



**International Conference**  
1ST International Conference on Innovations, Recent Trends and Challenges  
in Mechatronics, Mechanical Engineering and New High-Tech Products  
Development  
**MECAHITECH'09**

Bucharest, 8-9 October 2009

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**Sectoral Operational Program "Increase of Economic Competitiveness"**  
**- Co-funded by European Regional Development Fund**  
**"Investing for Your Future"**

**Resource Center GRID-BENCHMARKING for analysis, evaluation,  
data processing to increase the competitiveness of organizations to  
achieve high performance/ GRID – BENCHMARK**

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The essential role of scientific research and technological development to increase economic competitiveness has been recognized and affirmed including the recent European Commission Communication "More Research and Innovation - Investing for Growth and Employment" EC COMM (2005) 488 final/ October 2005.

Scientific research, technological development and innovation represent the heart of the economy based on knowledge, the key driver of development, competitiveness and job creation. For Romania, the need to boost economic competitiveness, particularly in the period 2007-2013, which is the first stage of post-accession process, requires the essential requirement of the technological gap separating it from the rest of the EU Member States, particularly in the context of increased rate implementation of the revised Lisbon Strategy. This requires that the major objective for Romania the achievement of a dynamic and competitive economic environment, able to assimilate and develop high technology areas and to meet the requirements of long-term strategic development, by developments in the global economy based on knowledge.

From this perspective, Romania is directly interested to develop capacity and increase the competitiveness of the research-development system and innovation.

In this moment comes Benchmarking applied to organizations that are part of the research. Also, Benchmarking will be a tool in **assessing the achievement of policies and strategies** at national level in research-development and innovation domain.

After European statistics, Romania participates in international exchanges



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significantly to services, food and beverage, light industry and metallurgy.

**Analysis made by the proposed project team have concluded that there are other areas in which signals arisen in recent years indicate important participations of others areas at international trades, products and techniques that value added is higher. These are information technology, complex products of precision mechanics and electrical industry (31 groups, 34 NACE), electric drives power to ensure energy savings and increased productivity, petrochemicals, special electronics.**

**Already, after the 2007 Eurostat report these areas have made exports of several billion euros.**

**In this sense, applying the concept of benchmarking to these areas, recording and reporting items of interest that can be developed, may be a response to the troubling issue for many years to the Romanian economy - and does not have an answer - which are the niches in which chances of Romanian economy can be maximized?**

In this way, will be referred to sectors with high added value, those technologies with high productivity and that consume as low energy.

In Romania, methods and indicators specific to benchmarking can be used in the four directions listed below:

- the impact of RTD on competitiveness;
- the scientific and technological productivity;
- promoting RTD culture and understanding of science by the society;
- innovation (including intellectual property, patents, etc.)..

**Research will mainly consider the national information infrastructure, the creation and development of Internet access, to GRID centres sites of economic organizations, development of databases, development of indicators for evaluation, analysis, software processing of results preparing organizations hierarchy based on performance.**

The database will take about 4,000 organizations, CDI units and SMEs which are expected to have high speed internet access. Following project, it will create seven resource centres that will provide a RO-BENCHMARKING Virtual Organization. This structure type Grid resource center will have a number of dedicated computers. These are computers that use an operating system (LINUX / WINDOWS / SOLARIS) and which are configured as a specialized entity (CE - computing element, WN - working nodes, SE - storage element, UI - user interface, etc..). They are centrally managed, require a dedicated maintenance and should have peak performance, both as memory and the speed.

GRID-BENCHMARK will use a middleware (installed over operating system) specific Grid, allowing the use of local resources (local node), but mainly to provide access to distributed Grid resources using the INTERNET external link (provided by RoEduNet).

Certification and use of access systems based on certificates issued by recognized CAs and RAs have been already realized in order to run the project.



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**National Institute for Research - Development for Mechatronics and Measurement Technique/ INCDMTM**, based on Pantelimon road 6-8, 2<sup>nd</sup> district, Bucharest, runs from the date of 11.05.2009, the project "**GRID - BENCHMARKING resources centre for analysis, evaluation, data processing to increase the competitiveness of organizations in order to achieve high performance**" co-funded by the **European Regional Development Funding** under contract no. 45 concluded with the **National Authority for Scientific Research, as Intermediate Body (IB), on behalf of and for the Ministry of Economy (ME), as Managing Authority (MA) for the Operational Program "Increase of Economic Competitiveness" (POS CCE). Priority 2: Competitiveness through Research, Technological Development and Innovation. D2.2: Investments in RDI infrastructure and administrative capacity. O2.2.3: The development of networks of RD centres coordinated at national level and connected to the European and international profile networks (GRID, GEANT).**

**Code SMIS - NSRF: 2732.**

**The total project value is 1906022 lei, of which financial assistance grant is 1820000 lei.**

The project is implemented in the area of Bucharest for a period of 24 months.

**The project's objective is** to create a Grid resource center for analysis, evaluation, data processing and increase the competitiveness of organizations to achieve high performance, in order to provide convenient access to various categories of users to large computing resources and software applications this area.

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