2ND WORKSHOP ON MIXED-CRITICALITY INTEGRATION

This workshop was organized by MultiPARTES, DREAMS, PROXIMA, CONTREX and parMERASA projects

After a successful 2013 edition, the HiPEAC 2014 conference in Vienna hosted the second edition of the workshop on mixed-criticality integration entitled "2nd Workshop on Integration of Mixed-criticality Subsystems on Multi-core and Manycore Processors". The technical program covered two days. The first day was devoted to ongoing projects, which presented their main results, with a focus on their impact on the future design of MCS; the second day was devoted to presenting the goals, objectives and approaches of recently accepted projects. Overall, the audience enjoyed a good balance between results from currently running projects and new challenges to be addressed by just-started projects.

(From left to right) Salva Trujillo (IK4-IKERLAN, MultiPARTES coordinator), Kim Grüttner (OFFIS, CONTREX coordinator), Francisco Cazorla (BSC, PROXIMA coordinator) and Roman Obermaisser (Univ. Siegen, DREAMS coordinator) during a break.

An excellent representation of the European research projects in the field, under both the FP7 and Artemis programs, was present at the workshop: RECOMP, parMERASA, T-CREST, PROARTIS, MultiPARTES, CERTAINTY, CRYSTAL, PROXIMA, CONTREX, DREAMS and EMC[2]. There were talks focusing on the following topics: Multi-Processor Systems-on-a-Chip (MPSoCs) for mixed-criticality applications, hypervisors and operating systems for MPSoCs, hard real-time guarantees and certification aspects, model-driven engineering tools for effort reduction, applications in automotive, avionics, railway, energy and industrial control and existing future research directions.

Both day's sessions ended with very fruitful panel discussions with recognized experts in the field, moderated by Salva Trujillo (IK4-IKERLAN). The first panel was held on the challenges of the road to certification of mixed-criticality systems with panelists: Roman Obermaisser (University of Siegen), Michael Paulitsch (Airbus Group), Rafael Zalman (Infineon), Jon Perez (IK4-IKERLAN), Christian El Salloum (AVL) and Alfons Crespo (Polytechnic University of Valencia). The second panel was on many-core mixed-criticality systems with panelists: Francisco J. Cazorla (BSC), Alan Burns (University of York), Mathieu Patte (Astrium) and Jaume Abella (BSC).

Almost 80 people from at least 16 countries – representing Europe and Asia – attended the workshop.

The agenda and the workshop material are available at https://alfresco.dit.upm.es/multipartes/eventsInfo/HiPEAC2014.html. A new edition is planned in 2015.

More pictures from the event are available via https://twitter.com/FP7MultiPARTES

AUTOMATIC PARALLELIZATION WITH PARALLWARE BY APPENTRA

Addressing the productivity gap with Parallware, the new source-to-source parallelizing compiler by Appentra.

Appentra (www.appentra.com) has just released a beta version of Parallware, a new source-to-source parallelizing compiler for compute-intensive simulation programs. Parallware provides a powerful and modern solution to the great challenge of automatic parallelization of sequential programs written in the C programming language. The auto-generated parallel source code is C code annotated with OpenMP compiler pragmas. The target business sectors are disciplines in

Computational Science and Engineering (CSE). Appentra is now focusing on Computational Electromagnetics (CEM), which is important to the design and modeling of antenna, radar, satellite and other communication systems, nanophotonic devices and high-speed silicon electronics, medical imaging and cell-phone antenna design, among other applications.

In collaboration with the Group of Antennas and Radar of the University of Vigo (com.uvigo.es), Parallware has achieved a key milestone: the auto-parallelization of a real-world electromagnetic simulation program based on the method of moments (MoM). The sequential MoM program consists of more that 2000 source lines of code; it also performs irregular compu-