Overview of the Research Infrastructures Call 7
(FP7-INFRASTRUCTURES-2010-2)

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e-infrastructure

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e-Infrastructures for Science

...ubiquitous research environments for accessing and sharing resources and tools...

physics community

biomedics community

astronomy community

Sharing and federating scientific data

Sharing computers, software and instruments

Linking at the speed of the light

Scientific facilities

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e-Infrastructures Today

Innovating the scientific process:
global virtual research communities

Accessing knowledge:
scientific data

Experimenting *in silico*:
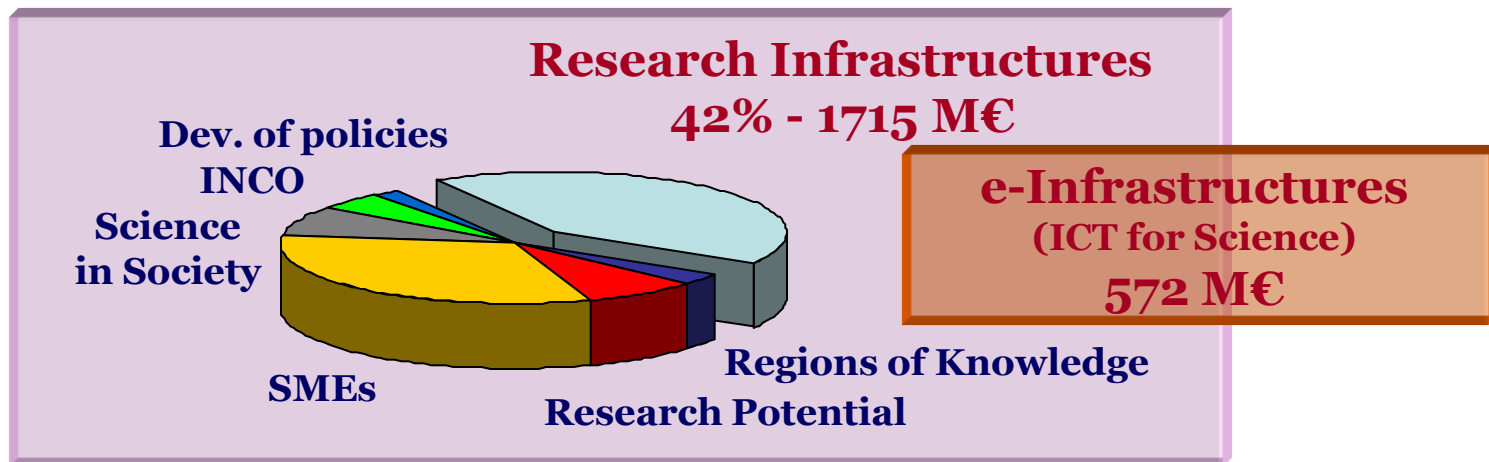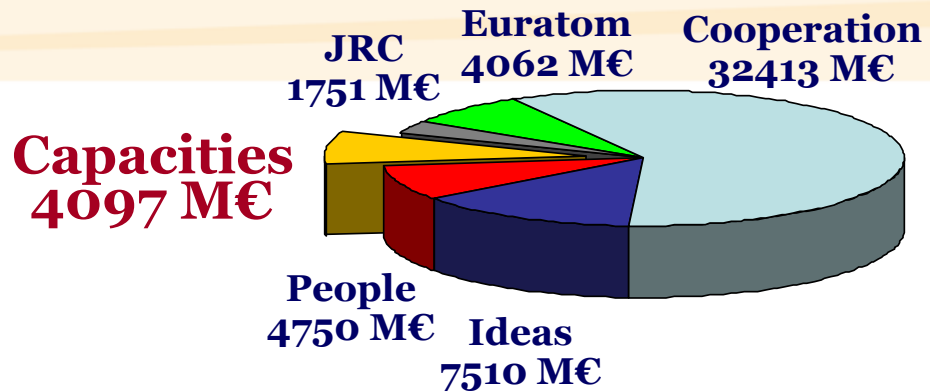**simulation and visualisation**

Sharing the best computational resources:
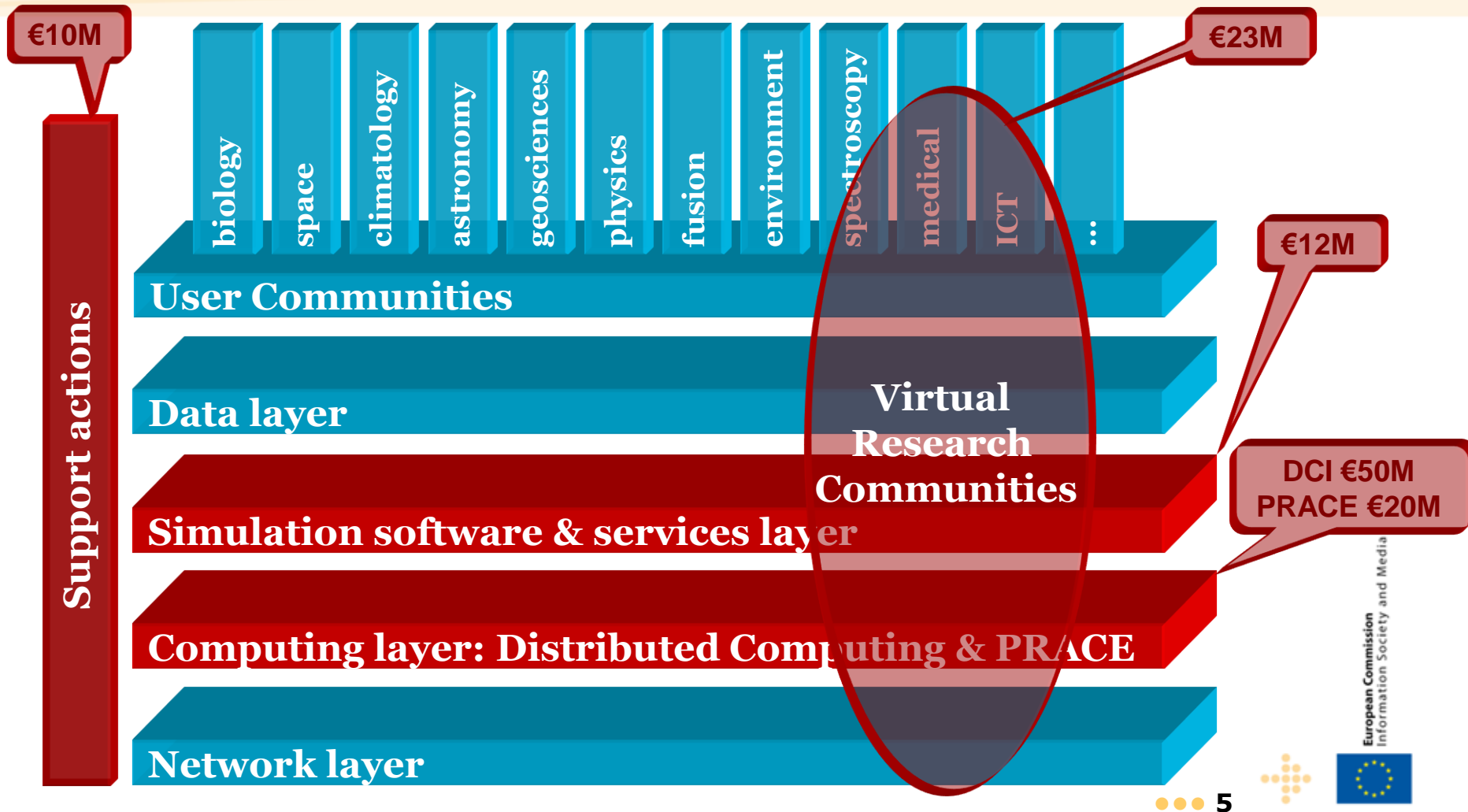**e-Science grid, supercomputing**

Linking at the speed of the light:
GÉANT

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FP7 Budget Overview (2007-13)

JRC 1751 M€

Euratom 4062 M€

Cooperation 32413 M€

Capacities 4097 M€

People 4750 M€

Ideas 7510 M€

Research Infrastructures 42% - 1715 M€

e-Infrastructures (ICT for Science) 572 M€

Dev. of policies
INCO
Science in Society
SMEs
Regions of Knowledge
Research Potential

Call 7: closing date 24.11.09

€10M

€23M

€12M

DCI €50M
PRACE €20M

Support actions

biology · space · climatology · astronomy · geosciences · physics · fusion · environment · spectroscopy · medical · ICT · …

User Communities

Data layer

Simulation software & services layer

Computing layer: Distributed Computing & PRACE

Network layer

Virtual Research Communities

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Call 7: topics and budget

Topic	Indicative budget (EUR million)	Funding Scheme
INFRA-2010-1.2.1 Distributed computing infrastructure (DCI)	50	CP-CSA
INFRA-2010-1.2.2 Simulation software and services	12	CP-CSA
INFRA-2010-1.2.3 Virtual Research Communities	23	CP-CSA
INFRA-2010-2.3.1 First implementation phase of the European High Performance Computing (HPC) service PRACE	20	CP-CSA
INFRA-2010-3.3 Coordination actions, conferences and studies supporting policy development, including international cooperation, for e-Infrastructures	10	CSA-CA and CSA-SA

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Topic objectives

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

- 1.2.1.1– <u>European Grid Initiative (EGI)</u>
  - Set up organisation for sustainable grid services provision including user support & SW/middleware repository maintenance, operation & certification
  - Plan and prepare future service evolution of grids
  - Stakeholders: National Grid Initiatives (NGIs); possibly other entities
  - Seamless progressive transition to new EGI scheme is required
  - Promote international collaboration & interoperability; open source, standards and licensing policy are required

- 1.2.1.2 – <u>Service deployment</u>
  - Services for user communities that are heavy users of DCIs and have multi-national dimension
  - Activities expected to be articulated with EGI

The total indicative budget for sub-topics 1.2.1.1 and 1.2.1.2 is EUR 25 million. A single proposal is expected to be funded to cover sub-topic 1.2.1.1.

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Topic objectives

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

- **1.2.1.3 – <u>Middleware and repositories</u>**
  - Further develop quality middleware
  - Create SW-component repositories to complement middleware-services; maintenance to be ensured later by EGI

- **1.2.1.4 – <u>Access to DCI platforms</u>**
  - Easier access to DCIs through science gateways for computing and data service; support workflows combining capacity & capability computing and access to data & networks

- **1.2.1.5 – <u>Extension of DCI platforms</u>**
  - Extend existing DCIs to incorporate remote operation of scientific instruments (e.g. in context of ESFRI roadmap projects)

All DCI proposals are encouraged to consider the international dimension, education & training and standards. Innovation in services and technology is encouraged.

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Topic objectives

INFRA-2010-1.2.2: Simulation software and services

- <u>General objectives</u>:
  - Multi-disciplinary and multi-scale "in silico" experimentation and simulation, ensuring the ability to fully and timely exploit high-performance and distributed computing capabilities
  - Integrating scientific application software in the European e-Infrastructure
- <u>More specifically</u>:
  - Development, adaptation and maintenance of scientific software on dynamically evolving hardware platforms
  - Deployment of a computational science infrastructure through models, tools, algorithms and simulation and visualisation techniques
  - Promotion of appropriate software standards to provide scalability, evolution and interoperation in integrated platforms

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Topic objectives
INFRA-2010-1.2.3: Virtual Research Communities

- General objectives:
  - Enable an increasing number of users from all disciplines to access, share and use e-Infrastructures
  - Remove constraints of distance, access and usability, as well as barriers between disciplines for a more effective scientific collaboration and innovation

- More specifically:
  - Deployment of e-Infrastructures in research communities to enable multi-disciplinary collaboration
  - Deployment of end-to-end e-infrastructure services and tools for integrating and increasing research capacities
  - Build user-configured virtual research facilities and test-beds from collection of diverse resources
  - Address human, social and economic factors to facilitate the creation, take up/maintenance of e-Infrastructure services
  - Integrate and link regional e-Infrastructures

  Addressing e-Infrastructures for the ESFRI projects and communities is encouraged

  Incorporating users from academia and industry and training activities in the use of e-Science are welcome

Topic objectives

INFRA-2010-2.3.1: First implementation phase of the European High Performance Computing (HPC) service PRACE

- <u>General outcomes:</u>
  - Deploy new ecosystem of computational resources to address the needs of advanced science & engineering; build on PRACE and integrate DEISA resources and services

- <u>More specifically:</u>
  - Set up & operation of a new organisational structure
  - Development, adaptation and maintenance of SW
    - system SW & tools, from operating systems and software accelerators to parallelising compilers
    - tools, algorithms & standards for modelling, simulation, visualisation)
  - Technology and system evaluations to ensure deployment of leading edge technology
  - Mechanisms for industry involvement as partners (users, vendors, providers)
  - Training and sharing of best practices

  Address financial/environmental sustainability

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Topic objectives

INFRA-2010-3.3:Coordination actions, conferences and studies supporting policy development, including international cooperation, for e-Infrastructures

- Enhance coordination between national and pan-European e-Infrastructure initiatives and programmes
- Strengthen the innovation potential and impact of e-Infrastructures (e.g scenarios to extend the use e-Infrastructures beyond Research toward e-learning, e-Health, e-Gov services)
- Establish a new scientific software strategy to reinforce the global position of Europe in scientific software development, deployment and use
- Coordinate a European eco-system of scientific data repositories for preservation and sharing of scientific information
- Specific studies on e-Infrastructure related topics
- Dissemination of information on the e-Infrastructure programme and projects
- International cooperation, including:
  - further extension of e-Infrastructures to International Cooperation Partner countries (ICPC);
  - joint roadmaping of activities with developed countries;
  - promotion of the interoperation between similar infrastructures on the global scale

Further information

- Call page on CORDIS:
  http://cordis.europa.eu/fp7/dc/index.cfm?fuseaction=UserSite.CapacitiesDetailsCallPage&call_id=263

- Web page of the Call 7 information day held on 18.06.09:
  http://cordis.europa.eu/fp7/ict/e-infrastructure/events-20090618_en.html

- E-mail for questions related to the call:
  INFSO-RI-CALLS@ec.europa.eu

- e-Infrastructures home page:
  http://cordis.europa.eu/fp7/ict/e-infrastructure/home_en.html