

EUINCOOP Workshop

HiPEAC Computing Systems Week
24 April 2012

PlanetHPC

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Support action under Objective "Computing Systems" of Challenge 3 "Components and Systems" of the ICT Programme of the European Commission.

Objective: Create roadmap to establish HPC research priorities for remaining FP7 and Horizon 2020.

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Mass market
products

Industry and business
applications and processes

High-end users:
research

Embedded System

Exascale

HiPEAC



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PRACE



EESI



Report

Main activity in last 9 months has been preparation of the report: “A Strategy for Research and Innovation through HPC”.



Key findings:

- A few ‘hero’ applications will demand exascale processing (eg full aircraft simulation)
- Capability and capacity modes will be needed (parameter studies).
- Real time HPC will open many new applications (smart electricity distribution, ITS)

Recommended actions

- HPC pilot networks which stimulate the HPC solutions marketplace.
- Research & development activities, which stimulate technology development in the HPC domain, and transfer of technology to the HPC domain from other computing domains and constituencies.
- Visioning, roadmapping and constituency-building activities, which prepare a long term strategy for R&D&I initiatives under Horizon 2020.

Research Priorities

- Highly scalable methods for modelling and simulation that can exploit massive **parallelism** and **data locality**.
- New programming models and tools, targeted at massively **parallel** and **heterogeneous environments**.
- Decoupling application development from HPC
- Technologies to support new and emerging applications which require **robust** HPC with **real-time** capability.
- **Data-intensive** HPC
- **Low-energy** computing from both an architectural and application perspective

Future Plans

- Aim to continue network through 2012 and beyond as:
 - A forum for HPC researchers and users
 - An information point for non-HPC specialists
 - Open to industry and academia
- Continue to be involved with HiPEAC and activities such as EUINCOOP

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