



**Project no. FP6-034442**

## **GridCOMP**

**Grid programming with COMPONENTS : an advanced component platform  
for an effective invisible grid**

**STREP Project**

**Advanced Grid Technologies, Systems and Services**

D.DIS.06b – Yearly plan for using and disseminating knowledge

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<b>Dissemination Level</b>		
<b>PU</b>	Yearly plan for using and disseminating knowledge	<b>PU</b>

Keyword List: dissemination, conferences, publications, website

Responsible Partner: Patricia Ho-Hune, GEIE ERCIM

# 1 Use and Dissemination plan

One of the main objectives of GridCOMP consists in disseminating of the project achievements.

The dissemination activities fall into different categories, depending on the main objective of a specific activity, its contents and the expected recipients.

## **GridCOMP website**

The project website is regularly updated and maintained (GridCOMP meetings, deliverables, etc). <http://gridcomp.ercim.org/>

Moreover, following the recommendations of the Project officer and the reviewers after the first annual review, new web pages have been prepared and included into the website in order to provide further information on GridCOMP vision, highlight GridCOMP use cases, and project end results, etc.

## **GridCOMP Intranet BSCW** - <https://bscw.ercim.org/bscw/bscw.cgi/112260>

The intranet BSCW is continuously used to post and retrieve all the internal documents necessary to support the collaborative work in the project

## **First GridCOMP workshop**

GridCOMP consortium organised a workshop and a tutorial on Grid Component Model (GCM) on 31 October 2007 in Beijing. This event was part of the GRIDs@Work week, held at the Computer Network Information Centre (CNIC) facilities, Beijing, China. The GRIDs@Work week, a joint Chinese-European event, was co-organised by ERCIM, INRIA and ETSI, in cooperation with CNIC, and with the support of GridCOMP and the EU FP6 projects, EchoGRID and Bridge. More than 100 delegates from China and Europe attended this event. During the GridCOMP workshop, the latest results produced by all GridCOMP partners were demonstrated. The goals of the workshop consisted in explaining the basic features provided by the GCM programming model and its implementation in ProActive, as well as showing the application and the benefits of using the GCM in several use cases and address the challenges and opportunities of the future perspectives. During the ProActive/GCM tutorial, more than thirty students participated to the training sessions.

ERCIM and INRIA are preparing with the support of EchoGRID the next GridCOMP meetings in the autumn. This event will be held in Sophia Antipolis at the premises of INRIA, in France, from 20 October to 24 October 2008 in conjunction with the V GRIDs@Work week which is organised with ETSI, CNRS and I3S.

In order to promote and disseminate this event, a flyer has been created by ERCIM with the collaboration of INRIA and ETSI.

All details and information on this future event are available on the GridCOMP website at: <http://gridcomp.ercim.org/content/view/36/16/> and ETSI web site <http://www.etsi.org/plugtests/GRID2008/GRID.htm>

## **GridCOMP Achievement sheet for the FP6 Brochure**

The unit D3 "Software & Services Architectures and Infrastructures" will publish a brochure with the results of FP6 Software and Grid projects next September 2008. This brochure will

contain an achievement sheet for each FP6 project currently in D3 Unit, and therefore the Commission and asked us to produce the GridCOMP results sheet for 20 May 2008.

This exercise of producing the achievement sheets is for the benefit of both communities (Software & Grids) to exchange information on concrete project results and to foster closer collaboration between the two communities in view of the forthcoming FP7 calls.

The final version of the FP6 project brochure will be published for the "EC Concertation meeting" in September 22-23, 2008.

The GridCOMP results sheet is available on BSCW at

<https://bscw.ercim.org/bscw/bscw.cgi/422687>

### **Standardisation**

Following contacts initiated with the ETSI standardization body during the first year, INRIA has pursued the GCM standardization in this way. As a first step, INRIA sent the table of content and the scope of the "GCM Interoperability Deployment" technical specification to the ETSI Grid mailing list in July 2007. Then, a first technical draft was made available in September 2007 and was presented by Denis Caromel at the GridCOMP annual EC review and at the ETSI TC Grid #4 meeting on 20 September 2007. Taking into account the feedback and comments from the meeting attendees, an updated version was presented at the ETSI TC Grid #5 meeting on 28 November 2007. The following work item "GCM Interoperability Application Description" was submitted early December 2007 to the ETSI Grid mailing list.

Meanwhile, ETSI also organised TC Grid ad Hoc meeting in Beijing, on 1 November 2007 during the GRIDs@Work week, where Denis Caromel gave a presentation of the GCM.

During the ETSI TC Grid #6 meeting on 19-20 February 2008, progress on the "GCM Interoperability Deployment" was presented and possible exploitation opportunities were discussed. A plan for completion of this technical specification was decided.

In addition to the "GCM Interoperability Deployment" work item, the "GCM Interoperability Application Description" work item proposed by email in December to the Grid mailing list was accepted during the ETSI TC Grid #7 meeting in April 2008. This meeting was also the opportunity to discuss the promotion of GCM to the finance sector as suggested by the TC Grid chairman.

Eventually, all these efforts were successful and led to the official approval of these two work items as ETSI standards at the ETSI TC Grid meeting #8, in June 12 (with support from industrials such as BT, FT-Orange, Nokia-Siemens, Telefonica, NEC, Alcatel-Lucent, Huawei).

Moreover, 2 new Work Items have been approved towards standardization:

- GCM Fractal ADL
- GCM Management API (Java, C, WSDL)

In addition, a presentation and a demo on the GCM standardization were also given during the 4th e-Infrastructure EC concertation meeting on 6th December 2007 at ETSI.

Denis Caromel also wrote a paper reporting on GridCOMP efforts towards GCM standardisation and this paper was sent to the Project officer in October 2007. This paper titled "GridCOMP and CoreGRID are standardising the Grid Component Model at ETSI" was published on CORDIS in the section named "News & Publications" / "News" ([http://cordis.europa.eu/fp7/ict/ssai/news\\_en.html](http://cordis.europa.eu/fp7/ict/ssai/news_en.html))

## Showcasing at OGF 23

Some GridCOMP partners, namely INRIA, UoW and UNIPI participated in the CoreGRID Industrial Showcase during OGF-23 in Barcelona on 4-5 June 2008. The GridCOMP prototypes were demonstrated to OGF 23 attendees and to the European Commission's representatives.

## Presentations

Several presentations were performed during this reporting period.

- Yulai Yuan and Le Du from Tsinghua University presented GCM/ProActive during GCC 2007 at Xingjiang, China on 2 August 2007.
- V. Getov co-chaired the 2<sup>nd</sup> ACM HPC-GECO/CompFrame Workshop as part of the OOPSLA Conference, Montreal, October 2007.
- D. Caromel presented the GridCOMP project at FMCO on 24-25 October 2007 in Amsterdam.
- Marco Danelutto gave a presentation of the GridCOMP project at the EchoGRID workshop in Beijing on 29 October 2007.
- Several presentations were performed at “ProActive/GCM user group” workshop on 31 October 2007 in Beijing, China.  
See URL: <http://www-sop.inria.fr/oasis/plugtest2007/ProActiveGCMUserGroup.html>
- D. Caromel gave a talk about ProActive/GCM at Tsinghua University, Beijing, on 2 November 2007.
- D. Caromel gave two talks on ProActive/GCM and GCM standardisation at the 4<sup>th</sup> e-Infrastructure EC concertation meeting on 6<sup>th</sup> December 2007 at ETSI facilities in Sophia Antipolis, France.
- D. Caromel gave a presentation titled “Bridging Distributed and Multi-Core Computing: ProActive for Parallelism and Grids” on ProActive / GCM at IBM research facility in Zurich on 22 April 2008.
- D. Caromel gave a keynote talk titled “Strong Programming Model for Strong Weak Mobility: The ProActive Parallel Suite” at the 9th International Conference on Mobile Data Management (MDM'08) which was held in Beijing, China, on April 27-30, 2008
- Y. Wu from Tsinghua University presented the GridCOMP project at Technology University of Delft, Holland, on 1 May 19 2008 during his visit related to the EU-Asialink project.

## Tutorial Lectures

- GCM tutorial “hands-on Grid programming” was carried out in Beijing, on 1 November 2007 for 30 Chinese students.
  - Cédric Dalmaso (INRIA), Active Object programming: a Master Slave example
  - Antonio Cansado (INRIA), GCM component programming: a Master Slave example
  - Cédric Dalmaso and Antonio Cansado (INRIA), GCM component programming with ADL: A Master Slave example
  - A. Basukoski and J. Thiyagalingam (UoW), GCM component programming with ADL: A Methodology using Grid IDE, Tutorial Lecture, GridCOMP Tutorial, Beijing, Nov. 2007.

- Patrizio Dazzi (ISTI-CNR) and Marco Aldinucci (UNIFI), Non Functional framework: autonomic management
- At CoreGRID Summer School, September 2007 in Budapest, three presentations on Grid component models and platforms were given:
  - Components for high performance parallel and distributed computing (Marco Danelutto, University of Pisa)
  - Component-based grid platforms and environments (Vladimir Getov, University of Westminster)
  - ProActive and Grid Component Model Programming and Deployment. The GCM Eclipse Environment - talk and demo (Denis Caromel, Cedric Dalmaso, Elton Mathias, INRIA)

### CoreGRID Summer School 2008

Participation of GridCOMP in the next CoreGRID Summer School 2008 is being prepared. On 10 July 2008 GridCOMP partners will perform a GCM tutorial at the CoreGRID Summer School to be held in Dortmund University, Germany. The objective of this practical hands-on tutorial is to give an overview of the ProActive/GCM reference Open Source implementation and integration within SOA architecture and its integration. More information is available at: <http://www.it.irf.uni-dortmund.de/IT/CoreGRID/Program.php>

### Training material

Training material on ProActive, Basic GCM features, Autonomic GCM features and Grid IDE materials are available on GridCOMP website at:

<http://gridcomp.ercim.org/content/blogcategory/22/27/>

These training information are also described in deliverable D.DIS.04

### Flyer

In addition to the GridCOMP project flyer printed in 2006, a Grids@Work 2008 flyer was designed to be distributed during conferences, workshops and any event of importance where GridCOMP could be disseminated. This flyer announces the GridCOMP events to take place on 20-24 October 2008.

The flyer for Grids@Work 2008 features a large blue 'V' logo and the text 'GRIDS@WORK 20-24 October 2008 INRIA - Sophia Antipolis - FRANCE'. It includes logos for PLUGTESTS, INTEROP EVENTS, and various sponsors like Microsoft, ProActive, and ERCIM. The text 'GRIDS for Finance & Telecommunications' is also present.

This is a detailed flyer document for Grids@Work 2008. It lists the event title 'V Grids@Work' and the subtitle 'V Grid Plugtests, GridCOMP ProActive/GCM User Group & FMCO Conferences Concertation Meeting: From Components to Services to Utilities'. It includes a table of the agenda for October 20-24, 2008, and sections for 'About INRIA', 'About ERCIM', and 'About Interop'. The agenda table is as follows:

AGENDA 20-24 October 2008	
Mon. 20 Oct.	GridCOMP Internal Meeting; V Grid Plugtests: Grids for Finance and Telecommunications Context (Preparation); FMCO Conference
Tue. 21 Oct.	GridCOMP Conference: ProActive/GCM User Group; V Grid Plugtests: Grids for Finance and Telecommunications Context - Day 1
Wed. 22 Oct.	European Commission Concertation Meeting: From Components to Services to Utilities; Grids@Work (Software and Service Architectures and Infrastructures) & FMCO Infrastructure; FMCO Conference; V Grid Plugtests: Grids for Finance and Telecommunications Context - Day 2
Thu. 23 Oct.	ProActive/GCM Hands-On Tutorial; V Grid Plugtests: Grids for Finance and Telecommunications Context - Day 3; From FMCO towards ProActive/GCM
Fri. 24 Oct.	ETSI TC Grid Meeting

## Scientific publications

Several scientific publications and technical reports were performed during this second reporting period. These documents are listed in the second table below.

## Conferences and/or Workshops organised/foreseen by the project

Planned/ actual dates	Type	Type of audience	Countries addressed	Size of Audience	Partner responsible /involved
<i>Conferences</i>					
29 Oct 2007	Presentation of the GridCOMP project by Marco Danelutto at the EchoGRID meeting, Beijing	Research	China	50	UNIPI
Oct 2007	ACM HPC-GECO/CompFrame Workshop at ooPSLA 2007	Research	Canada	50	UoW
1 Nov 2007	ProActive & GCM Tutorial at GRIDs@Work : Joint European Union/China GRID Days, Beijing	Research and High Education	China	30	INRIA, Tsinghua, UNIPI, UoW, ISTI-CNR
4 Mar 2008	Software & Services Priorities for WP 2009-10 Workshop, Brussels	Research	Europe	200	ERCIM, INRIA
2-6 June 2008	OGF 23, CoreGRID showcase days, Barcelona	Research	Europe	300	ERCIM, INRIA, UoW, GridSystems, ATOS
8-11 July 2008	IEEE International Conference on Services Computing (SCC 2008)	Research	US	200	UoW
July 2008	IEEE COMPSAC	Research	Europe	350	UoW, IBM
August 2008	International Seminar on Distributed Verification and Grid Computing, Dagstuhl	Research	Europe	50	UoW
August 2008	CoreGRID Symposium	Research	Europe	150	UoW, UNIPI, ISTI-CNR
3 Aug 2008	ChinaGrid 2007, in Dunhuang, China	Research	China		Tsinghua
October 2008	ACM Workshop on Component-based High-Performance Computing	Research	Europe		UoW, IBM
21 Oct 2008	GridCOMP conference	Research	Europe	80	All GridCOMP partners
22 Oct 2008	Technical Concertation Meeting	Research	Europe	120	All GridCOMP partners
23-24 Oct 2008	GridCOMP ProActive/GCM Tutorial	Research	Europe	30	INRIA, UoW UNIPI, ISTI-CNR
24 Oct 2008	ETSI TC Grid meeting	Research	Europe	30	INRIA

28 Oct 2008	EU-China Cooperation workshop	Research	Europe-China	60	INRIA, TU, ERCIM
<i>Flyer</i>					
March 2008	Grids@Work flyer	Research	Europe		INRIA, ERCIM
<i>PhD Course</i>					
10 July 2008	CoreGRID Summer School-GCM Tutorial	Research	Europe	60	INRIA, UoW, UNIPI, ISTI-CNR

## Scientific publications

Date and Type	Details
June 2007, Technical report	Marco Aldinucci, Sonia Campa, Marco Danelutto, Patrizio Dazzi, Peter Kilpatrick, Domenico Laforenza and Nicola Tonellotto, <i>Behavioural skeletons for component autonomic management on grids</i> , in: CoreGRID Workshop on Grid Programming Model, Grid and P2P Systems Architecture, Grid Systems, Tools and Environments, 2007. Also available in TR-80 CoreGRID ( <a href="http://www.coregrid.net">www.coregrid.net</a> )
June 2007, Technical report	M. Danelutto, P. Fragopoulou, Vladimir Getov. CoreGRID Workshop on Grid Programming Model, <i>Grid and P2P Architecture, Grid Systems, Tools and Environments</i> . CoreGRID TR-0080
June 2007, Technical report	Francoise Baude, Denis Caromel, Ludovic Henrio and Paul Naoumenko, <i>A Flexible Model and Implementation of Component Controllers</i> , CoreGRID Workshop on Grid Programming Model, Grid and P2P Systems Architecture, Grid Systems, Tools and Environments, CoreGRID TR-0080 technical report
August 2007, Proceedings	Weiyuang Huang, Yongwei Wu, Jia Jiu, Guangwen Yang, Weimin Zheng. <i>A Component Based Interoperability Solution over Existing Grid Middleware</i> , at the 6th International Conference on Grid and Cooperative Computing, GCC 2007
August 2007, Proceedings	Yulai Yuan, Yongwei Wu, Guangwen Yang, Yu Feng. <i>Dynamic data Replication based on Local Optimization Principle in Data grid</i> . International Workshop of Grid Middleware 2007.
September 2007, Proceedings	Yongwei Wu, Yulai Yuan, Guangwen Yang, Weimin Zheng. <i>Load Prediction Using Hybrid Model for Computational Grid</i> . Grid 2007 conference, Austin, US
September 2007, Technical Report	R.M. Badia, F. Baude, V. Getov, T. Kielmann, I. Taylor. CoreGRID Workshop on Grid Systems, Tools and Environments, CoreGRID TR-0103
October, 2007	Zhang Zhongqiang, Wu Yongwei, Wang Chunlu, <i>MX-based monitoring component model for GridCOMP</i> Journal of Huazhong University of Science and Technology (Natural Science Edition), v 35, n SUPPL. 2, October, 2007, p 65-68
October 2007, Proceedings,	F. Baude and L. Henrio and P. Naoumenko, <i>A Component Platform for Experimenting with Autonomic Composition</i> , First International Conference on Autonomic Computing and Communication Systems (Autonomics 2007), ACM Digital Library
October 2007	V. Getov. Letters to the Editor, IEEE SCS News 12(4), p. 2, Oct. 2007, ISSN: 1098-4232, <a href="http://www.ieee.org/sscs-news">http://www.ieee.org/sscs-news</a>

November 2007	Yongwei Wu, Likun Liu, Jiayin Mao, Guangwen Yang, Weimin Zheng, <i>An Analytical Model for Performance Evaluation in a Computational Grid</i> . Workshop of High Performance Computing in China: Solution Approaches to Impediments for High Performance Computing(SC07), in Reno U.S
2007, Articles and chapter in books	K. Rycerz, M. Bubak, P. Sloot, V. Getov, <i>Problem Solving Environment for Distributed Interactive Applications</i> . In: Achievements in European Research on Grid Systems, pp. 55-66, Springer
2007, Articles and chapter in books	N. Parlavantzas, V. Getov, M. Morel, F. Huet, F. Baude, D. Caromel, Componentising a Scientific Application for the Grid. In: Achievements in European Research on Grid Systems, pp. 109-122, Springer
2007 Articles and chapter in books	J. Thiyagalingam, V. Getov, S. Panagiotidi, O. Beckmann, J. Darlington, <i>Domain-Specific Metadata for Model Validation and Performance Optimisation</i> . In: Achievements in European Research on Grid Systems, pp. 165-178, Springer
2007, Conference paper	N. Parlavantzas, V. Getov, M. Morel, F. Baude and D. Caromel. Design Support for Componentising and Grid-enabling Scientific Applications, Proc. ACM CompFrame'07 Symposium, pp. 31-38, ACM Press, 2007.
February 2008	M. Aldinucci, S. Campa, M. Danelutto, M. Vanneschi, P. Dazzi, D. Laforenza, N. Tonello, and P. Kilpatrick. <i>Behavioural skeletons in GCM: autonomic management of grid components</i> . In D. E. Baz, J. Bourgeois, and F. Spies, editors, Proc. of Intl. Euromicro PDP2008: Parallel Distributed and network-based Processing, pages 54--63, Toulouse, France,. IEEE.
February 2008, Technical Report	S. Isaiadis, V. Getov, I. Kelley, I. Taylor, <i>Dynamic Service-Based Integration of Mobile Clusters in Grids</i> , CoreGRID TR 0094, Institute on Grid Systems, Tools and Environments, CoreGRID NoE,
February 2008, Technical Report	M. Aldinucci, M. Danelutto, and P. Kilpatrick. <i>Towards hierarchical management of autonomic components: a case study</i> . TR-0127, Institute on Programming Model, CoreGRID - Network of Excellence, 2008.
April 2008, Proceedings	Enric Tejedor and Rosa M. Badia and Paul Naoumenko and Marcela Rivera and Cédric Dalmasso, <i>Orchestrating a safe functional suspension of GCM components</i> , CoreGRID Integration Workshop 2008, "Integrated Research in Grid Computing", Springer-Verlag
April 2008	M. Aldinucci, M. Danelutto, P. Kilpatrick, and P. Dazzi. <i>From Orc models to distributed grid Java code</i> . In S. Gorbach, P. Fragopoulou, and T. Priol, editors, Proc. of the Integrated Research in Grid Computing Workshop, CoreGRID, pages 2--13, Hersonissos, Crete, Greece,.
April 2008, Technical Report	M. Aldinucci and E. Tuosto. <i>Toward a formal semantics for autonomic components</i> . TR-08-08, Università di Pisa, Dipartimento di Informatica,
April 2008, Technical Report	M. Aldinucci and E. Tuosto. <i>Toward a formal semantics for autonomic components</i> . TR-08-08, Università di Pisa, Dipartimento di Informatica,.
May 2008, Conference paper (accepted)	<i>Adaptive Hybrid Model for Long Term Load Prediction in Computational Grid</i> . Yulai Yuan, Yongwei Wu and Guangwen Yang. CCGrid 2008.
2008 (to appear)	M. Aldinucci, S. Campa, M. Danelutto, P. Dazzi, P. Kilpatrick, D. Laforenza, and N. Tonello. <i>Behavioural skeletons for component autonomic management on grids</i> . In M. Danelutto, P. Frangopoulou, and V. Getov, editors, Making Grids Work, CoreGRID. Springer, 2008 (to appear).
2008 (in press)	Xingchen Chu, Srikumar Venugopal, and Rajkumar Buyya, <i>Grid Resource Broker for Scheduling Component-based Applications on Distributed Resources</i> , <i>Cyberinfrastructure Technologies and Applications</i> , Junwei Cao (ed), Nova Science Publishers, USA
2008 (to appear)	A. Basukoski, V. Getov, J. Thiyagalingam, and S. Isaiadis, <i>Component-oriented Development Environment for Grid: Design and Implementation</i> , in Making Grids Work, Springer, 2008 (to appear).



2008 (to appear)	E. Tejedor, R.M. Badia , T. Kielmann, and V. Getov. A Component-Based Integrated Toolkit, in <i>Making Grids Work</i> , Springer, 2008 (to appear).
28 July- 1 <sup>st</sup> August 2008, Proceedings (to appear)	T. Weigold, P. Buhler, J. Thiyagalingam, A. Basukoski, V. Getov, <i>Advanced Grid Programming with Components: A Biometric Identification Case Study</i> , Proc. IEEE COMPSAC, IEEE CS Press, 2008 (to appear).
April 2008, Proceedings IPDPS	V. Getov, <i>Integrated Framework for Development and Execution of Component-based Grid Applications</i> , Proc. IEEE IPDPS, IEEE CS Press, 2008.
June 2008, Proceedings HPCS	G. Kraft, V. Getov, <i>Transaction-Oriented Simulation in Ad Hoc Grids: Design and Experience</i> , Proc. HPCS, 2008.

### Results of the project

Description	Details
November 12 <sup>th</sup> 2007, ETSI Technical Specification (draft)	TS 102 650-1 - GCM Interoperability Deployment
ETSI standard - Technical Specification (to be published)	TS 102 650-2 - GCM Interoperability Application Description