

## **Short presentation of UVT team activities in the field of Grid technologies and applications in the period 2007-2008**

Started in 2003 with the preliminary studies in the frame of national program (INFOSOC), the activity of the research group from Computer Science Department of the West University of Timisoara has evolved from a passive to an active position at international level.

The period 2007-2008 is marked by the activities related to the national and European Grid infrastructures and the development of several applications and tools.

Related to the infrastructure most significant activities are:

1. participation in the RO-Grid activities ([www.rogrid.ro](http://www.rogrid.ro));
2. inclusion and maintenance of the department's cluster in the European SEE-Grid-II and SEE-Grid-SCI Grid-based infrastructures ([www.see-grid.eu](http://www.see-grid.eu), [www.see-grid-sci.eu](http://www.see-grid-sci.eu));
3. inclusion and maintenance of the department's cluster in the European EGEE-II and EGEE-III Grid-based infrastructures ([egee2.eu-egee.org](http://egee2.eu-egee.org), [www.eu-egee.org](http://www.eu-egee.org));
4. inclusion and maintenance of the second cluster in the European SCIENCE Grid-based infrastructure ([www.symbolic-computation.org](http://www.symbolic-computation.org));
5. inclusion and maintenance of the department's cluster in the national GridMOSI Grid-based infrastructure ([www.gridmosi.ro](http://www.gridmosi.ro));
6. start-up of a new Romanian Grid-based infrastructure connected to ESA's G-POD infrastructure (European Space Agency – Grid on Demand Processing initiative) in the frame of ESA-PECS project GISHEO: On demand Grid services for High Education and Training in Earth Observation ([gisheo.info.uvt.ro](http://gisheo.info.uvt.ro)).

Related to the teaching and training activities the most relevant activities were related to:

- lectures and labs for PhD students concerning Grid computing ([web.info.uvt.ro/~petcu/grid.html](http://web.info.uvt.ro/~petcu/grid.html))
- organization of the GridTDT-2: 2nd edition of Grid training days in Timisoara (EGEE-II event: [web.info.uvt.ro/~petcu/gridday.html](http://web.info.uvt.ro/~petcu/gridday.html))
- invited talks [ISPDC07-1, SACCS07-3] and dissemination of teaching activities [DSOnline08-1, DSOnline08-2, IDC08]

Related to the dissemination activities, the most significant events were:

- a) organization of GridCAD: 1<sup>st</sup> and 2<sup>nd</sup> Workshop on Grid Computing Applications Development in 2007 and 2008, in the frame of the international symposium SYNASC
- b) participation of the team members at several Grid-related international events e.g. EGEE conferences [EGEE07]

The most comprehensive activity in the field was the research one. The most relevant results are the followings:

A. Grid tools:

- development of a tool for the automated generation of clients for Web and Grid services [ISPDC07-2]
- development of GOC – Grid Operating Center [SACCS07-2, PDCN08] for job submissions
- development of the workflow-based tools [ICCS08, ISPDC08] for the composition of Grid and Web services [SYNASC07]

B. Grid applications:

- development of Grid services wrapping [SACCS07-1, TranCom08] for:
  - a) several computer algebra systems [PPAM07, SCPE08] in the frame of SymGrid [EUROPAR07]
  - b) computational fluid dynamics [TranCom07-2]
  - c) evolutionary computing simulators [CSCS07]
  - d) image processing tools [TranCom07-1, ACMOS07, IDAACS07, IntJCom07]

- e) expert for ordinary differential equations [SEPADS08, ECIT08]
- development of DEMO-G, Grid-version of a multi-objective optimization tool, in the frame of GridMOSI [AMCSIT07, SCICOM07] and coupling of DEMO-G with a CFD code for solving a practical problem [IMCSIT07, PARA08]
- development of Grid-based services for digital libraries [AXMEDIS07, CONTI08]

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