



European Grid Initiative



EGI Blueprint or Do not be afraid of EGI

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EGI

- European Grid Initiative
but also

European Grid Infrastructure

A world leading Grid infrastructure providing services for users organized in Virtual Organizations without any prejudice towards any particular user's group

How to build EGI?

- Bottom up approach
- NGIs – the basic building “bricks”
 - NGIs are in many respects just EGI at national level
 - Recursive buildup
- A whole is larger than its parts
 - However, some coordination is needed to create a whole from parts – **role for EGI.org**

NGI

- National Grid Initiatives to take care of ***National Grid Infrastructures***
- The basic hypothesis:
Each country is interested in organizing its compute and data resources in a Grid
- The EGI concept is valid only if this hypothesis is valid, too
 - This is implication, not equivalence

National Level

- Major players:
 - Users – resources, sharing, collaboration
 - Resource providers – provisioning, efficiency
 - Funding agencies – paying for it
- Also at national level there must be an agreement that Grid provides the highest value for all players
 - Without such consensus the Grid concept may be considered as invalid

National Implications

- There is or will be a national grid infrastructure in each country
- Each such infrastructure has to have some functions and has to provide some services
 - This is independent of the structure or even an existence of any European organization, i.e. the EGI
- Coordination of players at national level

International Implications

- Science does not stop at country borders
 - Therefore sharing and collaboration interesting also at international level
 - International Funding Agencies
 - Support for cross-border collaboration in science
- Based on requests from users NGIs can create bilateral and multilateral agreements
 - Worse than n^2 problem
 - Technologically almost impossible

International Implications 2

- Some kind of coordination necessary
 - Will help to solve the technology challenge
 - Will help to solve the worse than n^2 problem
- And here comes the ***EGI Blueprint***
 - Description of necessary functions and services
 - At NGI and EGI levels
 - Coordination body and role

EGI Blueprint

- Actors
 - NGIs and all who they represent + others
- Functions (details in Deliverable D3.1)
 - Operations
 - User support and training
 - Middleware
- Funding
- Transition
 - How to get there?

Functions and Services

Do not forget the Hypothesis

- National level
 - Primary functions we feel are necessary to be run at the national level
 - They guarantee **the national Grid does exist** and is operational
 - More reflection of the best practices already deployed, **not direct consequence of EGI**
 - EGEE used as a model, but same set of functions and services found in other grids, too, they are not implied by gLite/EGEE model

Functions and Services 2

- International (EU) level
 - Functions and services needed for coordinating national Grids
 - The actual work performed at the national level
 - Here EGEE experience more visible, simply because **it is** the major European Grid today and a model for many others
 - However, the resulting pattern is not specific to EGEE, we believe it is a genuine general model

Funding

- Money and Funding matters
- Again, the Hypothesis helps
 - National funding to run national Grid infrastructures
 - International (EU) funding to put the national efforts together, to support the coordination, to guarantee the coherency of grids at international level

Functions in More Details

- Operations
 - How to run the Grid
- User/Application support and training
 - How to support users
 - VOs and specific communities
 - Help desks
 - Training
- Middleware
 - The glue of the Grid – where to find it?

Operations

- At national and international level
- The Blueprint uses often the word ***mandatory***, however this could also be read as ***necessary***
 - Without these functions/services the Grid will not exist (not EGI in particular, but any Grid infrastructure in general)
- Organization of services goes with NGIs
 - The FTE numbers are taken from EGEE

Man Power Behind Operations

- The services are necessary, but
- The FTEs are illustrational, represent some average man power as currently deployed in EGEE
 - If we believe EGEE is not as efficient as possible, a lot of improvement and reduction of provided FTE numbers is possible
 - However, given the EGEE experience, we opted for conservative approach (higher FTEs)

User/Application Support

- Users are the reason for Grids in general and EGI in particular
 - User support essential
- Several aspects
 - Encourage and help organize new communities
 - Improve efficiency of use for users
 - Particular programs/services support
 - Application gridification

National Level

- Most application support must happen at the national level
 - Close to users
- NGIs must provide the support again regardless of EGI (the hypothesis again)
 - However, some aspects of support of international communities pose the same worse than n^2 problem mentioned earlier

International Level

- Coordination of national efforts to increase efficiency
 - Help desks – simplified entry for users
 - Gridification (potentially larger teams)
 - International VOs creation
- Specialized Support Centers
 - Put together people working on a specific problem/area

Training

- Mostly national
- Coordination at international level
 - Large training events, international summer and winter schools, ...
 - Expert sharing
 - t-Infrastructure sharing
 - If a specific t-Infrastructure built and used
 - Training and educational material repositories

Middleware

- In fact the most controversial issue
- Resource sharing requires some agreement on provided services and functions
 - Means less flexibility, loss of (some) freedom
 - Standards are the way to go
 - However, the standards are evolving, too
- Universal Middleware Distribution

EGi.org

- EGI the Organization
- The body that takes care of the coordination at international level
 - Reasonable size
 - Coordinating lot of aspects needs appropriate man power
 - Again, the Blueprint proposal based on existing experience, but still just a **proposal**
- Current proposal around 50 FTEs

Funding Again

- EGI.org needs some money to run
- EGI is NGIs plus EGI.org
 - National and international aspects
- National funding behind NGIs
- International funding to support (not fully cover) the international coordination
 - Therefore, EGI expects to be funded by NGIs primary, with support from EC for int. activities

Some Numbers

- 900 FTEs for EGI
 - From which around 50 FTEs for EGI.org
- Coordination not only at EGI.org
 - NGIs must give some of the “pure” freedom in their activities to make sure the EGI works
 - This may lead to (temporal) inefficiencies at national level (providing services that are not at a moment necessary at the national level)
- Therefore, it is reasonable to expect some EC funding not only for EGI.org directly → 20 MEuro/year

Transition

- Some user communities already use existing Grids
- Some existing Grids invested a lot into their setup and operations
- We need to guarantee these investments not to be lost
- Transition from existing grids to EGI model

Transition 2

- EGEE is often understood both as the infrastructure and user communities that use it
- It may help to separate the requirements
 - The continuity is more important for users (e.g., those working with LHC experiments)
 - Such communities has specific requirements on the infrastructure, EGI must look for the **lowest** and highest **common denominator**

Summary

- No reason to fear the EGI
- It is just a culmination of national efforts
- The functions and services a hint for what is necessary to provide to user communities
- EGI.org just a small coordinating body
 - Governed by NGIs and through them by users and resource providers (and thus indirectly by funding agencies, too)

**EGI to materialize needs national commitment
for Grids in general, not EGI in particular**

Cyprus



Israel



European Grid Initiative



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