

# BEINGRID

## Scope

**Beingrid, Business Experiments in GRID**, is the European Union's largest integrated project funded by the Information Society Technologies (IST) research, part of the European Union's sixth research Framework Programme (FP6).

Grid technology is in a critical transition as it moves from research and academic use to wider adoption by business and enterprise. The use of Grid technology brings many benefits such as the greater utilisation of IT resources and increased business flexibility with consequent reductions in overall cost for end users, including security enhancements. Grid enables large, complex systems to be utilised effectively, promoting the sharing of networked resources and supporting new business processes across distributed administrative domains.

The lack of business reference cases to persuade potential users to explore the economic benefits of Grid technology is hampering commercial exploitation of Grid solutions across the European Union (EU). Increased general deployment of Grid technologies into the market will strengthen the EU's competitiveness and leadership in this key area.

It is then time to push this technology adoption and to stimulate research into innovative business models.

The mission of Beingrid is therefore to establish effective routes to foster the adoption of Grid technologies across the EU and to stimulate research into innovative business models using Grid technologies.

Beingrid catalyse European business adoption of Grid services and lead to widespread uptake of these important technologies for the benefit of all.

The **strategic objectives** of Beingrid are:

- To understand the requirements for Grid uptake in the commercial environment, involving software vendors, IT integrators, service providers and end-users.
- To enable and validate the adoption of Grid technologies by business.
- To design and build a Grid toolset repository with components and solutions based on the main Grid software distributions including: the Globus Toolkit, gLite, Unicore, Gria and basic Web Service specifications.
- To develop and deploy a critical mass of Grid-enabled pilots, embracing a broad spectrum of economic sectors with different needs and requirements in terms of technological Grid challenges.

To meet these objectives, Beingrid is undertaking a series of targeted **Business Experiments** (BEs) designed to implement and deploy Grid solutions across a broad spectrum of European business sectors (including the media, financial, logistics, manufacturing, retail and textile sectors).

## Advances

The Beingrid consortium of 96 partners, led by Atos Origin, is drawn from across the EU and represents the leading Grid research organisations and a broad spectrum of companies keen to assess the benefits to their productivity, competitiveness and profitability from their use of Grid solutions.

Beingrid runs twenty five BEs. Each one of these is a real Grid application focusing on specific business processes addressing current customer needs and requirements. The partnership in each BE cuts across the full value chain of the targeted economic sector; from technology providers to different levels of users. Involvement of end users and service providers in the vertical business experiments pilots is considered crucial to produce successful case studies that support the transition of Grid technologies from an academic context to widespread enterprise adoption by building on the success of the early adopters of Grid solutions.

Of the completed 18 first-phase BEs, numerous show very good potential as commercial products and services and several partners are in the process of establishing them in their daily business or establishing spin-offs to specifically exploit them. These advances can be directly attributed to the EU programme, who through the funding of the project allowed us to establish an environment for innovation.

Complementing this work, **Gridipedia**, a knowledge and toolset repository, has been developed consisting of Grid service components and best practices to support European businesses with the take-up of Grid. The Gridipedia website ([www.gridipedia.eu](http://www.gridipedia.eu)) is currently seeing large growth and is populated with the results from the first phase of the project.



## Positioning in global context

Although Grid technology is not new, a series of continuous innovations has brought this technology closer to the market. There are many use cases from the pharmaceutical and financial sectors where mass forecasting and simulation are a source of competitive advantage. However, the technology has moved beyond this and now can also aid the integration of systems, manage multiple access to scientific instrumentation, store, arrange, process and back-up massive data sets and to facilitate the secure and private collaboration of multiple organisations.

It is the central principle of Beingrid that Grid is market-ready for a number of diverse applications based on these benefits. It is the project's objective to demonstrate this and in doing so to simultaneously promote the use of this technology across numerous sectors. It is this objective, and the methodology of nurturing and analysing pilot implementations, that make the Beingrid project different.

The EU research programme defines the objectives of the community and has placed increasing emphasis on the take up of results and the moving of research results closer to the market. Beingrid is different to many research projects because we are aligned specifically with this objective – helping Grid technology ‘cross the chasm’ of the product cycle – by demonstrating readiness and catalysing the marketplace.

## Contribution to standardization and interoperability issues

Among the reasons often quoted for a general lack of standards around which businesses can build Grid infrastructures and solutions, are that one; many draft standards are beset by heated-debates about the best technical direction for a standard to proceed; and two; too few standards are being developed with end-user input from business and commerce. Beingrid provides much needed input into the latter two points through the following concrete activities:

### **Indirect collaboration with existing standards efforts**

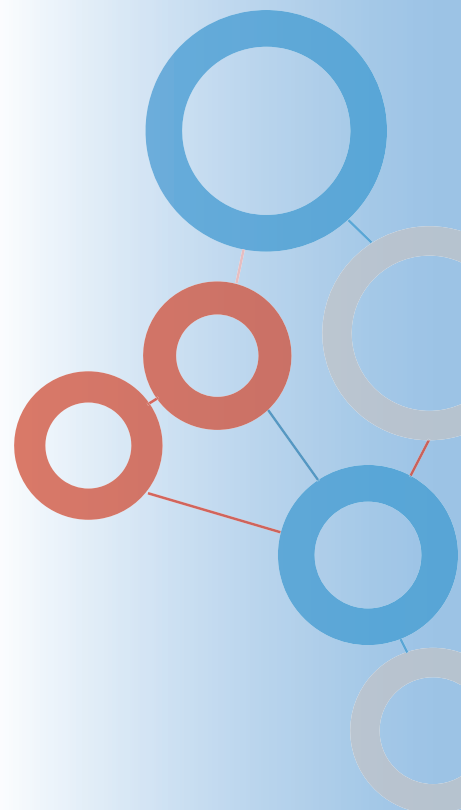
We are using the experience gained in deploying and using the various Grid technologies represented in Beingrid to influence and guide the future development of these technologies.

### **Publication of guidelines and best practices**

One of the major objectives of Beingrid is the development and publication of guidelines and best practices as a result of the technical and business common cross activities. Interpreting the term standardisation in a broader sense this task - by the adoption of these guidelines outside of the Beingrid consortium - contributes to a “standard” way of approaching similar problems in industry. In addition, Beingrid is indirectly contributing to the validation of pre-standards specifications by the provision of use cases derived of our business experiment's experiences.

## Target users / sectors in business and society

As the project seeks to stimulate the uptake of Grid solutions, the target users of the project's research activities are potential business end users seeking reference points in their sectors where Grid has had evident and repeatable success. In addition, providers of Grid solutions, and other companies that have a role within the Grid value chain are also targeted, as they are well placed to benefit from the Beingrid research and results. This latter group includes developers, systems integrators and service providers.



# BEINGRID

## Overall benefits for business and society

The research community has long been convinced of the benefits of Grid technology in the commercial sector. Furthermore, many projects have developed models of how a Grid-enabled society will interact and of the benefits for citizens of such an infrastructure. Consequently, much effort has gone into developing the technology and improving aspects seen as inhibitors of uptake – such as security and stability.

By accelerating the uptake of the technology in a wider range of sectors than currently seen, catalyzing uptake, Beingrid makes that foresight reality.

For the Computational Fluid Dynamics (CFD) sector, for example, a Grid pilot has been developed in Beingrid by the National Technical University of Athens, involving ICON, an independent Computer Aided Engineering Technology and Process consultancy and OpenCFD, who provide contracted development for the Open-FOAM open source CFD toolbox. According to Francisco Campos, Senior Consulting Engineer at ICON, *“ICON is pleased to exploit the benefits of the Grid as an end-user in the Beingrid Business Experiments. We see Grid technologies as a key enabler for CFD to impact the effectiveness and productivity of SME companies and Original Equipment Manufacturers alike.”*



## Examples of use

The 25 BEs stand as a reference point for other users. By highlighting the scenario, solution and result for each one of these cases, developing missing software and releasing best practice guides, the project encourages other end users in a similar situation to investigate the role that Grid technology could have for them.

Each of the 25 pilots is by definition a real business scenario. A Beingrid Case Studies Booklet has been published, detailing the first 18 of these cases, explaining the solution adopted and highlighting the benefits for clients.

As a second example, the ‘Virtual Reality for Architects’ application, has been developed to allow architects to provide customers with highly realistic models through which they can navigate in real time. Allowing clients to explore the building is an added value as they can better appreciate the design. Most innovatively, the application has been developed to allow the architect to work remotely – perhaps at the clients’ site, and access the service on an on-demand basis – allowing greater financial flexibility. confirms Isidore Zielonka, Partner, Art & Build.

By clearly explaining the business need for which the technology was developed, demonstrating the usability of the technology, identifying the technical innovation that makes it possible and comparing all this to the existing industry solution, each Beingrid use cases makes a compelling and engaging argument that Grid technology is sufficiently mature for widespread commercial adoption.

## Achievements

- groundbreaking work based on the study of the BEs, and published work describing the generic value chain for the Grid industry;
- worked with providers of Grid solutions and Grid application end users to develop new commercial exploitation strategies for Grid technologies across a range sectors;
- developed design patterns and technical implementations (components) which are available for download from [www.gridipedia.eu](http://www.gridipedia.eu);
- produced initial guides on legal matters pertinent to distributed computing environments, such as IPR and licensing issues;
- organized two highly successful industry-focused events, The European Finance Day in Paris in November 2007, and The Beingrid Industry Days in Barcelona June 2008, which received strong interest from industry;
- presented findings and also published in various relevant media.



### title

Business experiments in GRID

### contract number

034702

### type of project

Integrated Project

### contact point

Santi Ristol  
ATOS ORIGIN SOCIEDAD ANONIMA  
ESPANOLA, ES  
E-mail: [santi.ristol@atosorigin.com](mailto:santi.ristol@atosorigin.com)

### project website and partner list

<http://www.beingrid.eu/>

### EC contribution

15 700 000 €

### start date

01/06/2006

### duration

42