Summer 2005
Volume 3, Issue 2

GridConnections

News and Information for the Global Grid Forum Community

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GGF MISSION:

LEADING THE PERVASIVE ADOPTION OF GRID COMPUTING FOR RESEARCH AND INDUSTRY.

GGF Perspectives and Directions

by Mark Linesch, Hewlett Packard, GGF Chair

As our community gathers at GGF14 in Chicago, I wanted to reflect on the progress we have made during the first half of the year and highlight several key projects of interest that will be introduced in Chicago and further discussed during the remainder of 2005.

This has been an exciting year so far for the grid community and GGF. As industry adoption of grid solutions accelerates, GGF is improving the way in which we communicate, collaborate, and operate. In January 2005 we completed an intensive strategic process that resulted in a set of proposed changes to GGF. These changes were announced in March during GGF13 in Seoul and include an evolution of our Grid Forum Steering Group to provide more focus on "Community, Standards and Operations" along with the transition to a new Area/Group structure. A key element of our strategic direction was the discussion of an aggressive set of objectives to support our mission of pervasive adoption for research and industry. Several of these objectives have already been completed including: the launching of a new GGF website design; the establishment of a GGF marketing plan and PR agency; and the introduction of "Community" tracks within GGF Events – starting with GGF14 in Chicago.

I also wanted to highlight several key project deliverables supporting our objectives that will be discussed in Chicago and will continue to gain momentum as we progress throughout the year.

Standards Landscape: This project aligns with our Liaison objectives and our collaboration with other Standards Development Organizations (SDOs) including DMTF, IETF, ITU-T, OASIS, SNIA, TMF, and W3C. GGF has been carrying on a dialogue for almost a year – holding several face-to-face meetings and monthly conference calls to improve coordination on next generation standards. As standards organizations, we share a common interest in exploring communication mechanisms and projects that can speed the delivery of industry standards while better communicating interactions, dependencies and status to sponsors and the industry at large.

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"In a sea of standards, it's great to have a star to steer by."

GGF Standards Roadmap

By David Snelling,
Acting Vice-Chair, Standards

A critical component of the GGF mission is to define grid specifications that lead to broadly adopted standards and interoperable software. The grid and broader distributed computing landscapes appear to be a complex "sea of standards" that many find difficult to comprehend and navigate. And unfortunately, our "navigation" technology is more akin to star charts and compass at the present time – a far cry from the latest satellite navigation systems found on many of today's sea-worthy vessels.

However, the GGF community is asking for clarity regarding the standards landscape and the roadmap for development and adoption. So we will start slowly with somewhat crude instruments and evolve our "navigation technology" over time. This will require us to mature a GGF Standards Roadmap in stages, starting with an early "discussion draft" to be presented at GGF14.

The roadmap currently being developed by the GGF provides a rough scoping of the standards landscape (e.g., grid technologies and specifications within the scope of the broader distributed computing standards landscape). We next describe how the OGSA architectural work within GGF fits into this broader picture. Here the OGSA "profile" work will be an important tool in helping to highlight interoperability approaches, issues and progress (i.e., "the most traveled or safest sea routes"). Profiles collect together a number of key specifications, which collectively complete a part of the OGSA design vision, and describe how these specifications inter-play and where issues of interoperability arise. The first OGSA profile, which is due for public comment by GGF14, describes how the WSRF family of specifications can be used together to create an infrastructure for OGSA.

But OGSA is only part of GGF's work in Grid computing, so the roadmap will include standardization work being carried out in other areas within the GGF. For instance, GridFTP, while not a required component of OGSA, is a critical specification needed by implementers of OGSA and other architectures for Grid computing. Also, whatever the Grid infrastructure being used, application developers need a stable API that provides the interface between applications and the Grid. The GGF SAGA specification addresses this need and will also be included in the GGF roadmap along with the rest of the work at GGF.

It is expected that the roadmap will provide an approachable summary of the specifications in terms of the uses and targeted functions and the time scales for public comment, implementation, interoperability testing, etc. It is hoped that the GGF Standards Roadmap will provide at least partial answers to the following questions from the community:

What standards are important to me in the work I am trying to do, be it implementing foundations for Grids or building end user applications in a Grid context?

When will the standards I need most be available for comment, prototyping, or production level implementation?

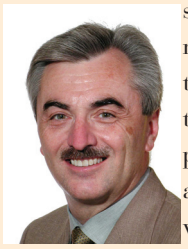
Where in GGF should I put my effort to ensure that my solutions become the standard solutions?

We look forward to discussing our early draft of the GGF roadmap at GGF14 – hearing your comments, questions and issues. A formal publication of the roadmap as a GGF Informational Document is planned for later in 2005. As the Roadmap matures, it will become a "living" document and will continue to be updated to provide an integration point for continued discussion and clarity as it evolves. By working together on both our "navigation technology" and specification content, we hope to better chart the course to pervasive adoption for the grid community.

SponsorSpotlight

SGI Grid Strategy

SGI Grid strategy is entirely motivated by the belief that in a knowledge based economy, data are the raw materials. If we as a society are to be successful in such an economy, we require the infrastructure to gather, process, manage, share, and visualize data in order to transform data into information and information into knowledge. The Grid is that infrastructure.



Global Coordinator, SGI Grid Strategy: Walter Stewart

How does this need for infrastructure play out in a real-life manufacturing example? SGI works with a major engineering company who has given us the permission to tell the story provided we do not identify the company. The firm had a number of engineers all of whom were required to work with data sets of 220 gigabytes at their workstations in several locations. When as a result of a major breakthrough in the granularity of their simulations, the company discovered that their next generation data sets were going to be 4 terabytes, it became clear that moving the data was no longer viable. Not only would it have required 60 hours; none of the workstations were capable doing anything useful with 4 terabytes of data.

SGI created a next generation "big-data" grid environment for the company. Working from their legacy workstations, engineers now remotely access data, processing power, and visualization from their data centre without stressing either their workstations or the network because the data is not moved. The engineers send instructions over the grid in one direction and receive only the image of their data in the other. As a result, they have full interactivity in real-time with data sets hugely larger than could be accommodated by either the network or their workstations. Monster data can mean huge improvements in productivity and quality, but not without grid infrastructure.

SGI's technology for the Grid allows its customers to focus on enabling users regardless of their locations. Much discussion of the grid focuses on the location of hardware. SGI focuses on customer needs for collaborative work on enormous volumes of data in multiple locations on multiple devices. SGI rounds out its technology for the Grid with alliances with leading companies and organizations in services and middleware for Grid installations.

SGI has been a Platinum Sponsor of GGF since 2001. SGI greatly values the role GGF has played in driving forward Grid technology and deployments – above all, GGF's role in ensuring that the Grid remains open.

Taiwan HPC Center Sponsors GGF

By Alex Wu, NCHC

Taiwan has launched a four-year national project called Knowledge Innovation National Grid (KING). The project is carried out by NCHC (National Center for High-Performance Computing) and will develop an advanced cyber infrastructure, based on the Grid computing paradigm. NCHC aims to promote development and advancement of grid technologies that will provide seamless and scalable access to wide-area distributed resources. The KING project offers sharing, selection, and aggregation of a wide variety of geographically distributed computational resources such as supercomputers, compute clusters, storage systems, and data sources, functioning as a single, unified resource for compute-intensive applications. The budget of the KING project from 2003 through 2006 is $32 million.

Deputy Director of NCHC: Dr. Whey-Fone Tsai

Specific grid applications, such as Medical Grid, Ecological Grid, Biological Grid and Hazard-Mitigation Grid etc, have been selected to demonstrate their unique applications. Prototypes of these applications have been built and tested with help from numerous domain experts, such as medical doctors and ecologists. The first phase of the development has proven the feasibility of these applications and their full potential is expected to significantly impact industries and academia.

Through the participation in GGF communities, NCHC can apply standardization and the ubiquitous adoption of grid solutions to research institutions and industries in Taiwan. NCHC is very proud to be a sponsor of GGF.

GGF Partners With IDG to Create GridWorld

By Ann Collins, GGF Director of Events

For the past several years, GGF has brought together leading grid researchers, vendors, and end-users from around the world to share best practices, develop grid specifications, and encourage the adoption of grids. At GGF12 in Brussels, Belgium, GGF held its first enterprise-focused program featuring grid deployment veterans from commercial organizations in finance, manufacturing, pharmaceutical, and many other industrial sectors.

The feedback from Brussels was extremely positive and as a result, GGF embarked on a project to build on the momentum of this enterprise event while increasing the focus on grid user communities in both research and industry. On June 7, GGF signed an agreement with IDG World Expo to produce GridWorld, an annual event intended to be the premier commercial, educational and technical event for grid computing worldwide.

GridWorld will combine IDG's expertise in world class event management with GGF's expertise in grid standards, best-practices, and program content.

The inaugural GridWorld Conference will be held in Boston, Massachusetts October 3-6, 2005 at the Park Plaza Hotel & Towers in the heart of historic Back Bay.

Like Brussels, the enterprise program will include keynotes from grid technology leaders and implementers, cross-industry panels, and case studies all centered on the theme: *Grid In Action: Explore. Adopt. Deploy.* Additional program highlights include invited talks, workshops and tutorials geared to enhance current and spawn new grid communities of interest in both research and industry.

This premier Grid conference will bring together leading grid technology innovators, solution providers, and software and technology companies to discuss grid solutions that lead to further grid adoption.

More information will be available on the GGF website so stay tuned. Please join us for GridWorld in Boston.

GGF Document Series

New since GGF13:

GFD.48
Authority Recognition
Authors: P. Madsen, D. Chadwick

GFD.47
GridFTP v2 Protocol Description
I. Mandrichenko, W. Allcock, T. Perelmutov

GFD.46
Operations for Access, Management, and Transport at Remote Sites
R. Moore

GFD.45
Resource Management in OGSA
F. Maciel, J. Treadwell, L. Srinivasan, A. Westerinen, E. Stokes, H.Kreger, D. Snelling

Group Updates

New Groups Since GGF13:

Telecom Community Group (Telco-CG)
Trusted Computing Research Group (TC-RG)
Firewall Interest Research Group (FI-RG)
OGSA-BES Working Group (OGSA-BES-WG)
Production Grid Services-RG (PGS-RG)
OGSA ByteIO Working Group (ByteIO-WG)
OGSA-Data Working Group (OGSA-D-WG)
Standards Development Organizations Collaboration on Networked Resources Management (SCRM-WG)
OGSA-Naming Working Group (OGSA-Naming-WG)

GGF Area Structure Enhanced

At GGF13 in Seoul, Korea, Mark Linesch (GGF Chair) and the Grid Forum Steering Group (GFSG) re-affirmed the mission of GGF to "lead the pervasive adoption of grid computing for research and industry." The GGF mission is enabled by a three-fold focus on community and standards, supported by efficient operations.

GGF will continue to foster and manage unique communities of interest to capture requirements, share best practices, further research, and accelerate adoption. Second, GGF will continue to focus on developing architectures and specifications in collaboration with industry stakeholders that lead to broadly adopted standards with interoperable software implementations. And, finally, GGF's mission is supported by efficient operations in areas such as finance, events, and information technology.

In 2001, the GFSG created an Area structure that collected related research groups and working groups and provided a structure for interactions among these related groups. Areas such as Security, Architecture, Peer-to-Peer, and others were created to add structure to the growing number of groups and communities. Area Directors were elected to shepherd these Areas and to help the groups accomplish their chartered activities.

Over the years, grids, grid architecture, related web-service standards, and the grid-user communities have expanded or evolved to the point that a new Area structure is deemed necessary. At GGF14 (Chicago, June 2005), the GGF will transition to the new Area structure initially proposed at GGF13 by the GFSG.

The Area structure (Diagram 1) is categorized by function (i.e., Communities and Standards). Each function has multiple Areas, managed by Area Directors, and led by a Vice-Chair and leadership council.

Existing GGF groups and communities will meet with their new Areas at GGF14. The GGF web site (www.ggf.org) contains pages which describe the purpose of each Area, the leadership, and the groups and communities populating the Area. For more information about these areas, you may contact any Area Director or the Standards Facilitator, Joel Replogle (replogle@ggf.org).

The GFSG believes that the new Area structure will bring clarity to the work and organization to the growing GGF community – enabling better group and community collaboration, while enhancing the productivity of the community overall.

DIAGRAM 1: New Area Structure for GGF Groups

Standards Areas	
Architecture	Frameworks and Design patterns for Grids
Applications	Application development and programming interfaces
Compute	Scheduling and execution on grid compute resources
Data	Grid data resource access, transport and management
Infrastructure	Interfaces between grid middleware and lower layer resources
Liaison	Collaboration with other partner organizations
Management	Management of grid systems
Security	Authentication, authorization, confidentiality, privacy, policies, operations, risk management
Community Areas	
Grid Operations	User communities who manage and operate grids
Industry Applications	User communities in industry/enterprise sectors
Major Grid Projects	Large-scale national, regional, grid programs
Technology Innovators	Grid technology research and development communities
Research Applications	User application communities in academia/research
Community Affairs	Cross-cutting community activities
Operations Areas	
Events	Planning and execution of GGF Events
Finance	Financial and legal support
Information Technology	GGF website and document management support
Marketing	Communicating GGF value and progress
Sponsorship	Enabling funding to accomplish the GGF mission

Industry Standards Collaboration Group Formed

By Hiro Kishimoto, AD of Liaisons, AD of Management

Several major Standards Development Organizations (SDOs) have been carrying on a dialogue for about one year to try to improve overall collaboration on next generation standards for management of networked and individual resources. As a result of this discussion these SDOs have motivated the formation of a cross-institutional technical working group which will produce informational document with the primary objective of converging common terminology and organizing and summarizing the interplay of the various technology and specifications, an a taxonomy. This activity is called "Standards development organizations Collaboration on networked Resources Management" or SCRM (can be pronounced scrum).

Organizations expected to participate in this round-table style collaboration include: **the Distributed Management Task Force (DMTF)**, the Global Grid Forum (GGF), **the Organization for the Advancement of Structured Information Standards (OASIS)**, the Storage Networking Industry Association (SNIA), and **the Tele Management Forum (TMF)**. Other standards development organizations such as the Internet Engineering Task Force (IETF), **the International Telecommunication Union – Telecommunication Standardization Sector (ITU-T)**, and the World Wide Web Consortium (W3C), have expressed an interest and will encourage their technical experts to participate in this activity.

While each of the individual SDOs already have excellent expertise and advantages they also realize that the magnitude and scope of this work is greater than any one organization can handle alone. This forms the basis for exploring communication mechanisms and projects that can speed the delivery of industry standards while better communicating interactions, dependencies and status to sponsors and the industry at large.

Most SDOs already have many one-to-one liaison relationships which are effective and productive for handling specific issues. This round table-style collaboration provides a "bird's eye view" of this broad and complicated technical area, helping further the work already underway between these leading standards bodies. This is the main reason SCRM was born.

While this WG will be organized within GGF this does not mean GGF will lead the SCRM work. Rather, GGF will just provide the required infrastructure for SCRM-WG. All experts participating from SDOs can equally contribute to and promote the SCRM work. The SCRM-WG is regular public WG in GGF and anyone with relevant technical skills, interest and commitment can participate.

The scope of SCRM centers around the standards associated with the management of resources used in a network or individually, by means of structured data standards. 'Management' includes the functions of discovery, deployment, resource availability, statefulness, event coordination, notification and lifecycle tracking. 'Resources' to be managed include data objects as well as physical objects like devices. However, the SCRM scope does not encompass all standards associated with distributed computing – just those related to the management of networked resources.

Expected Participating Standards Development Organizations

Distributed Management Task Force (DMTF)
Global Grid Forum (GGF)
Internet Engineering Task Force (IETF)
International Telecommunication Union - Telecommunication Standardization Sector (ITU-T)
Organization for the Advancement of Structured Information Standards (OASIS)
Storage Networking Industry Association (SNIA)
Tele Management Forum (TMF)
World Wide Web Consortium (W3C)

This list is not exclusive; any other SDO that is interested and has relevant expertise is also very welcome to join the SCRM.

The first deliverable of the SCRM WG collaboration will be the "standards landscape document" which provides information regarding the definitions, taxonomy and interplay of the various specifications of each respective organization.

At GGF14 in June 2005, participating SDOs are pleased to announce our comprehensive collaboration and invite every technical expert to join this activity.

Contact Information

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Perspectives and Directions...continued from cover

"This has been an exciting year so far for the grid community and GGF. As industry adoption of grid solutions accelerates, GGF is improving the way in which we communicate, collaborate, and operate."

The scope of our work together centers around the standards associated with the management of resources – a critical area for the future of grids and distributed computing. We have agreed to form a cross institutional working group within GGF and are pursuing a first deliverable – a "landscape document" designed to provide information regarding the definitions, taxonomy and interplay of the various specifications of each respective organization. This activity is called "Standards development organizations Collaboration on networked Resources Management" or SCRM (pronounced scrum). Hiro Kishimoto has been leading this effort within GGF and provides additional details in this issue of the newsletter.

Standards Roadmap: The second project that I want to highlight builds on our SDO collaboration work mentioned above along with the core architecture and standards work of GGF. The GGF Standards Roadmap provides a scoping of the current standards landscape; describes how the work of OGSA fits within this landscape; and includes additional specification work being developed within the GGF community. An early draft of the roadmap is being presented at GGF14, with formal publication as a GGF Informational Document during 2005. Dave Snelling is championing this effort as part of his role as acting Vice Chair of Standards. He provides a more in-depth discussion in this issue of the newsletter

GridWorld Event: The third project that I want to highlight involves collaboration between GGF and IDG World Expo on an exciting new commercial Grid event called GridWorld. GridWorld is envisioned to be the premier commercial, educational and technical event for grid computing worldwide brought to you by IDG and the Global Grid Forum – combining IDG's expertise in world class event marketing and management with GGF's expertise in grid standards, best-practice, and solution content. Our first GridWorld will be held October 3-6 in Boston, MA. It will include an extensive Enterprise track along with the traditional GGF15 Community and Standards tracks that are always a key element of GGF gatherings. With customer and media attention regarding all things "grid" and "utility" continuing to grow, it promises to be a great opportunity to cut through the hype and share practical insights and expertise to accelerate the adoption of grids. Ann Collins, our Director of Events is leading this effort and provides additional insight in her article in this issue of the newsletter.

Please take a moment to read more about our collaboration work with other Standards Development Organizations; our GGF Standards Roadmap; and our upcoming GridWorld Event in October. I want to thank our dedicated group participants and GGF staff members for their excellent contributions to our mission of pervasive adoption during the first half of 2005 and wish the entire GGF community a great second half 2005.

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Get involved in the global grid forum community

1. **Attend a Meeting**
   GGF15 and GridWorld: Boston
   GGF16: Athens
   GGF17: Tokyo
   GGF18: Geneva
2. **Join a community of interest**
3. **Join a working or research group**
4. **Become a sponsor**
   For more information, visit www.ggf.org.