



Introduction

Seoul, South Korea, 13th December 2006

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Overview of the session

- **Welcome**
- **Overview**
- **Project Objectives**
- **18 business experiments**
- **(the) Repository**
- **Project Implementation Plan Structure**
- **Asian relationships**



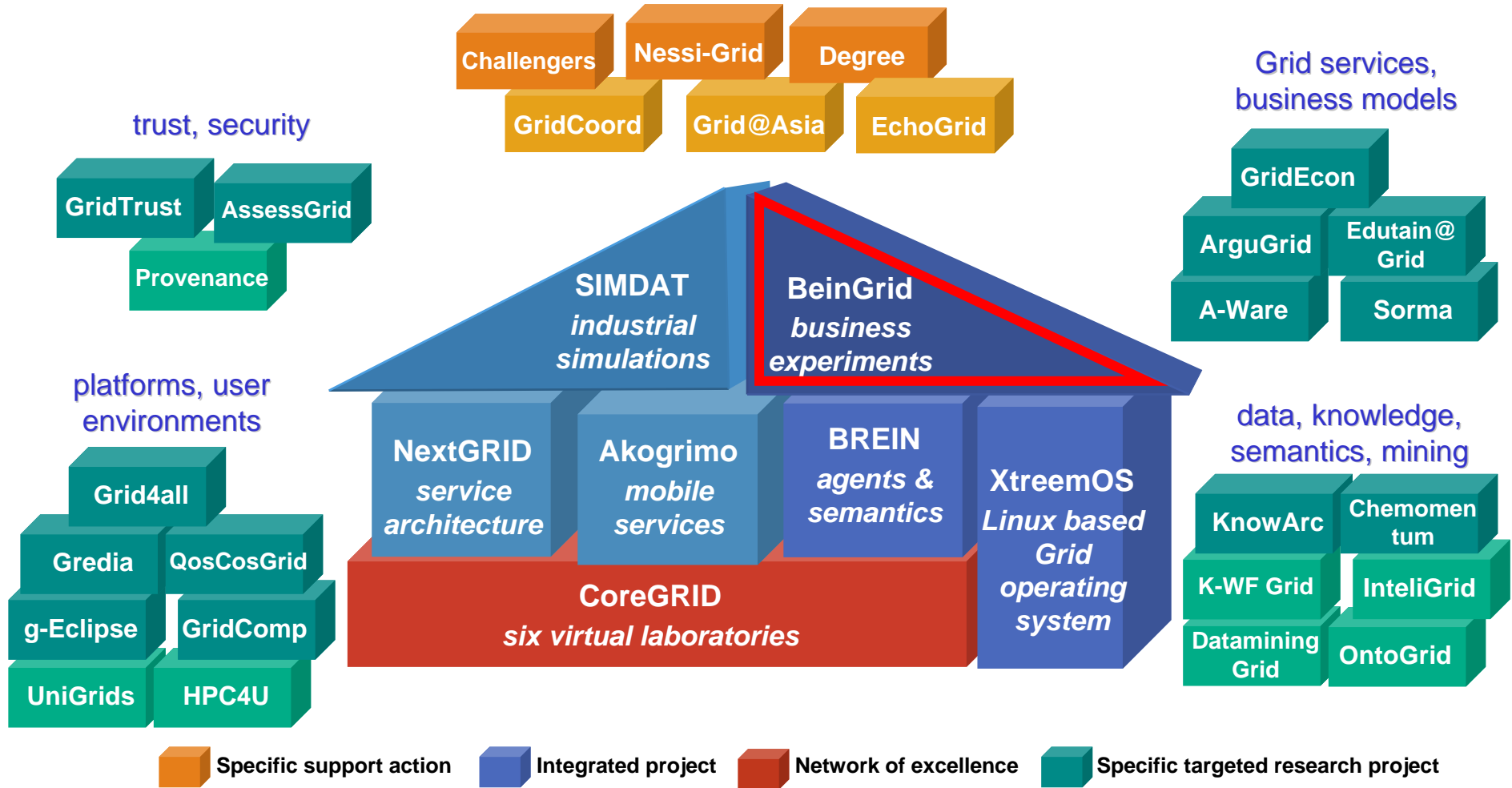
Main objective

- The main objective of the “Business Experiments in Grid” (BEinGRID) project, which has recently been selected for funding by the European Commission’s Grid Technologies F2 Unit, is to foster the adoption of the so-called Next Generation Grid technologies by the realization of several business experiments and the creation of a toolset repository of Grid middleware upper layers.
- BEinGRID will undertake a series of targeted business experiment pilots designed to implement and deploy Grid solutions in a broad spectrum of European business sectors (entertainment, financial, industrial, chemistry, gaming, retail, textile, etc). Eighteen business experiments are planned in the initial stage of the project with a second open call for proposals in the latter stages. Secondly, a toolset repository of Grid service components and best practise will be created to support European businesses that wish to take-up the Grid. To minimise redevelopment of components, BEinGRID will deploy innovative Grid solutions using existing Grid components from across the European Union and beyond.



BEinGRID related projects in FP6

supporting the NESSI ETP & Grid community





- **Type of project:** Integrated Project
- **Project coordinator:** Mr. Santi Ristol
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(ATOS ORIGIN)
- **Project start date:** 1st June 2006
- **Duration:** 42 months (Nov 2008)
- **Budget:** 24.7 M Euros
- **Max EC contribution:** 15.7 M Euros (63%)
- **Consortium:** 75 partners
- **Effort:** 2713 PM (226 PY, 65 P, 360.000h)

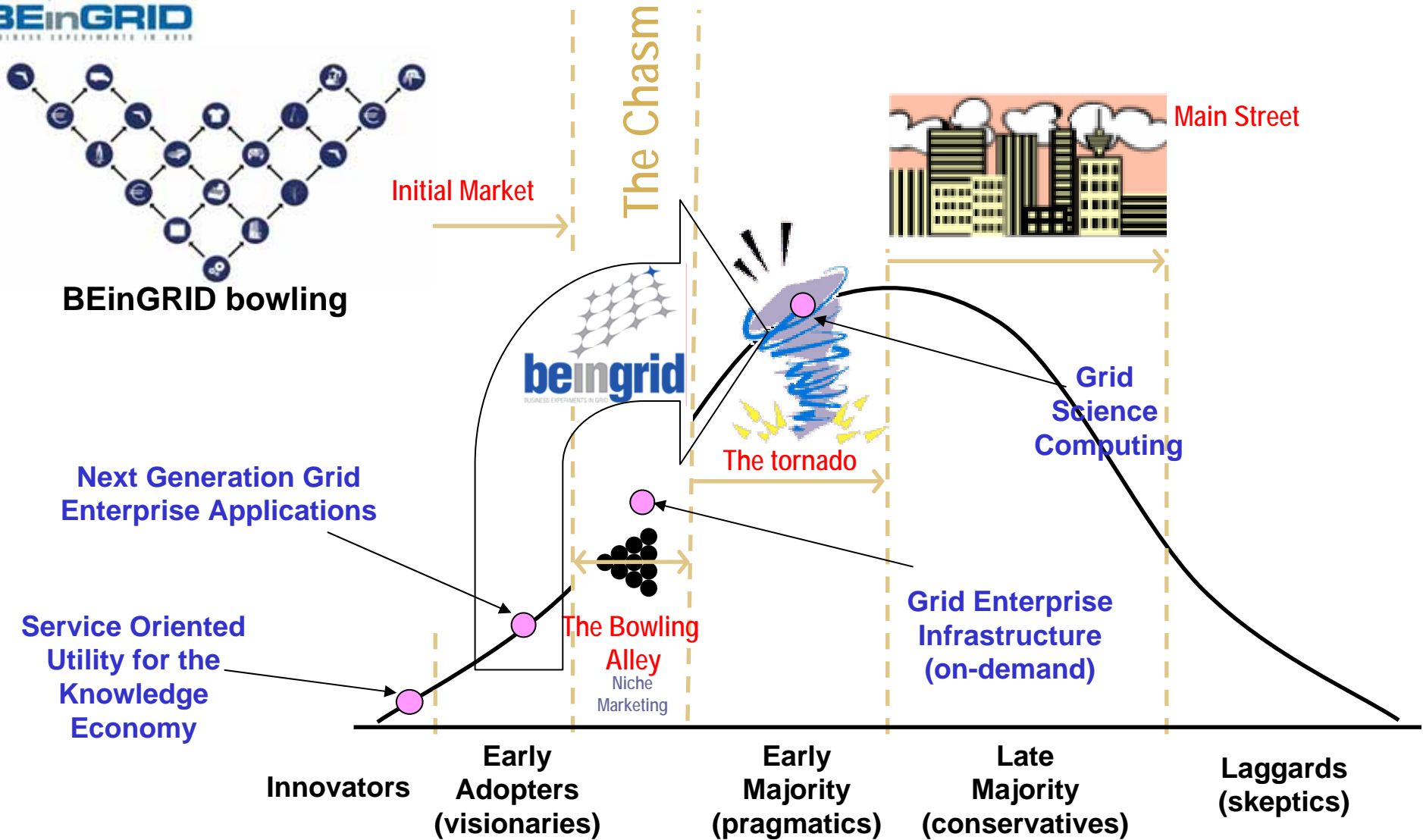
Project Data Sheet



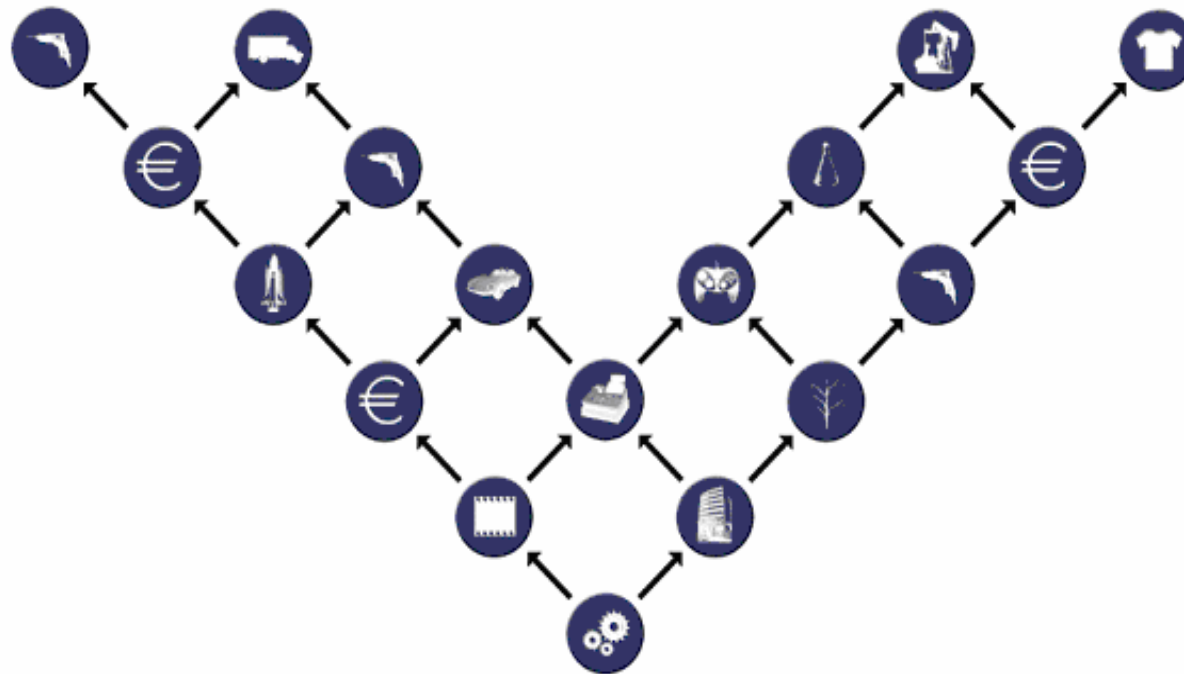
The mission of BEINGRID is to Exploit European Grid middleware by creating a toolset repository of Grid services from across the Grid research domain and to use these services to deliver a set of successful business experiments that stimulate the early adoption of Grid technologies across the European Union.



Grid Technology Adoption Life-cycle



BEinGRID bowling alley – 18 Business Experiments





BE 01 - Computational Fluid Dynamics and Computer Aid Design

- BE01: Use of Computational Fluid Dynamics (CFD) techniques for simulation of airflow within aircrafts or vehicles, forming the baseline for a number of scenarios and applications, including:
 - reliable and optimized simulation of aerodynamics and aeroacoustics
 - the exploration of particle or virus transfer through the ventilation systems of aircraft or a cars.
 - reliable and optimized simulation of fuel circulation
 - fire and smoke simulation in cargo compartments of aircrafts
- Partnership
 - ❖ ICCS/NTUA : Grid technology provider – *BE Coordinator*
 - ❖ Icon Computer Graphics SA : End user
 - ❖ Open CFD : End user
- This Grid pilot will make grid-enable a CFD application into a new computational & data intensive and collaborative platform based on **Gria middleware and GridSphere**



BE02 - Business Workflow Decision Making

- **Film industry undergoing period of rapid change from celluloid to digital processes**
- **Goal**
 - To develop Grid solution to assist digital film production process
 - Focus on improving data management and transfer of digital film data during filming
 - Hence improve business workflow and decision making
- **Partners**
 - EPCC – major EU supercomputing centre – leader of OGSA-DAI project
 - The Hat Factory Ltd – digital film grading and finishing – leading exponent of digital film industry in UK
 - Jo Dunton & Co Ltd – specialist in equipment and services rental to film industry – current flagship project *Harry Potter 5*
- **18 month project will use OGSA-DAI and Globus Toolkit V4.**



BE03 – Visualization & virtual reality

A flexible solution
A new level of performance



A demanding user



A rendering leader

18 months to significantly speed-up realistic rendering via Enterprise Grid (Worldwide Grid Ready)

- Acquire better quality in less time (improve reactivity and promote creativity)
- Towards real-time scene modification and interactive virtual visit



Grid expertise

BE4 – On GRID simulations for Financial Portfolio Management problem solving



The growing complexity of financial markets intensified concerns over reliably measuring financial products' risk exposure. Today, financial operators need a whole risk and evaluation infrastructure at their fingertips, which implies complex systems, technology and data.

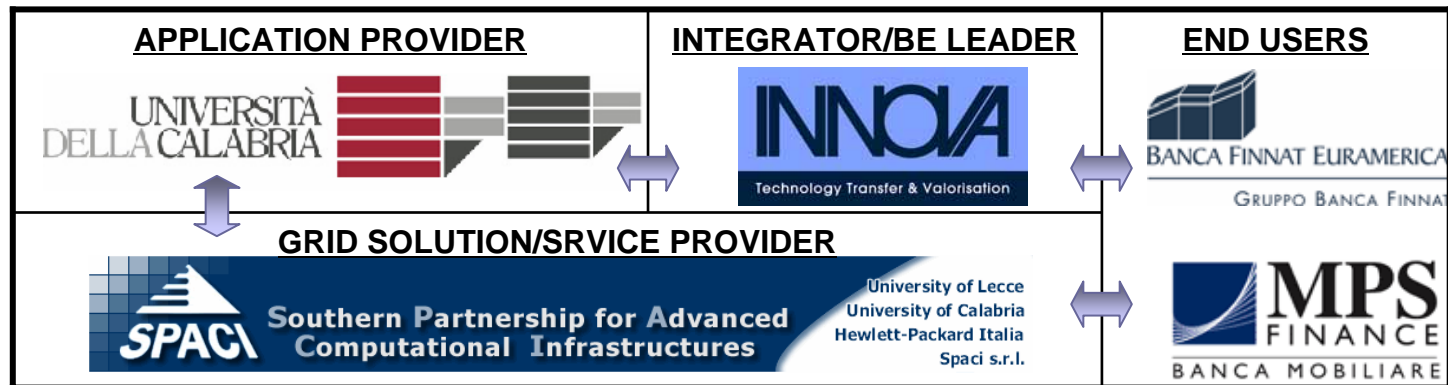
BE4 will design and implement an application, running simulations on a grid infrastructure, to support financial institutes in strategic decisions regarding financial portfolios.

The new application will define the optimal financial portfolio given a predetermined risk level, by simulating financial products' performances in the short term future.

BE STRUCTURE

BASIC INFO:

- Sector: Finance
- GRID MW: Globus
- Duration: 18 months



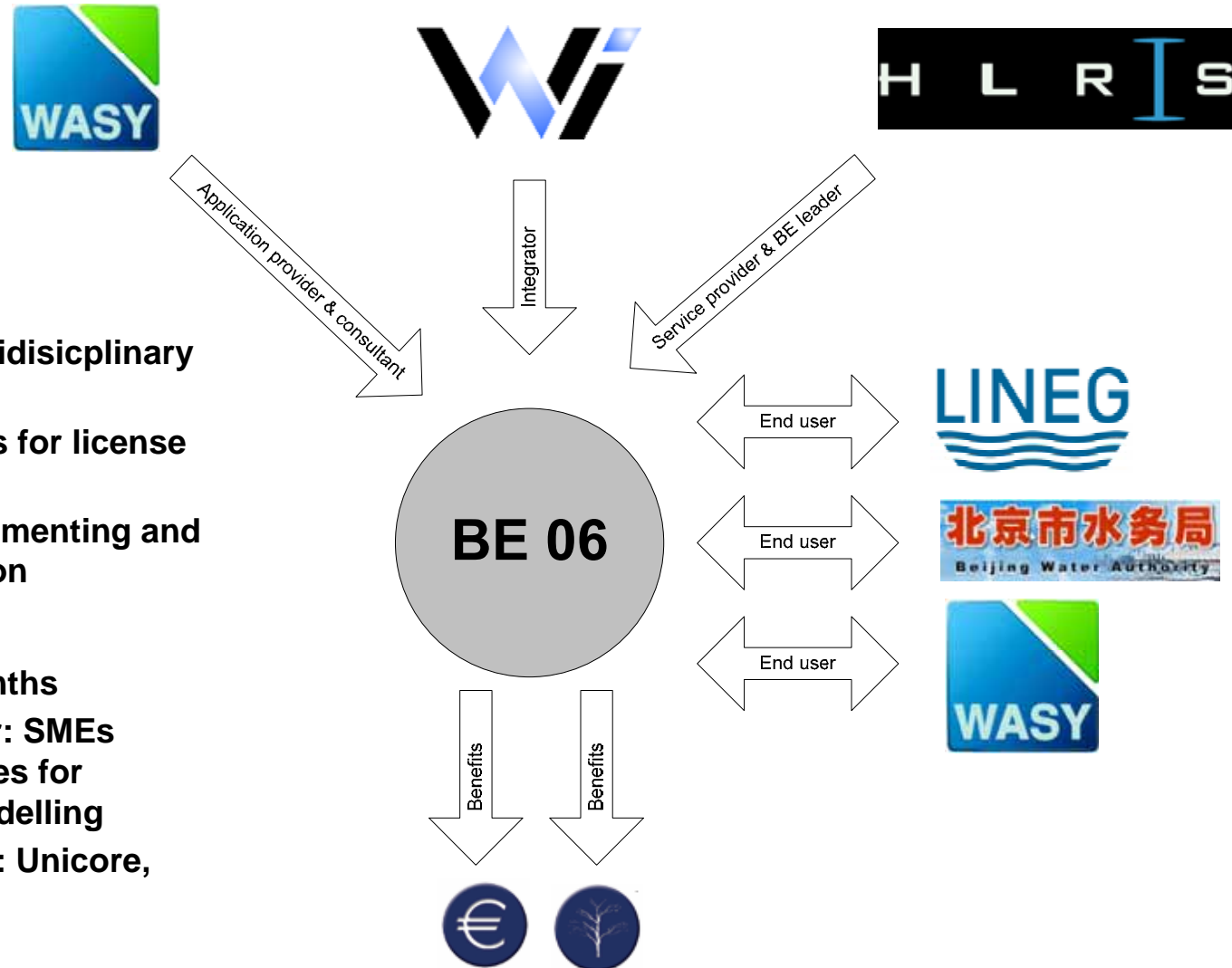
BE5 – Retail Management

- **Summary BE Goals:**
 - GRID-based architecture & sw design environment for Retail Management applications development (Demand Planning)
 - Running in ASP modality
 - Improved application performances in critical CPU-intensive computations
 - through parallelism exploitation
 - Improved control of QoS
 - Cost reduction for application hosting thanks to better scalability and interoperability
- **Duration: 12 months**
- **Economic Sector: Retail Management**
- **Grid middleware: Assist programming environment on top of Globus 4.0**



BE06 – Groundwater modelling

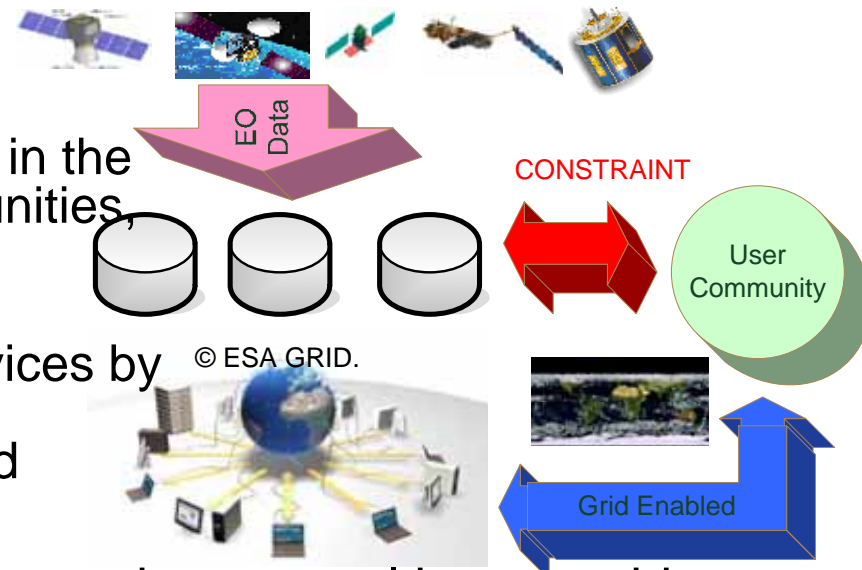
- **BE06 Goals:**
 - Large scale multidisciplinary compute grid
 - Business models for license management
 - Designing, implementing and validating solution
- **BE Details:**
 - Duration: 20 months
 - Economic sector: SMEs providing services for groundwater modelling
 - Grid middleware: Unicore, Unicore/GS



BE07 - Earth Observation Experiment

- Goals:

- Promote and experiment grid in the industrial, institutional communities, with great attention to the involvement of SMEs.
- Add new dimensions EO services by removing some of the current limitations on data access and process.



- Experiment duration will be 12 months => goal is to provide preliminary results in the early stages of the experiment.
- EO sector includes both institutional and private organisations, i.e. meteorological and environmental agencies, health authorities, related industrial providers,...
- GRID middleware: Globus Toolkit (GT4), EGEE gLite, both tested on ESA-ESRIN GRID on demand environment.



BE08 – Integration of engineering and business processes in metal forming

Duration

20 months

Economic Sector

Automotive Supplier Industry, especially small and medium sized enterprises coping with sheet metal forming.

Middleware Baseline

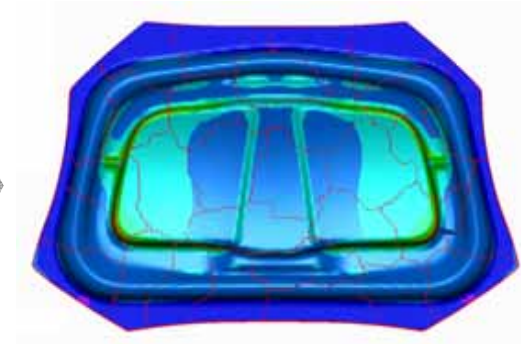
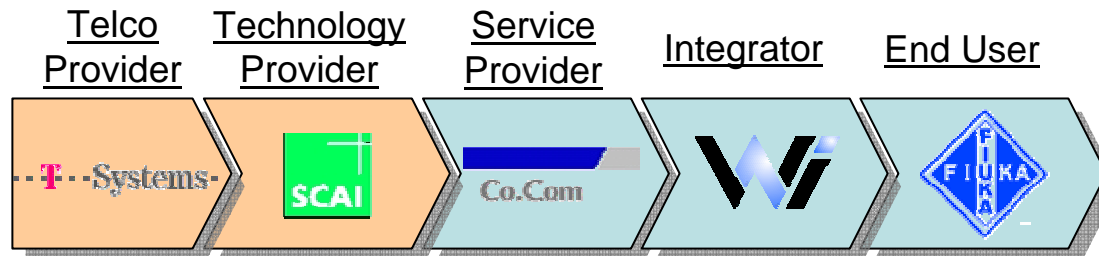
WSRF-Based (Globus Toolkit 4, UNICORE/GS (if available))

Main Goals

Providing costly virtual prototyping techniques (e.g. numerical simulation and optimization) to SMEs for

- Supporting virtual development
- Decreasing Time to Market
- Lowering total cost of ownership for hard- and software systems

Partnership & Value Chain



BE09 – Distributed online gaming

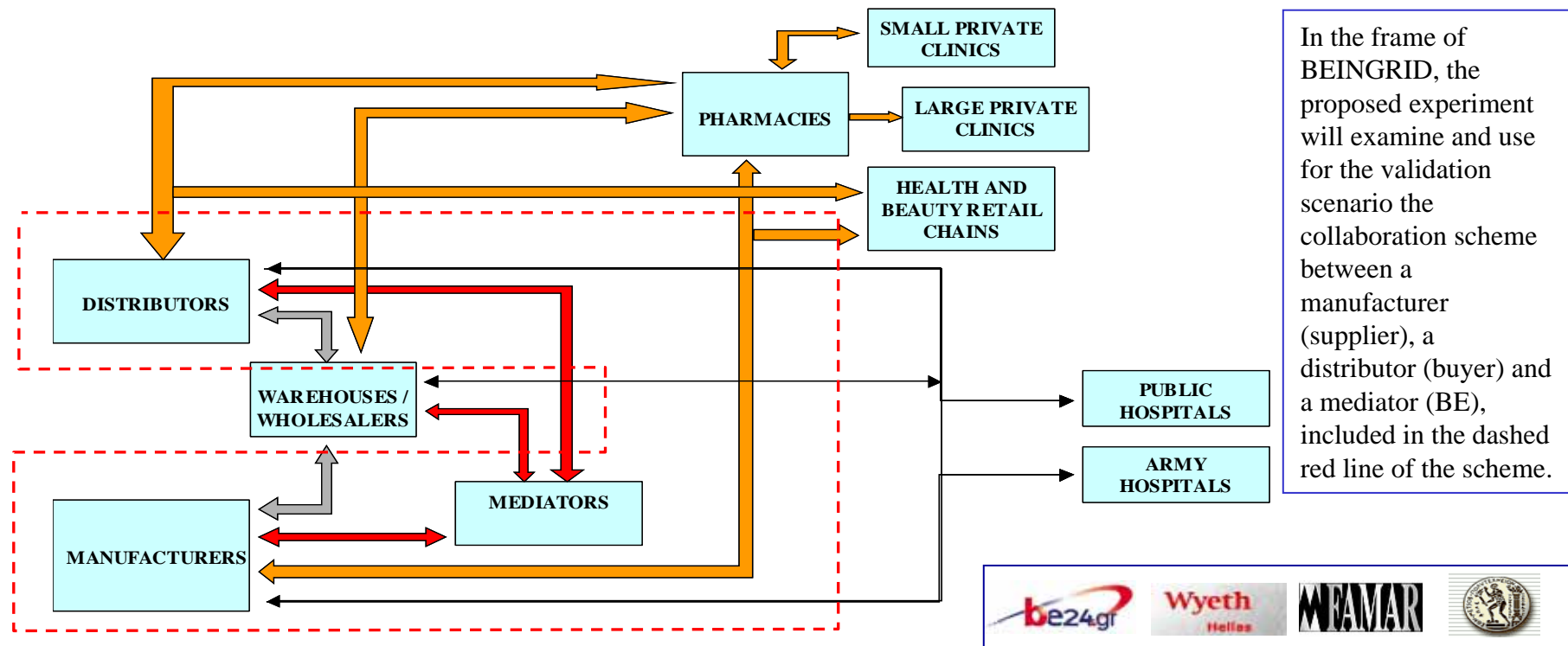
- **What: Distributed application hosting environment:**
 - Application as a managed service – ASP benefits:
 - Provide/ manage/ control own application service
 - Outsource deployment and security management to infrastructure
 - Assessment Pilot - Internet-based gaming: interactive, multi-player, high-performance.
- **How: Grid and Web Services technologies for:**
 - Virtualisation of hosting environment for flexible deployment
 - Standard interoperable infrastructure services for security management
 - Input from EU R&D projects (GRASP, TrustCoM, NextGrid, ELeGI)
- **When: September 2006 – February 2008 (18 months)**
- **Who: Andago, AtosOrigin, BT, CRMPA**





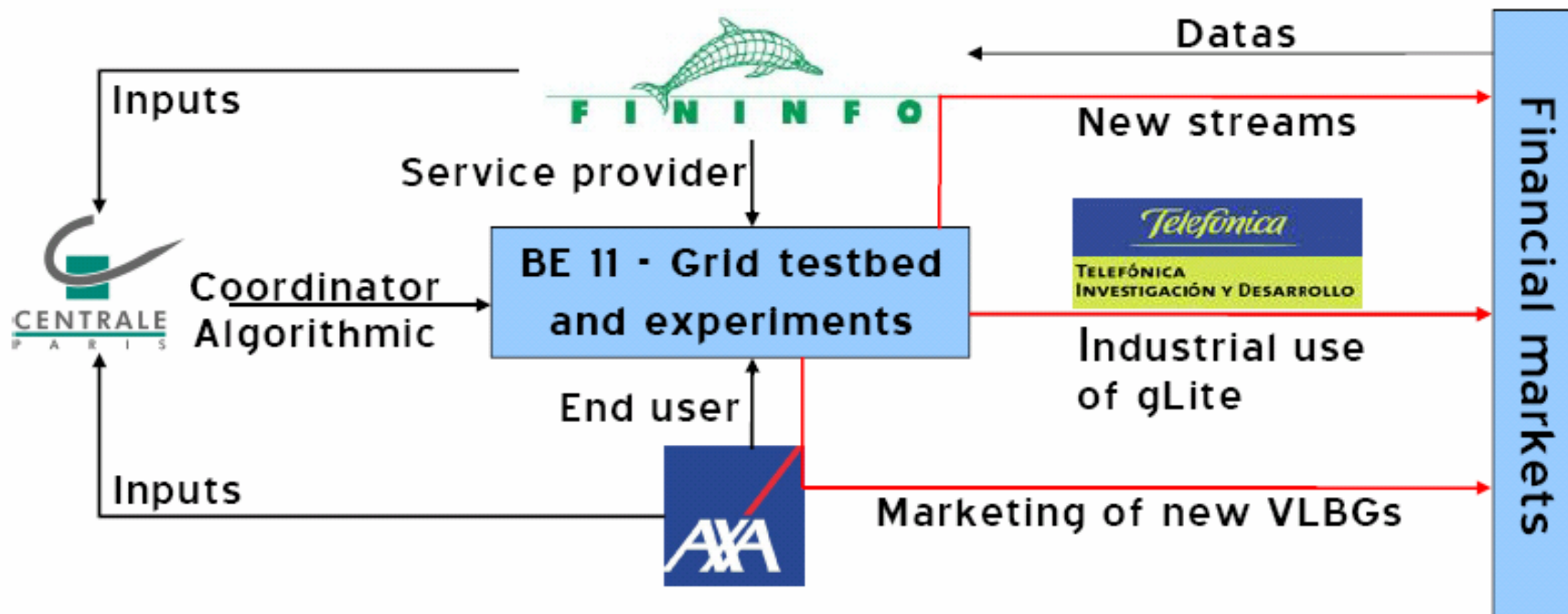
BE10 – Collaborative environment in the supply chain management for pharmaceuticals

The objective of the proposed BEINGRID experiment is to validate a Grid-based collaborative environment in the area of supply-chain management, using a paradigm taken from the pharmaceutical business sector. The specific sector comprises of numerous key business segments, including, pharmaceutical manufacturers, pharmaceutical and medical/surgical supply wholesalers, major pharmacy chains and healthcare providers to begin the process of standardizing the complete, front-end to back-end pharmaceutical supply chain management



BE11 – Risk management

Grid Technologies for time constrained problems arising in finance and insurance sectors



An 18 months experiment to prove the benefits of the Grid for financial products pricing



BE 12 - Sales Management System

Goals:

The application of the most valuable DAIS Grid Technology to the field of the Sales Management System (SMS), focused on food sector, and Customer Relationship Management (CRM) services, focused to the tourism sector.

Duration: 17 months

Management and planning:

Project management : ENEA and Cineca

BE kick off meeting: 3rd July – Bologna

Grid middleware baseline:

OGSA DAI – distributed database access



BE13 - Textile Grid Infrastructure

- **Goals:** to organize a common grid infrastructure between research centers and *textile/clothing* firms, in order to improve production and global resource scheduling and virtual retailing
- **Duration:** 18 months
- **Grid middleware baseline:**
 - UNICORE (GS) – distributed computing
 - OGSA DAI – distributed database access





BE14 – New product & process development



Development of an integrated environment required to develop new products and processes in the Chemistry sector

- **Multiple heterogeneous and widely distributed resources**
 - **Parallel execution**
 - **Coordination**
 - **Databases, computer models, property and cost data, technical reports, and images**
- **Achieved by the combination of two outstanding Grid tools**
 - **GRID superscalar: programming model**
 - **GridWay: grid job manager**
- **Powered by GTv4**
- **Duration: 18 months**



BE15 – Virtual engineering workplace for financial e-services

- **Data Recovery Service (DRS)**
- **Service which provides SME/SOHO with recovery services for business critical applications, information and data.**
- **Business Continuity Management (BCM) is a relevant Topic nowadays with more attention nowadays.**
- **Cross domain service grid**
- **New Financial business services in line with existing services**
- **Project delivers: DRS service, Business Models**
- **4 parties involved:**



BE16 - Ship building

Ship Building

- **Goals**

- Each ship is a unique product
- Design is made under high time pressure
- High need for simulation facilities
- Reduce technological and economic risks
- Migrate compute intensive tasks to ASP providers
- Enable secure co-design between shipyard and suppliers



- **Partners**

Flensburger Schiffbau Gesellschaft 	Center for Maritime Technologies Hamburg 	Fraunhofer SCAI Institut Algorithmen und Wissenschaftliches Rechnen 	DLR Deutsches Zentrum für Luft- und Raumfahrt e.V. in der Helmholtz-Gemeinschaft 	T-Systems Solutions for Research 
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- **Technologies**

- SESIS
- Unicore
- eclipse on OSGi in java



- **Duration: Sep 2006 – Apr 2008**



BE17 - GRILO: GRId experiment on Logistic Optimisation

Goals:

- To assess if recent advances in open GRID technology reached a level of interest for conventional industrial applications
- To integrate the industrial Enterprise Resource Planning systems (ERP) with efficient and fast scheduler/planner based on new generation algorithms

Duration: 14 months

Target Sector: Logistics and Transportation





BE18 – Seismic Processing and Reservoir Simulation



PetroSoft

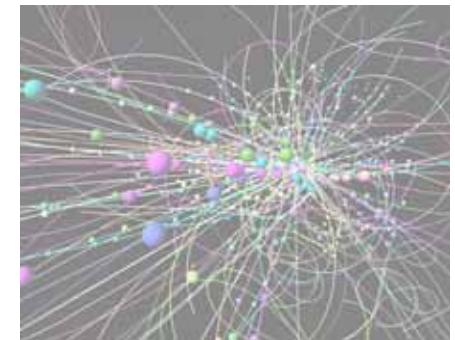
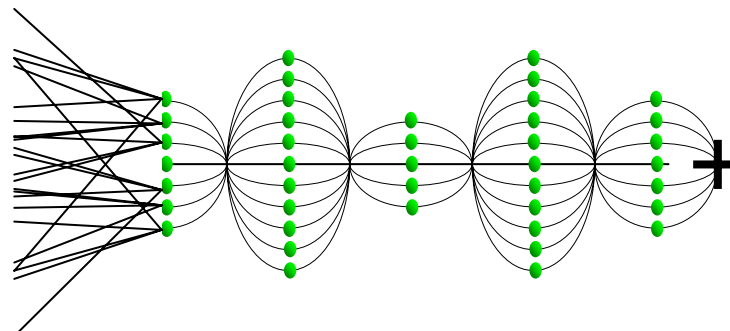


« *Expanding Geosciences On Demand* »

EGEODE is a virtual Organization opened to Research Centers in geophysics and other geosciences from **eGEE**istrial (public-private) and Academic world, thanks to

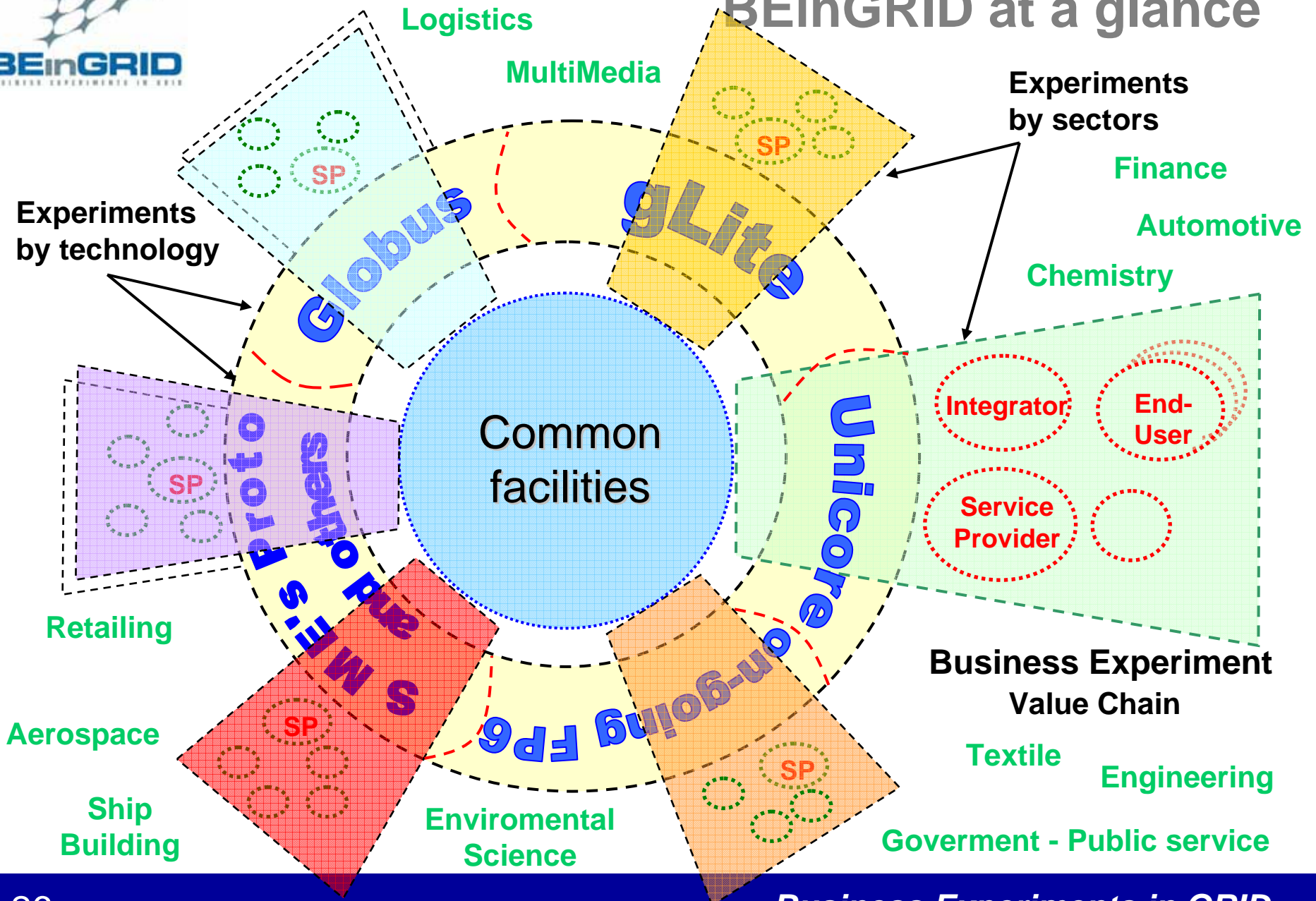
Geophysics and Reservoir Simulation are key technologies for Oil&Gas.

Complex workflows and algorithms

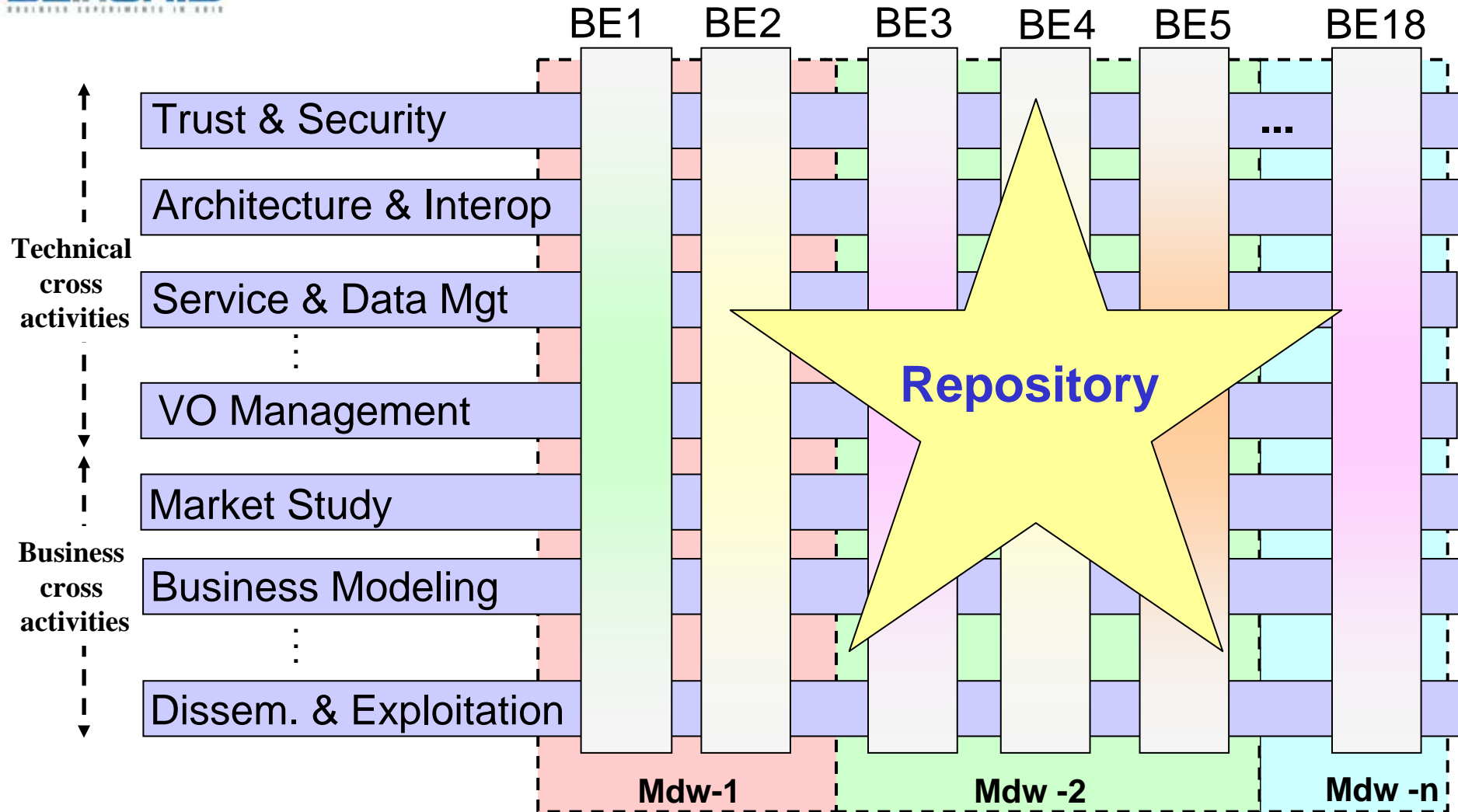




BEinGRID at a glance



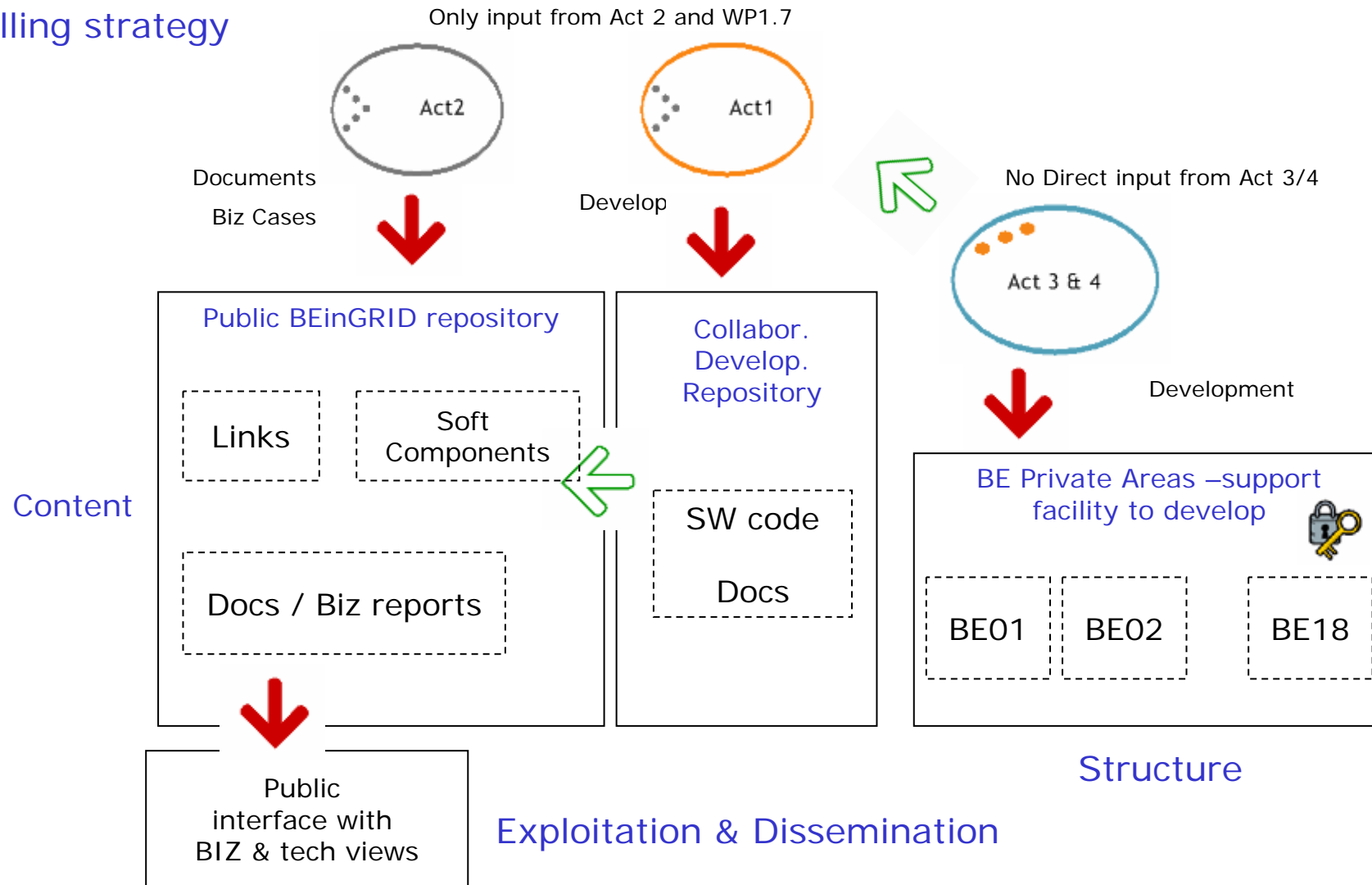
BEinGRID S&T Approach

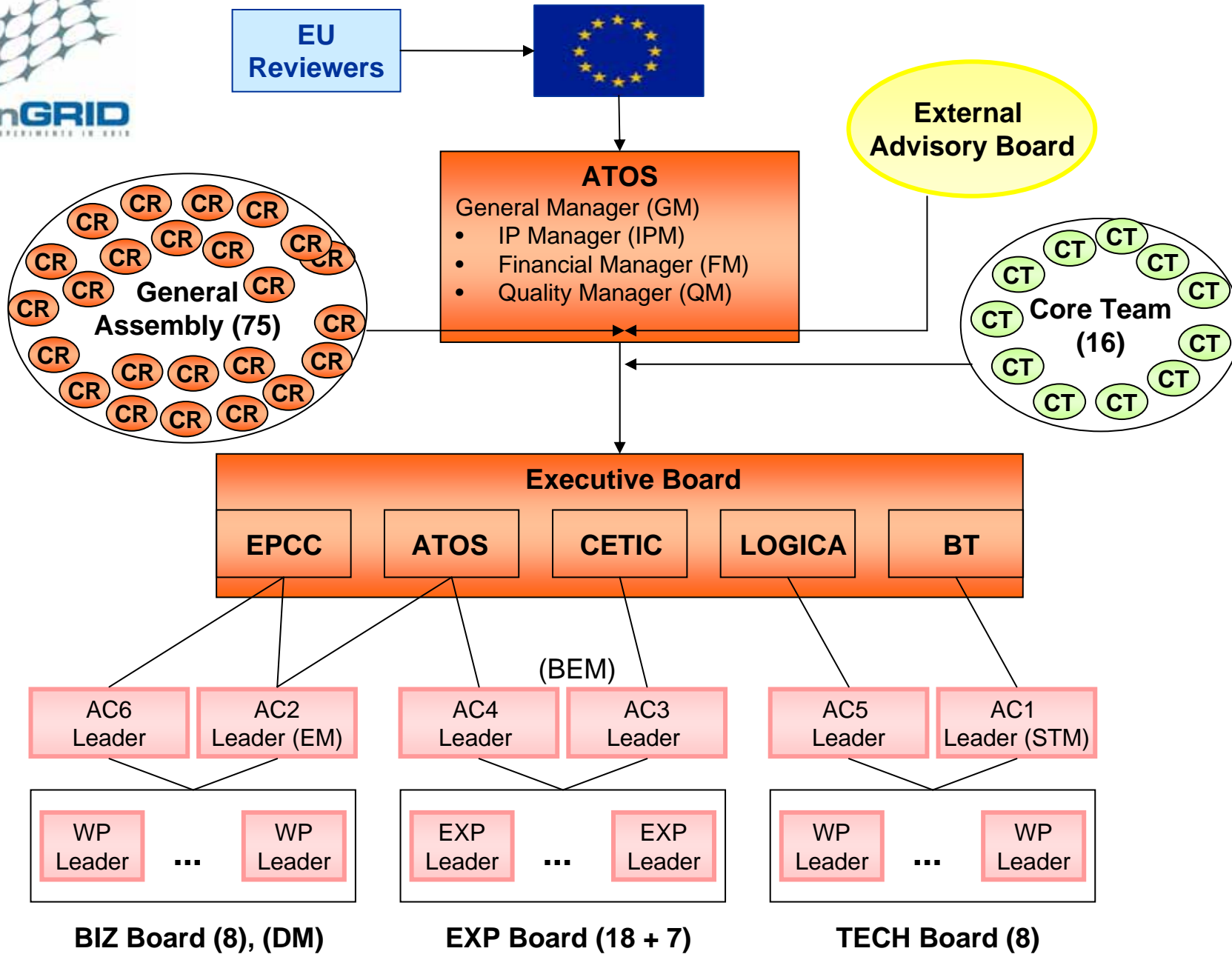


Selected branches: GTv4, UNICORE/GS, g-Lite, GRIA, WS-*

Repository Structure

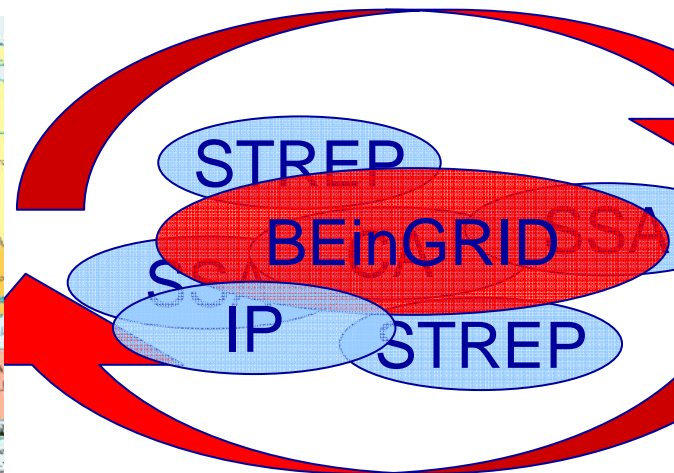
Filling strategy





International Co-operation on Grid Technologies – Target Continent: Asia

- **Proposals leverage and integrate existing initiatives in the focal areas in Europe and the target country**

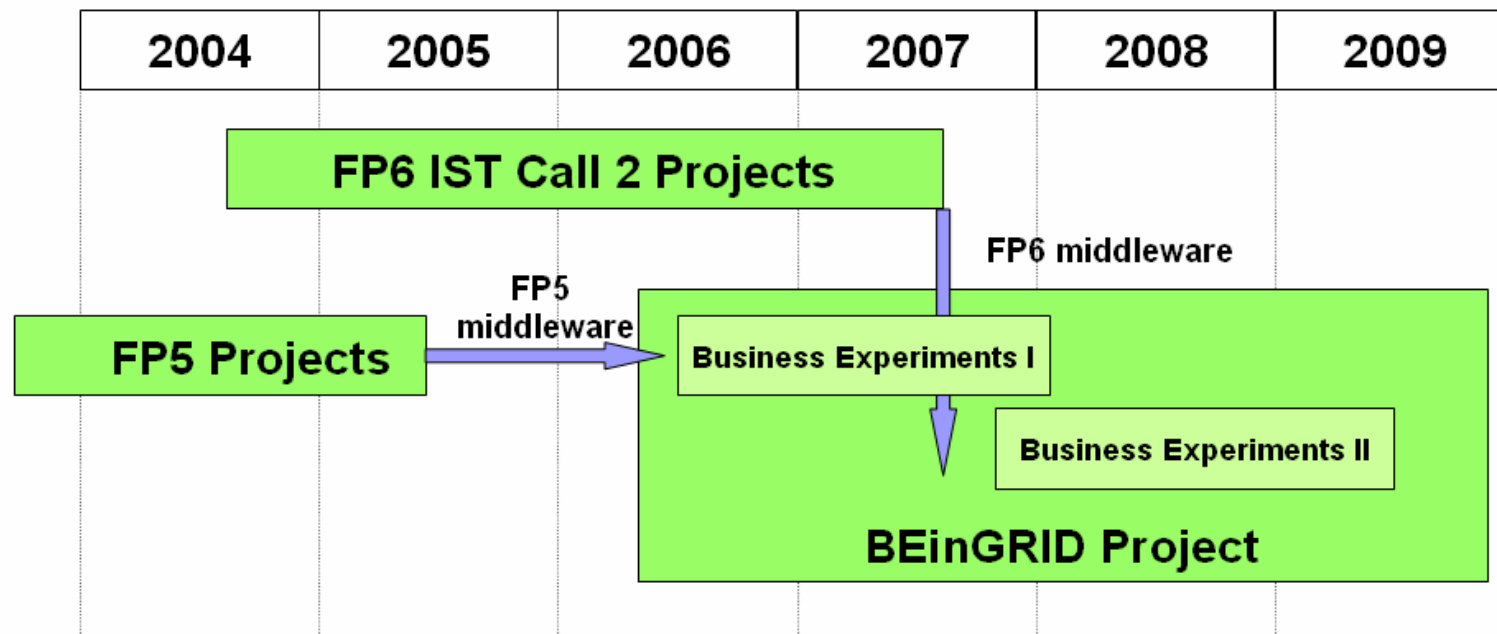


- 1 Chinese partner at this time.
- EchoGRID (ssa)
- Second wave of experiment

2nd wave of experiments... and opportunity for collaboration

There will be an open call to establish a set of 5-6 new Business Experiments

- *One of them could be in collaboration with Korean or Chinese partners*
- *The new BE should last round 12-14 month maximum.*
- *Available 330K€ (aprox) funding per experiment*
- *The BE must be based on semi mature technology, include the full value chain (End-User, Integrator and Serv Provider) and present a preliminary business plan*
- *Open call text available in 8 month aprox*



What is this project about?

