

Goals

1. Build a commonly used simulation platform, to share/reuse/compare ideas
2. Get industry to participate to platform (trying academics' ideas, contributing)
3. Research modeling approaches adequate for multi/many-cores, DSE,...

HiPEAC1

Simulation Platform

- What we did (UNISIM):
 - UNISIM platform built on top of industry standard SystemC
 - Focused on reusing, sharing & comparison
 - Standardized interfaces:
 - Micro-architecture (core/memory, interconnect,...)
 - Functional simulators, services,...
 - Build services:
 - Power/Cost (CACTI), debugging, full-system
 - Follow the industry design flow:
 - TLM, TTLM, CLM (hybrid in progress)
 - Build open full-system capability (booting Linux)
 - Build up library (PPC405/755, ARM9, CMP, CellSim,...)
 - Link up with companies (ARM, NXP, ST)
 - Design-Space Exploration (in progress)

Critical Analysis

- **What we did right:**
 - Services
 - Standardizing interfaces (services, micro-architecture,...)
 - Aiming at a rich library
 - Full-System
 - Starting research activities (DSE)
- **What we did wrong:**
 - Excessive focus on environment rather than simulators
 - Insufficient focus on speed (multi-cores), among other capabilities
 - Possibly excessive focus on cycle-level (not sure)

What we need to focus on

- Braga focus group recommendations:
 - **Simulation speed**
 - Sampling, FPGA, statistical/analytical modeling,...
 - **Automatic DSE**
 - **Heterogeneous architectures**
 - **Impact of technology**
 - **Complex apps & O/S**
 - **Industry standards & interoperability**

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Questions

1. What, do you think, should be our next major orientations/actions for a common simulation platform ?
2. How do we get organized to achieve them ?
3. Where will the HiPEAC2 engineer will be hosted ?