

Topics opened in Call FP7-INFRASTRUCTURES-2010-2 (call N°7):

INFRA-2010-1.2.1: Distributed computing infrastructure (DCI) [50 EUR million indicative]

Recognising that a distributed computing and software infrastructure is a key enabler of eScience, this action aims at the development and sustainable provision of services, underlying middleware and access to Distributed Computing Infrastructures (DCI), including actions in support of the European Grid Initiative (EGI). More specifically:

1.2.1.1– European Grid Initiative (EGI)

The main objective is to set up an organisation that will enable the sustainable provision of grid services to the European scientific community. The proposal should cover all strategic, policy, technical, financial and governance aspects. The EGI should also provide appropriate user support, certify as well as maintain and operate repositories of middleware/software components – developed by the EGI or others, facilitate the launch of cooperative grids development projects and should plan and prepare the future evolution of grids by innovating in services, technological approaches and business models to stay abreast of user needs.

The stakeholders of the EGI should be the National Grid Initiatives (NGIs) as well as other entities that are willing to significantly contribute to the aims of the EGI. The majority of the stakeholders should be NGIs; the latter must be legal entities with a public service mission aiming at integrating resources on a national level for "one-stop-shop" efficient provision of grid-based services to the research community. The EGI should be inclusive in membership. Its services should be extended, where possible and appropriate, also to countries not participating yet in the EGI through an NGI.

The EGI should ensure a seamless and progressive transition in service provision from the current arrangements to a new scheme that is more sustainable organisationally and financially, demonstrating economies of scale with respect to the current situation as well as progressively increasing financial commitment from its stakeholders.

The EGI should promote close collaboration and interoperability with similar infrastructures in other parts of the world. It should follow a clear policy for open source software, adherence to open standards and for licensing.

1.2.1.2 – Service deployment

The aim is to deploy services for user communities that are heavy users of DCIs and have a multi-national dimension. Software components should be integrated in platforms as needed for service provision. Where appropriate, new service provision models should be explored and harmonised interfaces to DCI resources should be ensured. This activity should ideally be articulated with the EGI (sub-topic 1.2.1.1).

1.2.1.3 – Middleware and repositories

- Develop middleware that strengthens European presence by consolidating or even going beyond existing DCIs (e.g. exploiting emerging developments like virtualisation), while improving their stability, reliability, usability, functionality, interoperability, security, management, monitoring and accounting, measurable quality of service, and energy efficiency.
- Create user-friendly and comprehensive repositories of software components that complement the middleware services. Harvested components should be slightly adapted,

the future maintenance of DCI-related repositories could be ensured by the EGI

1.2.1.4 – Access to DCI platforms

Enable user communities to more easily access existing European DCI platforms through science gateways. Support complex workflows needing combinations of capacity and capability computing and access to data and networks, emphasizing interoperability.

1.2.1.5 – Extension of DCI platforms

Extend existing DCIs to incorporate remote operation of scientific instruments like already existing research facilities of European interest and emerging ones (e.g. ESFRI roadmap projects).

All DCI proposals are encouraged to consider the international dimension of their activities, incorporate education and training, as well as foster the use and deployment of standards. Integrating innovation in services and technology is also encouraged.

Expected impact: Work on DCI will achieve broader and deeper inter-disciplinary scientific collaboration in Europe. It will ensure coordinated, strengthened and focused software deployments in the context of e-Infrastructures and across the broadest range of fields in science and engineering. Also expected are an improved usability of DCI platforms for a larger user base and for conducting inter-disciplinary research; the strengthening of the ability to exploit the rapidly changing hardware environments through appropriate software deployments; and the reinforcing of the European world position in software development and deployment with a resulting impact on innovation. Regarding the EGI in particular, it will create a sustainable environment for the provision of grid-based computing services to a wide range of research fields, based on a stable collaborative European and National co-funding scheme. It will enable the easy sharing of resources (computation, storage, data) across national and administrative boundaries and will ensure the technological interoperability of global grids. Such a development will provide a new dimension to the realisation of the European Research Area (ERA).