

The European HPC service needs a *User Forum!*

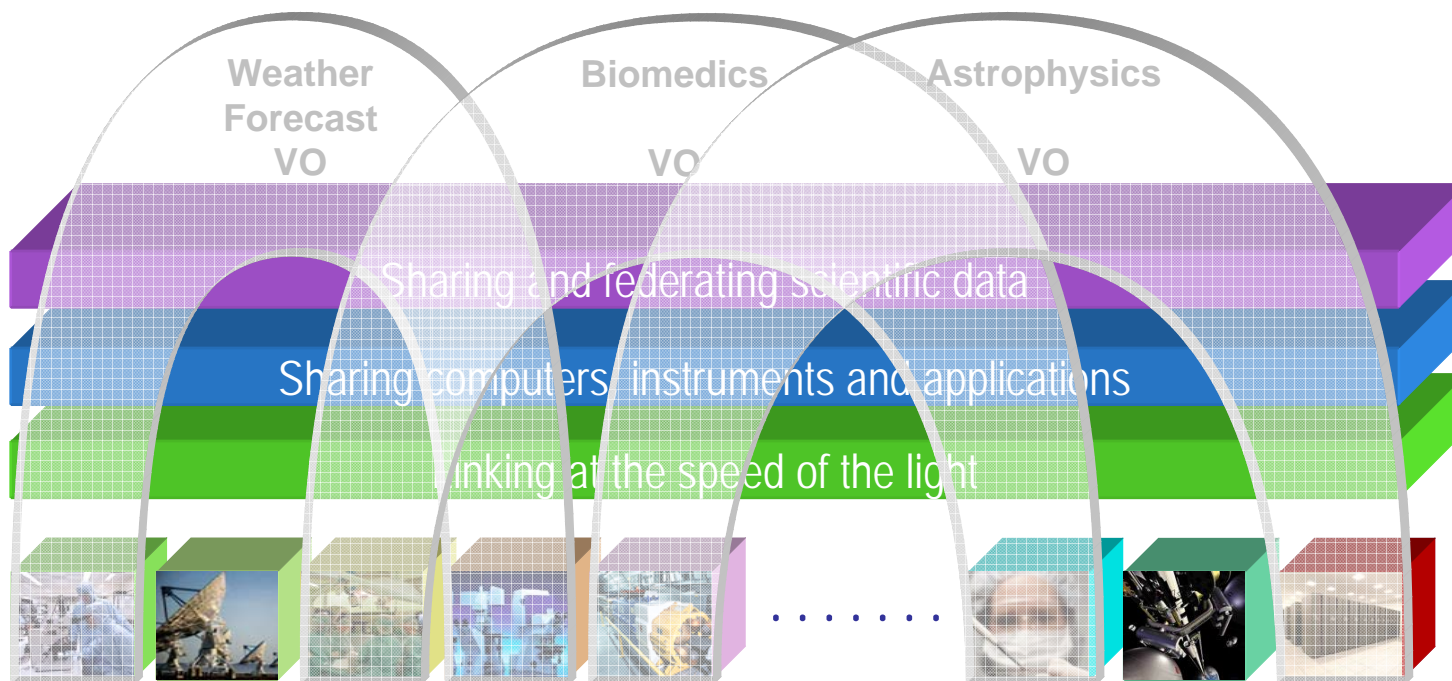
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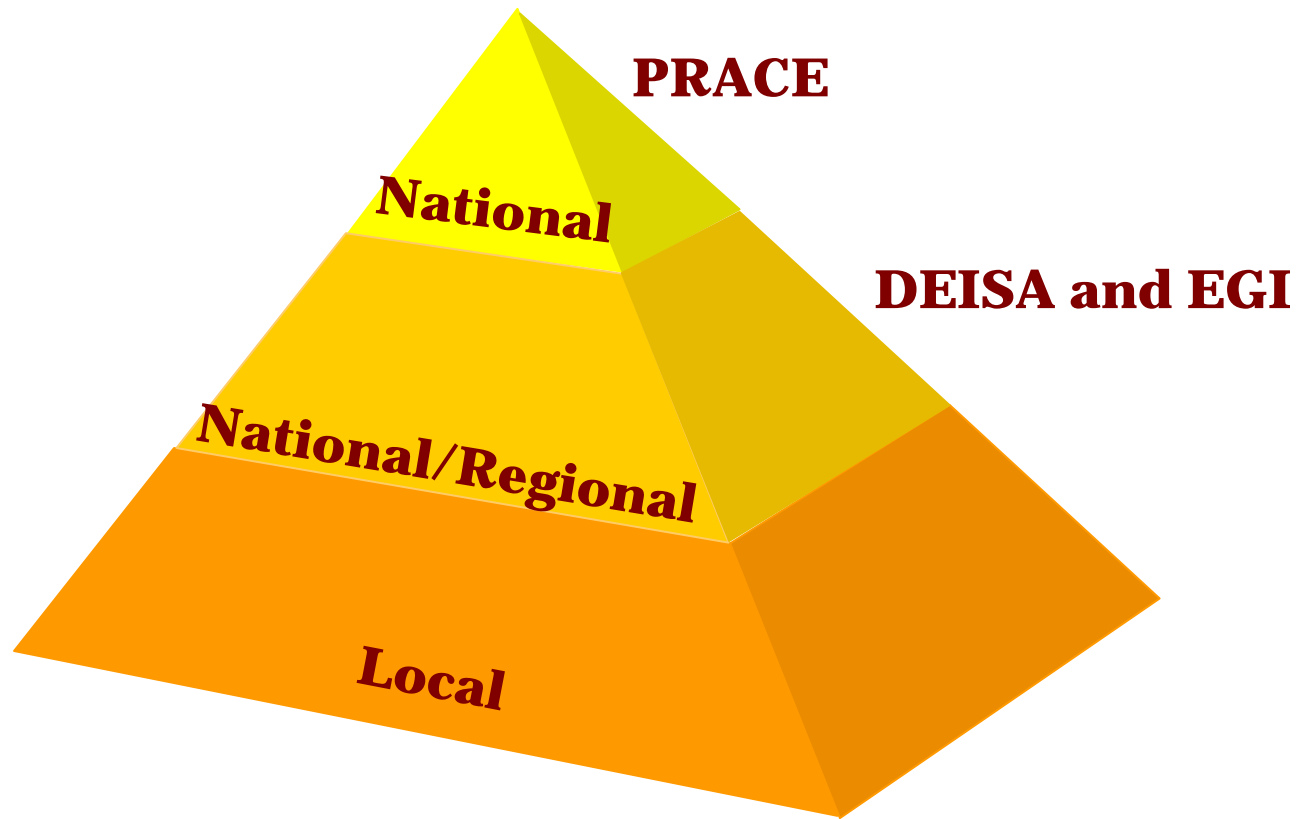


e-Infrastructure: the vision

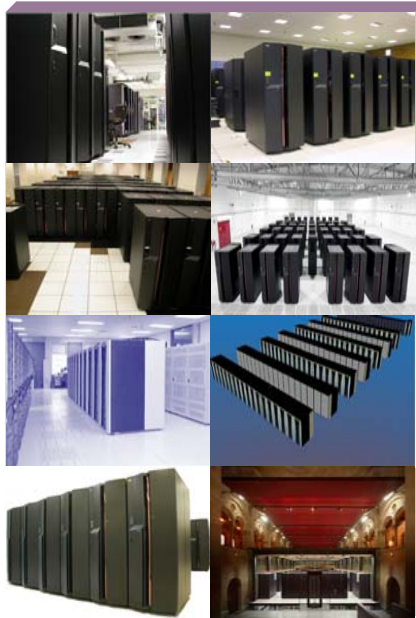
Connecting researchers
Sharing the best scientific resources
Building global virtual research communities



FP7: the European HPC Service



DEISA: 'virtual' HPC services



- **12 sites in 7 countries connected at 10 Gb/s**
- **Over 22,000 CPUs with an aggregated peak performance of close to 1 Peta flops**
- **Running larger parallel applications in individual sites**
- **Enabling workflow applications with grid technologies (UNICORE)**
- **Providing a global data management service**
- **Extreme Computing Initiative**



PRACE: the preparatory phase



- **Late 2009: 1PF in the top 5**
- **Late 2010: 2 PF in the top 5; 1PF in the top 10**
- **2011: over 10PF in the top 5; 2 PF in the top 10**
- **2020: the exaflop in the top 5**



What about the users ? (from academia and industry)

- **What will they need in late 2009, 2010, ... 2020?**
- **Who will speak on their behalf?**
- **Who will represent them in the governance structure of the European HPC service?**
- **Is the U.S. based HPC User Forum likely to become also 'the' forum for the users of European facilities?**



Draft WP2010 topics: e-Infrastructures



- **INFRA-2010-1.2.1: Distributed computing infrastructure (DCI)**
- **INFRA-2010-1.2.2: Simulation software and services**
- **INFRA-2010-1.2.3: Virtual Research Communities**
- **INFRA-2010-2.3.1: First implementation phase of the European HPC service**
- **INFRA-2010-3.3: Coordination actions, conferences and studies supporting policy development, incl. international cooperation**



RI Call 7: Open 30.07.09; close 24.11.09



Topics	Budget (M€)	Conditions, requirements
INFRA-2010-1.2.1: DCI	50	<ul style="list-style-type: none"> ▪ Total for 1.2.1.1 (EGI) & 1.2.1.2 (Service deployment): 25 M€ ▪ 1.2.1.1: a single proposal is expected to be funded
INFRA-2010-1.2.2: Simulation SW & services	12	
INFRA-2010-1.2.3: Virtual research communities	23	
INFRA-2010-2.3.1: PRACE	20	
INFRA-2010-3.3: Support measures	10	
Total	115	

INFRA-2010-1.2.1: Distributed computing infrastructure (DCI)



1.2.1.1- European Grid Initiative (EGI)

- ♦ **Set up organisation for sustainable grid services provision**
- ♦ **Stakeholders: National Grid Initiatives (NGIs) (*majority*); possibly other entities**
- ♦ **Seamless progressive transition to new scheme**
- ♦ **International collaboration & interoperability, open source/standards policy**

1.2.1.2 - Service deployment

- ♦ **Services for user communities that are heavy users of DCIs and have multi-national dimension**



INFRA-2010-1.2.1: Distributed computing infrastructure (DCI)



1.2.1.3- Middleware and repositories

- **Further develop quality middleware**
- **Create SW-component repositories to complement middleware-services; maintenance later by EGI**

1.2.1.4 – Access to DCI platforms

- **Easier access to DCIs through science gateways; support workflows combining capacity & capability computing and access to data & networks**

1.2.1.5 – Extension of DCI platforms

- **Extend existing DCIs to incorporate remote operation of scientific instruments (e.g. in context of ESFRI roadmap projects)**

International links, education & training, standards

INFRA-2010-1.2.2: Simulation software and services



Overall aim: complex simulation SW to fully & timely exploit HPC & distributed computing capabilities

Specifically:

- **Development, adaptation & maintenance of SW on dynamically evolving platforms for demanding appl.**
- **Deployment of computational science infrastructure: models, tools, algorithms & visualisation to address extreme scale, heterogeneity, performance...**
- **Standards for scalability, evolution, interoperation of SW components in integrated platforms**

International links, education & training, open standards, open source licensing schemes



INFRA-2010-1.2.3: Virtual Research Communities



Overall aim: enable users from all science & engineering disciplines to access & effectively use e-Infrastructures; ESFRI projects highly encouraged

Indicative list of supported activities:

- **Deployment to enable multidisciplinary collaboration & to address new user group needs**
- **Deployment of new types of services & tools to integrate research efforts across diverse user-fields**
- **Training**
- **Address human, social & economic factors influencing the creation of communities of users (both from academia and/or industry)**



INFRA-2010-2.3.1: First implementation phase of European HPC service PRACE

Overall aim:

- **deploy new ecosystem of computational resources (peta-scale by 2010, exa-scale by 2020) to address research needs; build on PRACE and integrate with the distributed resources of DEISA and FCI**

Supported activities:

- **Set up of the new organisation**
- **Development, adaptation and maintenance of system SW & tools for simulation & visualisation**
- **Technology evaluations of promising technology**
- **Mechanisms for involving industry as partners**
- **Training, sharing of best practises**

Address long-term sustainability!



INFRA-2010-3.3: Coordination actions, conferences, studies supporting policy, includes international cooperation

- **Coordination national & European e-Infrastructure initiatives**
- **Actions to strengthen innovation potential (e.g. scenarios for GEANT use as basis of 2020 Internet)**
- **Establish scientific SW strategy in Europe**
- **Coordinate European ecosystem of data repositories for info preservation/sharing (also ERA-NETs)**
- **Studies, conferences to encourage multi-disciplinarity, evaluate impact of e-Infrastructure**
- **International cooperation (joint roadmaps, interoperation of infrastructures)**

Commission proposal



Further information



www.cordis.europa.eu/fp7/ict/e-infrastructure/

Work Programme:

http://cordis.europa.eu/fp7/wp_en.html#capacities

