

EGI-InSPIRE



Summary: Scientific research today is no longer conducted within national boundaries – the deluge of scientific data from computing simulations and instruments in international facilities has led to a shift towards e-Science. Scientists are therefore becoming increasingly dependent on e-Infrastructures for large-scale analysis of data, which are essentially distributed computing and storage resources linked by high-performance networks. E-Infrastructures now form an integral part of our daily lives, not only as essential tools for scientific research, but they are also increasingly central to the business models of companies large and small. To support European science and innovation, a longer lasting operational model is now needed – both for coordinating the infrastructure itself and for delivering integrated services that cross national borders.

The EGI-InSPIRE project will support the transition from a project-based system to a sustainable pan-European e-Infrastructure, by supporting ‘grids’ of high-performance computing (HPC) and high-throughput computing (HTC) resources. EGI-InSPIRE will also be ideally placed to integrate new Distributed Computing Infrastructures (DCIs) such as clouds, supercomputing networks and desktop grids, to benefit the user communities within the European Research Area. EGI-InSPIRE will collect user requirements and provide coordination and support for the current and emerging user communities, for example the ESFRI projects. Support will also be given to the current heavy users of the infrastructure, such as high energy physics, computational chemistry, materials science, earth science, fusion, astronomy & astrophysics and life sciences, as they move their critical services and tools from a centralised support model to one driven by their own individual communities.

Action plan: EGI-InSPIRE will support the establishment of a sustainable model for a European Grid Infrastructure (EGI) that integrates resources contributed by national and domain-specific resource providers. Key to this process is a new organisation, EGI.eu, coordinator on behalf of the European resource provider community of the EGI-InSPIRE project, which is also more broadly dedicated to coordinating the EGI community on behalf of its stakeholders.

The EGI is a federation of independent national and domain specific resource providers, who support specific research communities and international collaborators both within Europe and worldwide. EGI.eu brings together partner institutions established within Europe to provide a set of essential human and technical services that enable secure integrated access to distributed resources on behalf of the user community.

The production infrastructure supports Virtual Research Communities – structured international user communities – that are grouped by specific research domains. Virtual Research Communities are formally represented within EGI at both a technical and strategic level. Direct support is coordinated through a central helpdesk, that brings together operational, technology and other support teams from within the EGI-InSPIRE project and other partner projects.

Networking activities: EGI-InSPIRE will support and develop the European DCI community in three important ways:

- Integrate resource providers more closely, both politically and technologically, within the National Grid Initiatives (NGIs) and European International Research Organisations (EIROs), represented by the project consortium and beyond.
- Support the development of policies by the community of European resource providers, in collaboration with other bodies in Europe and worldwide, to ensure effective technical management, integration and operation of the EGI.
- Coordinate the development and support of Virtual Research Communities currently using the production infrastructure within the European Research Area and encourage other structured user communities onto the infrastructure.

continued overleaf

Project acronym:
EGI-InSPIRE

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Project type: CP-CSA

Start date: 01/05/2010

Duration: 48 months

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72,000,000 €

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25,000,000 €

Total funded effort in person-month:
9241

Web site:
<http://www.egi.eu>

Contact person:
Steven Newhouse
email: director@egi.eu
tel.: +31 (0)20 592 5016
fax.: +31 (0)20 592 5155

Project participants:
(overleaf)

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Collaboration with other EC funded projects:
European Middleware Initiative (EMI)
Initiative for Globus in Europe (IGE)
European Desktop Grids Initiative (EDGI)
e-ScienceTalk
StratusLab
VenusC
CHAIN
GISELA

EGI-InSPIRE will also support the work of EGI.eu within the European E-Infrastructures Forum, a collaboration that includes DEISA, PRACE, GÉANT and TERENA. EGI.eu will work with other DCI technology projects such as EMI, IGE, StartusLab, VenusC and infrastructures such as EDGI for desktop grids, to bring the technologies underpinning the computational and data infrastructures needed by our user communities into production. Strong links will also be established with the SIENA project to ensure that the needs of the production infrastructure are incorporated into the standards roadmap being developed within the wider community.

To reach the broader scientific community and general public, EGI-InSPIRE will work with e-ScienceTalk, which will build on its predecessor GridTalk to bring the success stories of the European e-Infrastructures to new communities and decision makers in government and industry. The resources providers, the Virtual Research Communities, the external technology providers and other partner projects will be brought together twice a year at Technical and User Forums supported by EGI-InSPIRE and EGI.eu.

Service activities: EGI-InSPIRE's service activities are focused on the European production infrastructure brought together by the partners within the project:

- Operate a secure, integrated, reliable pan-European infrastructure that can support diverse science communities through the deployment of different technology solutions.
- Work with external technology providers (initially EMI and IGE) to ensure that their solutions meet the needs of the operational and user community in terms of reliability, scalability and functionality.
- Maintain a set of services for the Heavy User Communities currently exploiting the infrastructure that can be developed to meet the needs of other communities

Together these services will support a virtuous feedback circle – starting with a set of integrated services on the production infrastructure that meet the needs of its users, working with external technology providers to define new or improved services based on these existing services, assessing the quality of the new delivered services, followed by their deployment in to the production infrastructure.

Joint research activities: EGI-InSPIRE will enhance the European production infrastructure beyond the current state-of-the-art by including resources that are not currently part of the European infrastructure model, such as HPC, desktop grids and cloud computing. The current operational tools will need to be adapted to accommodate these new resources, as well as to support national rather than centralised operational models in the future.

User communities: EGI-InSPIRE provides direct support to the communities that rely heavily on the infrastructure by supporting the shared services and tools that are common to many of them. However, the pan European Grid Infrastructure is open to all user communities – those from its existing user base and those willing to work with the project in the future.



International aspects: While EGI-InSPIRE focuses principally on the European production infrastructure, it needs to support the collaborative research needs of its user communities, for their resources to be integrated with infrastructures around the world. In addition to over 40 partners located within geographical Europe, EGI-InSPIRE includes 8 unfunded partners from the Asia Pacific region. Strong collaborations are also expected with infrastructures in North America, and the emerging infrastructures in Latin and South America.

Project participants:

EGI.eu	NL
INFN	IT
CSIC	ES
CNRS	FR
KIT	DE
STFC	UK
CERN	
GRNET	GR
ASTI	PH
AGSC	TW
CESNET	CZ
CYFRONET	PL
LIP	PR
NCF	NL
TUBITAK LAKBIM	TR
UI SAV	SK
CSC	FI
VR-SNIC	SW
ARNES	SI
KFKI	HU
IPB	RS
IPP-BAS	BG
UCPH	DK
TCD	IE
KISTI	KR
SIGMA	NR
SWITCH	CH
SRCE	HR
e-ARENA	RU
UPT	AL
JKU	AT
UOM	ME
UKIM	MK
UOBL ETF	BA
IMCS UL	LV
ICI	RO
UCY	CY
UNIMELB	AU
VU	LT
NUS	SN
EMBL	
IUCC	IL
UIIP NASB	BY
IIAP NAS RA	AM
GRENA	GE
RENAM	MD
UPM	MY
ITB	ID
NORDUNET A/S	DK
NECTEC	TH
KEK	JP