times of Dark Silicon**

*Tomas Nordström*, associate professor Halmstad University

Up until the early 2000s computers experienced an enormous performance increase mainly due to the steady increase in clock rates. In the middle of the 2000s a number of technology issues like heat dissipation and signal propagation delay, resulted in a paradigm shift where a duplication of processor cores on the same chip was introduced, so called multicore architectures.

However, we are now approaching the point where the scaling of transistor dimensions, together with limits on the maximum total power available to a chip, result in areas of a chip needing to be turned off, i.e. “going dark” or being “dark silicon”, during significant parts of the running of an application.

In order to efficiently use the hardware in times of dark silicon, we suggest that each core needs specialization, leading to a heterogeneous architecture. In this presentation I will discuss various ways of introducing heterogeneity and present a new taxonomy of the heterogeneity level of current and future manycore architectures.