# TAPAS

## Team to Assist Porting Applications to e-Science infrastructures

- Proposal to be submitted to EC call:
  - INFRA-2010-1.2.2 (Simulation software and services)
- TAPAS project contact:
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**Abstract**

After one decade of research, development and improvement European cluster grids, desktop grids and their enabling middleware reached production quality and they provide high performance, high throughput and collaborative computing services for an increasing scientific user base. Grid providers and developers now have a better understanding of what grid infrastructures are best suitable for and which e-Infrastructure could provide the most benefit for a given scientific application. While grid user communities in the past evolved together with the middleware, new communities can establish applications on stable systems and can keep applications more independent from grid implementations.

On the other hand, a negative outcome of the diversified development of grids was the large number of technologies and tools that communities now should know, understand and use to become self-supportive grid application developers. Today it is still very hard for a new community to pick up grid knowledge; to identify relevant services, best practices and technologies; to understand where to focus efforts in order to efficiently enable and adapt its own applications to grids.

TAPAS will identify and document those “off the shelf” use cases where the EGI grid, proved to provide competitive solutions for e-Science and will exchange such best practices with desktop grid and supercomputing grid providers. TAPAS will provide technological consultation, technical application porting support and focused training around these EGI use cases and around emerging new ways of EGI usage. Clients of TAPAS can be individuals, groups, scientific and business collaborations who would like to gain and establish technical understanding on “end-to-end” services that grid middleware together with high level tools provide; communities who require technical help on how the various grid services fit to their applications and want to enable these applications on grids (primarily on EGI).

With its technology-centric services TAPAS will be an important asset for EGI to broaden its user base, to have a dedicated group that users can rely on during their very first and during more advanced practical interaction with the infrastructure.

**To achieve these goals TAPAS will**

- Actively search for and interview emerging communities and new members of established communities in order to offer e-Infrastructure consultancy and application porting support services.
- Provide technical application porting service for existing and new users of EGI. The service includes technical analysis, planning, specification, focused training and practical development of user applications on cluster grids build with ARC, gLite and UNICORE middleware. Members of the TAPAS consortium have expertise also on Globus, BOINC and supercomputing applications and will be able to advice on those topics. The service will run in parallel with similar porting services of Scientific SSCs, but the TAPAS porting service will
    - focus primarily on new communities, and
    - will be able to serve the generic (grid-level) porting needs of Scientific SSC members.
- Identify those generic application use cases where EGI grid can be used efficiently at a production scale and produce “off the shelf” reusable solutions for them
    - The use cases will demonstrate the most typical and successful application patterns on EGI and will help new communities (research groups, SSCs, NGIs) to establish their own porting expert groups.
    - The use cases will focus on the technical details of grid utilization and will provide “off the shelf” solutions for those who wish to enable applications on grids in these ways.
    - The use cases will represent a permanent and continuously growing asset for the EGI user community and will serve as a basis for a sustainable grid application developer community. New and existing scientific communities can establish and expand their grid expert team more efficiently by these technical use case documents.
    - The use cases will provide exemplars for application developers and trainers who intend to provide reusable solutions for EGI user communities.
- Lower grid usage barriers for individuals and communities by further developing some of the generic porting tools and generic grid application development environments. The development will be driven by the clients of the TAPAS porting services, thus it will assure that the newly developed capabilities will empower applications.

## Project partners and project duration

Members of the TAPAS proposal:

| **Name** | **Short Name** | **Country** |
|---|---|---|
| Hungarian Academy of Sciences<br><br>Computer and Automation Research Institute *(coordinator)* | MTA SZTAKI | HU |
| ISTITUTO NAZIONALE DI FISICA NUCLEARE | INFN | IT |
| Greek Research Network | GRNET | GR |
| University of Westminster | UniWest | UK |
| University of Warsaw | UniWars | PL |
| National Information Infrastructure Development Institute | NIIFI | HU |
| Helsinki Institute of Physics | HIP | FI |

- Estimated project start date and duration:
  - Earliest start date: 1st May, 2010
  - Duration: 2 years