



HPC for SMEs

Bringing HPC-cloud based simulation services in reach of SMEs

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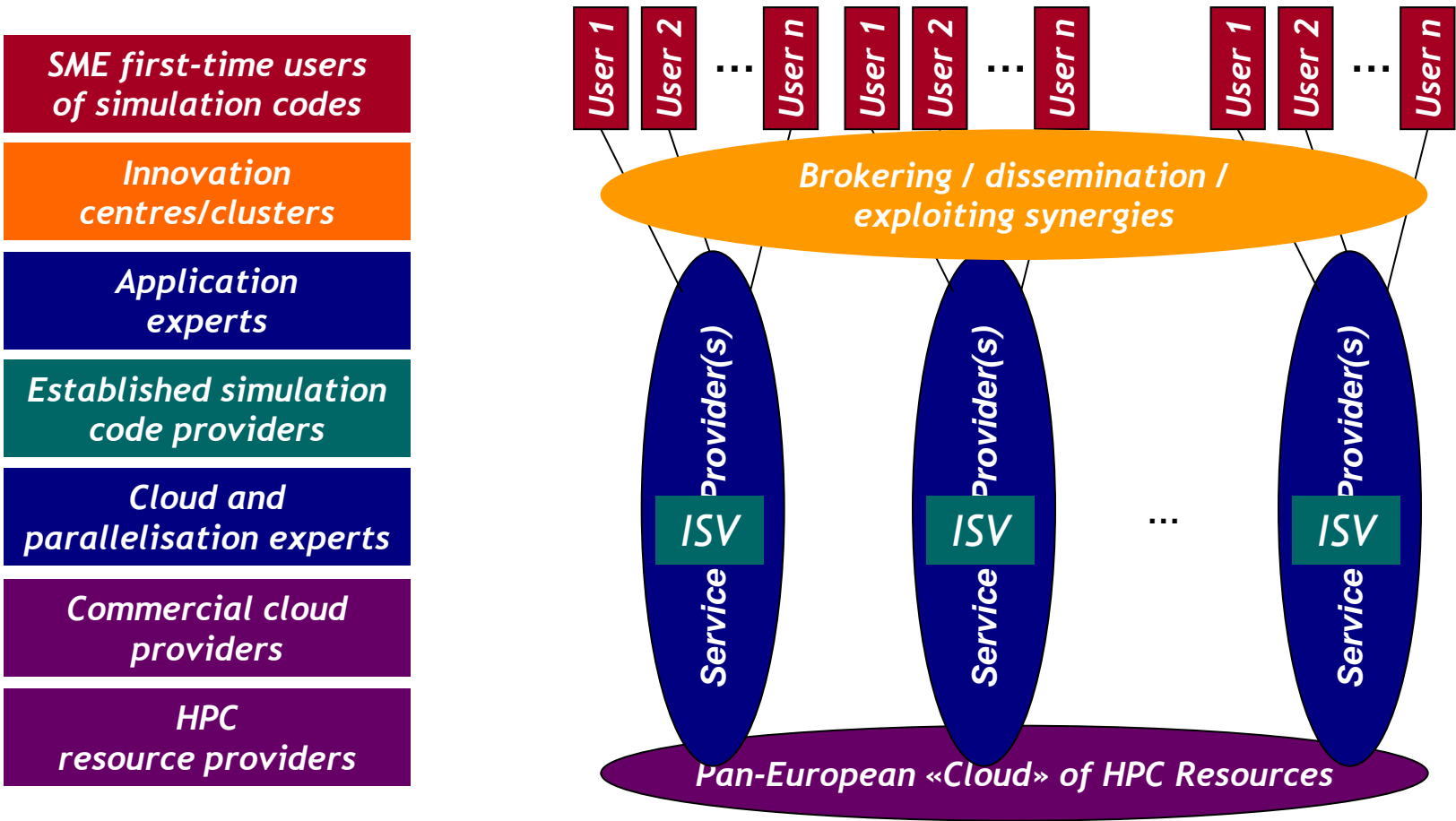
- ❑ Need of SMEs
- ❑ Supercomputing vs. scalable HPC
- ❑ Average profile of SME HPC-usage:
 - High entry barrier
 - Low initial demand
 - Fluctuating requirements
- ❑ ??? as a service – one-stop-shopping
 - Application license
 - Expertise
 - Dynamic access to HPC resources



- ❑ **EU Cloud Computing Strategy – July '12**
 - EU legislative & regulatory actors to prepare a coherent cloud-friendly policy framework
- ❑ **EU HPC strategy – Feb '12**
 - Holistic approach addressing services both to industry – incl. SMEs - and academia
 - Demand & supply side perspectives of HPC
 - SMEs: Set up networked HPC competence centres
- ❑ **Factory of the Future PPP (FoF): 2009 - 2013**
 - Support manufacturing industry in the development of new and sustainable technologies
- ❑ **Piloting HPC-cloud based simulation services for SMEs in manufacturing and engineering**



Piloting simulation services for engineering and manufacturing



Tentative, subject to approval
and modifications



Objective 7.1:

*Application experiments
for robotics and simulation*

□ Focus of the pilot:

- **Engineering and manufacturing**
- Crisis recovery PPP **Factory of the Future**

□ Innovation at 3 levels

1. **Users**: one-stop-shopping access to simulation services including expertise and cloud resources
2. **Software suppliers**: software porting on the cloud, experimenting new business models
3. **HPC resource providers**: establish a commercially sustainable European cloud of HPC resources

□ Light & fast implementation

- **Cluster** a critical mass of experiments in (one) project(s)
- Batches of light **open calls** for additional experiments
- **X-tasks**: brokering, dissemination, synergies, stimulating replication, common HPC cloud services

Open issues for reflection

Exploit the EU dimension

- Build on Member States innovation ecosystems – not compete with them!
- How to reach out to SMEs across the EU – beyond leading regions?
- How to stimulate replication - in the domain and beyond, e.g. biotech?

Business models and licensing issues

- How to make licensing SME-friendly?
- Open source SW – value added services?
- Pricing/business models for HPC resources during the pilot and beyond?

Others:

- Need for feasibility studies to prepare adoption?
- Duration and size of adoption experiments – success metrics?
- How to make pilot services commercially sustainable?
- Role of innovation clusters, solution centres, service providers, ...?

- ❑ EU strategies on Cloud and HPC
- ❑ FP7 ICT WP 2013
 - Tentative WP publication: July 2012
 - Pilot on HPC-Cloud based Simulation Services for SMEs under Challenge 7 (FoF)
 - Tentative Closing of Call: December 2012
 - Opportunities for SMEs from mid 2013
- ❑ PPP Info Day 9-10 July, Brussels

A Strategy for Research
and Innovation through
High Performance
Computing



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More information, strategy papers, presentations:

- cordis.europa.eu/fp7/ict/computing
- ec.europa.eu/research/industrial_technologies/factories-of-the-future_en.html
- ec.europa.eu/information_society/activities/cloudcomputing/index_en.htm
- ec.europa.eu/research/infrastructures/index_en.cfm