

# Barcelona Multicore Workshop

PlanetHPC

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# PlanetHPC

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.

# PlanetHPC

Mass market  
products

Industry and business  
applications and processes

High-end users:  
research

Embedded System

Exascale

HiPEAC



PlanetHPC



PRACE



EESI



# Motivation

You've heard it all before . . .

- Energy consumption.
- Multicore computing era is with us
- Performance increase only possible through (massive) parallelism
- Legacy software abounds

# Current Status

About to publish a strategy report based on a series of workshops with industry and academia.

- Analysis of challenges and opportunities
- Industry heavily involved
- Recommended course of action

## 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)



## Key findings (continued)

- Lack of awareness in industry
  - Some codes will slow down
- Need to engage ISVs
  - Investment to rewrite codes
  - Flexible licensing/business models
- Explore new numerical methods
  - Better scalability
  - Need to be trusted

# Key recommendations

- HPC Pilot projects to stimulate market
  - Get involvement from all actors
- R&D themes
  - Programming models
  - Scalable algorithms
  - Real time, fault tolerant HPC
- Promote partnership



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