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PHOSPHORUS

Lambda User Controlled Infrastructure for European Research

Integrated Project

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Research Networking Testbeds

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Annual Report on Standardisation Activities

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Abstract

This deliverable presents a detailed report on all standardisation activities during the first 30 months of the project. The deliverable is structured according to the activities of the PHOSPHORUS partners in different research and working groups of the Open Grid Forum. It is the periodic update of D7.2.2 version 2, which was covering the first 18 months activities.

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0 Executive Summary

This report describes the current status of standardisation activities seen as relevant to PHOSPHORUS by the project partners of PHOSPHORUS. It also describes partners' ongoing contributions to standardisation relevant to the objectives of the PHOSPHORUS.

The standardisation activities of partners of PHOSPHORUS are focusing on participation in different research groups and working groups of the Open Grid Forum (OGF). PHOSPHORUS partners are active in the following groups:

FI-RG	Firewall Issues Research Group
FVGA-WG	Firewall Virtualization for Grid Applications Working Group
GHPN-RG	Grid High Performance Networking Research Group
GRAAP-WG	Grid Resource Allocation Agreement Protocol Working Group
GSA-RG	Grid Scheduling Architecture Research Group
JSDL-WG	Job Submission Description Language Working Group
NML-WG	Network Markup Language Working Group
NM-WG	Network Measurements Working Group
NSI-WG	Network Service Interface Working Group
OGSA-AUTHZ-WG	OGSA Authorisation Working Group
OGSA-RSS-WG	Open Grid Service Architecture Resource Selection Working Group
WFM-RG	Workflow Management Research Group

The development of standards is restricted to the working groups while research groups are dedicated towards presentation and discussion of ongoing or planned work in the respective area and to join forces. The states of technology in these areas or the direction the development of these technologies will take usually are not mature enough to start creating a standard immediately. However, these groups will spin-off working groups targeting on standards once the need for the development of a standard is recognised.

1 Collection of information

In order to collect information for this deliverable a mail was sent out on the general assembly list asking the members of the collaboration to deliver updated information on contributions and activities of Phosphorus in standardization organisations described in the previous version of this deliverable D7.2.2 version 2.0 produced at month 18 of the project. These activities are particularly important since we try to let different networks inter-work on control and service plane in order to deliver hybrid services, and obviously we aim for open standards.

1.1 Information requested for D7.2.2 at month 30

1. What is the subject of your contribution?
2. Person/partner leading this STD effort in that organisation
3. Standards organisation where contribution is made
4. Working/research group
5. Role in that organisation
6. Expected outcome and tentative date
7. State of the work (e.g. under way, draft, proposed, recommendation)
8. Any other information

The information received from the PHOSPHORUS partners updated with their contributions received at month 30 is presented in the next chapter.

2 Collected information

2.1 FI-RG – Firewall Research Group

2.1.1 Group description

The research group has first documented the type of issues that Grid applications experience when the need arises to control data transport policy enforcement devices (firewalls, packet filter, application gateways). Once the types of issues had been identified, the group has related these issues to specific categories of enforcement devices.

This research group is not working on standards but caries out activities to investigate the group's topic. It has spin-off an OGF working group (Firewall Virtualization for Grid Applications Work Group - FVGA-WG) to work on standards.

This spin-off has taken place in autumn 2008 at OGF 24, having had a BoF at OGF 23.

Link to group's page at OGF website: `http://www.ogf.org/gf/group_info/view.php?group=fi-rg`

2.1.2 Partners active in this research group

FZJ, UVA

2.1.3 What is the subject of the contribution?

FZJ and UVA contributed to the research group's document "Firewall issues overview" and "**Requirements on operating Grids in Firewalled Environments".**

OGF Documents: GFD.83.pdf and GFD.142.pdf

Links to documents:

http://www.ogf.org/documents/GFD.83.pdf

http://www.ogf.org/documents/GFD.142.pdf

2.1.4 Partner/ Person leading this effort in that research group

UVA: Leon Gommans

FZJ: Ralph Niederberger

2.1.5 Role in that research group

Leon Gommans: Co-chair

Ralph Niederberger: Co-chair

2.1.6 Expected outcome and tentative date

The outcome of the RG effort are two documents describing problems and requirements to the organisational and enterprise firewalls, in particular to on-demand and high-performance optical networks, as well as a description of available solutions and open issues.

2.1.7 State of the work (e.g. under way, draft, proposed, recommendation)

The group has published two documents as OGF informational documents ("Firewall issues overview" and "Requirements on operating Grids in Firewalled Environments").

The first document describes the issues grid applications face with firewalls located on the communication paths.

The second document of FI-RG is describing existing solutions allowing grid applications traversing firewalls, evaluates these approaches and solutions (for firewall issues) such as application level gateways, host based firewalls, VPN style gateways etc. and summarizes the remaining open issues.

2.2 FVGA-WG – Firewall Virtualization for Grid Applications Working Group

2.2.1 Group description

Grid Computing expounds the vision of applications having on-demand, ubiquitous access to distributed services running on diverse, managed resources like computation, storage, instruments, and networks among others, that are owned by multiple administrators. As grids move towards forming dynamic, seamless Virtual Organizations (VOs) using distributed resources, they require application driven transport privileges from the network. Pre-existing security policies within the network such as in firewalls, network address translators, application level gateways, VPN style gateways etc. tend to interfere with these new applications and the VO formation, and usually require an administrator/manual intervention to work.

The Firewall Issues research group (fi-rg) has documented the use cases and classified the issues that Grid applications experience when trying to traverse and/or control data transport policy enforcement devices

(GFD.83). The group has published a document that analyzes and categorizes new firewall protocols, architectures and on-demand frameworks.

This working group will leverage the application requirements from the FI-RG to standardize a set of service definitions for a virtualized control interface into firewalls and other mid boxes allowing the grid applications to securely and dynamically request application/workflow-specific services from those devices, for the duration of the service.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=fvga-wg

2.2.2 Partners active in this research group

FZJ

2.2.3 What is the subject of the contribution?

FZJ contributed requirements and use-cases for high speed networking, Service Level Agreements on network usage, e.g. reservation and co-allocation with other types of resources (access grants as grid resources for firewall opening) etc.

FZJ is leading this group as co-chair and has provided a first draft for a new protocol for dynamic opening of firewalls (Firewall traversal protocol). Phosphorus requirements will be contributed also, as there are e.g. signalling of token based firewall requirements and others.

Link to documents:

https://forge.gridforum.org/sf/go/doc15527?nav=1

2.2.4 Partner/ Person leading this effort in that research group

FZJ: Ralph Niederberger

2.2.5 Role in that research group

Ralph Niederberger: Co-chair

2.2.6 Expected outcome and tentative date

The outcome of the group will be the definition of a standard protocol for authenticated dynamic opening of ports at firewalls on the communication paths triggered by authorized grid application users.

2.2.7 State of the work (e.g. under way, draft, proposed, recommendation)

Work in progress with continuous updates.

Latest release is as of March 2009.

One document (protocol proposal) is in preparation:

Firewall Traversal protocol

2.3 GHPN-RG – Grid High Performance Networking Research Group

2.3.1 Group description

The Grid High-Performance Networking Research Group focuses on the relationship between network research and Grid application and infrastructure development. Two specific goals of the GHPN-RG are identifying a) grid application requirements and implementations that are not supported or understood by the networking community, and b) advanced networking features that are not being utilized by grid applications.

This research group is not working on standards but caries out activities to investigate the group's topic and to potentially spin-off an OGF working group later to work on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=_ghpn-rg

2.3.2 Partners active in this research group

FHG, FZJ, NXW, UESSEX, UVA, IBBT

2.3.3 What is the subject of the contribution?

FHG contributed requirements and use-cases for Service Level Agreements on network usage, e.g. reservation and co-allocation with other types of resources.

UEssex, NXW and FHG contributed to the research group draft on "Grid User Network Interface (GUNI)". This document was presented in OGF22 (Boston, Feb. 2008). A WG Charter will be submitted towards the formation of a Working Group targeting the formal standardization of the interface. A BoF will be organized at OGF23 (Barcelona, June 2008) to consult the wider community.

NXW and UESSEX also contributed to the research group's draft documents "Grid Optical Burst Switched Networks – GOBS". The documents continued their evolution path into the research group and were revised and discussed at the various OGF meetings. Fundamental inputs to this standardization work derived from the

completion of the design activities on G^{2}MPLS Control Plane carried out in Phosphorus WP2. This document passed its public comments period and external review. It is due to be published by end of March.

IBBT contributed to the research group's draft documents "Grid Optical Burst Switched Networks – GOBS"

Link to documents:

GOBS: https://forge.gridforum.org/sf/go/doc14108?nav=1

G-OUNI: https://forge.gridforum.org/sf/go/doc15126?nav=1

Moreover, the group has published an informational document: Grid Network Services Use Cases from the e-Science Community. The document can be found here:

http://www.ogf.org/documents/GFD.122.pdf

The group had a session at almost every OGF during the period reported in which issues to discuss overflowed from the networking related working groups in OGF and from the Global Lambda Integrated Facility (GLIF).

No new documents were published in the reported period M18-M30.

2.3.4 Partner/ Person leading this effort in that research group

FHG: Wolfgang Ziegler

FZJ: Ralph Niederberger

IBBT: Bart Dhoedt

NXW: Nicola Ciulli

UESSEX: Dimitra Simeonidou, Eduard Escalona

UVA: Cees de Laat

2.3.5 Role in that research group

Nicola Ciulli Contributing Member

Bart Dhoedt Contributing Member

Eduard Escalona Contributing Member

Cees de Laat: Co-chair

Ralph Niederberger Contributing Member

Dimitra Simeonidou: Co-chair

Wolfgang Ziegler: Contributing Member

2.3.6 Expected outcome and tentative date

Documents discussing issues of Grid high performance networking, especially in the optical domain, that might be important to standardise. The group may spin-off a working group later to work on specific standards.

Raise awareness and consensus, in both the grid and networking research communities, about the definition and architectural positioning of the Network Interface for grid user services, initial promotion of these concepts at the industry.

2.3.7 State of the work (e.g. under way, draft, proposed, recommendation)

Work in progress with continuous updates.

Latest release is as of Feb 2008.

The group has not yet published a document in the series of OGF documents. Two documents are in preparation:

Grid Optical Burst Switched Networks – GOBS

Grid Optical User Network Interface (G.OUNI)

2.4 GRAAP-WG – Grid Resource Allocation Agreement Protocol Working Group

2.4.1 Group description

The goal of the GRAAP Working Group is to produce a set of specifications and supporting documents which describe methods and means to establish Service Level Agreements between different entities in a distributed environment. The WS-Agreement Specification V1.0, a Web Services protocol to establish agreements

between two services, has been published in May 2007 as an OGF Proposed Recommendation (see GFD.107). Currently, the group focuses on WS-Agreement interoperability and usage scenarios.

This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=graap-wg

2.4.2 Partners active in this working group

FHG

2.4.3 What is the subject of the contribution?

FHG contributed to the development of WS-Agreement. Since the OGF20 meeting of the working group FHG realised together with the Technical University of Berlin an interoperable Grid scheduler applications using WS-Agreement for the exchange of Grid jobs. The two code-independent implementations will be used to prepare the experimental document that will describe the experiments, the interoperability and conformance tests and their results. Based on this document the Grid Forum Steering Group will later decide on the transition of the WS-Agreement specification from a proposed recommendation to an OGF recommendation.

As an extension to the basic negotiation mechanism in WS-Agreement FHG currently contributes to the draft of a specification for a protocol for agreement negotiation (WS-Agreement-Negotiation). This document is based on the contributions gathered from GRAAP-WG members covering different scenarios for negotiation and re-negotiation of WS-Agreements. WS-Agreement-Negotiation will define a negotiation protocol on top of WS-Agreement.

FHG contributed to the working group's specification "Web Services Agreement Specification (WS-Agreement)"

OGF Document: GFD.107.pdf

Link to document: http://www.ogf.org/documents/GFD.107.pdf

2.4.4 Partner/ Person leading this effort in that working group

FHG: Oliver Wäldrich, Wolfgang Ziegler

2.4.5 Role in that working group

Oliver Wäldrich: Contributing member

Wolfgang Ziegler: Co-chair

2.4.6 Expected outcome and tentative date

In May 2007 the WS-Agreement specification became a proposed recommendation of the OGF. Currently the group is working on interoperable implementations on different code-bases, the description of the interoperability experiments, and an experimental report. The objective is to make WS-Agreement a recommendation of the OGF. One of the code-bases involved in the interoperability experiments is the MetaScheduling Service used in PHOSPHORUS. At the same time the group is preparing WS-Agreement-Negotiation, which aims to lead to a multi-step protocol to achieve agreements where the single step approach of the current WS-Agreement protocol is not appropriate.

2.4.7 State of the work (e.g. under way, draft, proposed, recommendation)

WS-Agreement is a proposed recommendation. The work on WS-Agreement-Negotiation is under way, a first draft was presented in the beginning of 2009. Besides the negotiation of Agreements the group has also started to define the re-negotiation of previously established agreements.

The group works in parallel on the experience document for WS-Agreement. This document contains a list of current implementations of WS-Agreement, a table with the features of WS-Agreements available in the different implementations, the description of an interoperability experiment between two implementations (one of them being based on the framework developed in PHOSPHORUS) and several profiles for WS-Agreement.

2.5 GSA-RG – Grid Scheduling Architecture Research Group

2.5.1 Group description

The goal of the Grid Scheduling Architecture Research Group (GSA-RG) is to define a scheduling architecture that supports cooperation between different scheduling instances for arbitrary Grid resources. The group currently focuses on the interoperation of different schedulers in an OGF-compliant ecosystem.

This research group is not working on standards but carries out activities to investigate the group's topic and to potentially spin-off an OGF working group later to work on standards.

Link to group's page at OGF website: http://www.ogf.org/gf/group_info/view.php?group=gsa-rg

2.5.2 Partners active in this research group

FHG, PSNC

2.5.3 What is the subject of the contribution?

FHG and PSNC contributed to the research group's draft documents "Grid Scheduling Architecture – Requirements" and "Grid Scheduler Interaction".

Link to documents:

Requirements: https://forge.gridforum.org/sf/go/doc8640?nav=1

Interaction:

https://forge.gridforum.org/sf/docman/do/listDocuments/projects.gsa-rg/docman.root.documents.grid_scheduler_interaction

2.5.4 Partner/ Person leading this effort in that research group

FHG: Oliver Wäldrich, Wolfgang Ziegler

PSNC: Ariel Oleksiak

2.5.5 Role in that research group

Ariel Oleksiak	Secretary, Contributing Member
Oliver Wäldrich:	Contributing Member

2.5.6 Expected outcome and tentative date

The group began with identifying a set of relevant approaches obtained in existing Grid projects resulting in GFD.64 published in 2006. Currently, the GSA-RG reviews necessary protocols and interfaces to support interoperability between different Grid schedulers, and components of a modular scheduling architecture and their interactions. Services and protocols from other OGF groups are considered as potential basic building

blocks of such an architecture and will be used wherever possible. The resulting information document on Grid Scheduling Architecture Requirements is going to be finalized after OGF23 (June 2008).

2.5.7 State of the work (e.g. under way, draft, proposed, recommendation)

Mid 2008 the group planned to finalise and submit the requirements document as OGF informational document ("Grid Scheduling Architecture – Requirements"). However, due to lack of participation and contribution this document was postponed.

Another one is in preparation:

The Grid Scheduler Interaction document (draft) is describing the interaction and interoperability issues between Grid schedulers (Grid scheduler interoperation profile).

Additionally the group has started the work on activity delegation between different Grid scheduler entities as a typical use-case for Grid Scheduling.

2.6 JSDL-WG – Job Submission Description Language Working Group

2.6.1 Group description

The JSDL-WG has produced a language specification that describes the requirements of jobs for submission to Grids. JSDL 1.0 (published as GGF recommendation GFD.056) is an XML-based language that focuses mainly on computational jobs. The JSDL-WG is working on extending this language to address a wider class of jobs.

This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=jdsl-wg

2.6.2 Partners active in this working group

FHG

2.6.3 What is the subject of the contribution?

FHG contributes to the discussion of a number of extensions/add-ons to JSDL, namely for the specification of network properties when describing a distributed job, the description of licenses when running license protected applications, and key performance indicators.

2.6.4 Partner/ Person leading this effort in that working group

FHG: Oliver Wäldrich, Wolfgang Ziegler

2.6.5 Role in that working group

Oliver Wäldrich : Contributing member

Wolfgang Ziegler: Contributing Member

2.6.6 Expected outcome and tentative date

The expected outcome are extensions/add-ons to JSDL that might be used as term-language in WS-Agreement to describe Service Level Agreements including various non-computational resources like network with certain QoS properties and licenses.

2.6.7 State of the work (e.g. under way, draft, proposed, recommendation)

The work has started started in the last reporting period and is currently concentrating on developing a scheme for activity tracking.

2.7 NML-WG - Network Mark-up Language Working Group

2.7.1 Group description

The purpose of the Network Mark-up Language Working Group is to combine efforts of multiple projects to describe network topologies, so that the outcome is a standardised network description ontology and schema, facilitating interoperability between different projects.

This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=nml-wg

2.7.2 Partners active in this working group

FHG, FZJ, SARA, UVA

2.7.3 What is the subject of the contribution?

FHG contributes basic requirements with respect to Service Level Agreements on network usage, e.g. for reservation and co-allocation. The objective is to agree on a subset of terms describing network QoS properties like bandwidth that might be used as term language for WS-Agreement.

FZJ contributes its experiences gathered in different networking and supercomputing projects as well as by developing local infrastructure management and monitoring tools.

UVA and SARA contribute the work on NDL – Network Description Language. NDL is a network topology model suited for descriptions of lightpaths and hybrid networks; it is based on Semantic Web and uses RDF as the language syntax.

2.7.4 Partner/ Person leading this effort in that working group

FHG: Wolfgang Ziegler, Oliver Wäldrich

FZJ: Ralph Niederberger

UVA: Paola Grosso, Jeroen van der Ham

SARA: Freek Dijkstra

2.7.5 Role in that working group

Freek Dijkstra: Co-chair

Paola Grosso: Contributing member

Jeroen van der Ham: Lead author

Ralph Niederberger: Contributing member

Oliver Wäldrich: Contributing member

Wolfgang Ziegler: Contributing member

2.7.6 Expected outcome and tentative date

The outcome of the working group effort is a standardised network description ontology and scheme, facilitating interoperability between different projects. A use case document has been written in 2008. An ontology and scheme to describe single layer networks is expected in 2009, and a multi-layer network ontology is expected in early 2010.

2.7.7 State of the work (e.g. under way, draft, proposed, recommendation)

The use case document (deliverable #1) has gone through workgroup review and is waiting on area director review before the official publication. Link to document: https://forge.gridforum.org/sf/go/doc14679

A first ontology to describe a single layer network description (deliverable #2) has been drafted at the Berlin meeting in summer 2008, and is currently in preparation by the work group. Link to the schema: https://forge.gridforum.org/sf/go/doc15481

A multi-layer ontology and schema is expected in later 2009.

During OGF 26 the group discussed if NML-WG should define a protocol, besides defining a schema and syntax for topology exchange. While there is considerable interest, there is no consensus (yet) if this is a task for NML-WG, NSI-WG, NMC-WG or a new WG.

The group also launched a call for practical use cases for network topology descriptions from other working groups.

The group decided that deliverable 2 schema should also define the multi-layer base elements.

Thwo presentations given during the last OFG meetings are available online:

A presentation of Freek Dijkstra on G.805 and NDL multilayer: [http://forge.gridforum.org/sf/go/doc15666]

Martin Swany's presentation of UNIS: [http://forge.gridforum.org/sf/go/doc15673]

2.8 NM-WG - Network Measurements Working Group

2.8.1 Group description

The performance of most grid applications is dependent on the performance of the networks forming the grid. The Network Measurements Working Group (NM-WG) identifies network metrics (aka characteristics) useful to grid applications and middleware, and develops standard mechanisms to describe and publish these characteristics to the Grid. This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=nml-wg

2.8.2 Partners active in this working group

FZJ

2.8.3 What is the subject of the contribution?

FZJ contributes basic requirements with respect to the tools for performance measuring. Moreover, currently FZJ is using and evaluating tools that derived from the working group like PerfSONAR in the DEISA project.

2.8.4 Partner/ Person leading this effort in that working group

FZJ: Ralph Niederberger

2.8.5 Role in that working group

Ralph Niederberger: Contributing member

2.8.6 Expected outcome and tentative date

The results of the group will allow Grid application to retrieve and use qualitative information on the network, which may be used for a selection of resources resulting in a better performance of the applications. Since this kind of topology services has a strong link to the description of the network the group is collaborating intensively with the NML-WG.

2.8.7 State of the work (e.g. under way, draft, proposed, recommendation)

Currently there is no document draft under way.

2.9 NSI-WG - Network Service Interface Working Group

2.9.1 Group description

High performance networks offer advanced network services to end users with differing requirements. The user/application/middleware may request network services from one or more network service providers through a network service interface. The network service setup requires configuration, monitoring and orchestration of network resources under particular agreements and policies. Provisioning mechanisms support allocating, configuring, and maintaining network internal resources. The Network Service Interface (NSI) Working Group (WG) will provide the recommendation for a generic network service interface that can be called by a network external entity such as end users, middleware, and other network service providers. The recommendation will define the information exchange, the required messages and protocols, operational environment, and other relevant aspects. The scope of the NSI WG includes, in particular, the interface between Grid middleware and the network infrastructure as well as the interface between network domains in order to provide interoperability in a heterogeneous multi-domain environment. The WG will consider user authentication/authorization, service negotiation agreements, and information exchange to describe advanced network services.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=nsi-wg

2.9.2 Partners active in this working group

UESSEX , I2CAT, PSNC

2.9.3 What is the subject of the contribution?

UESSEX organized the BoF at OGF23 (Barcelona, June 2008) and since then led the activities of formulating the NSI-WG and preparing the WG Charter until OGF24that was driven by Phosphorus WP2 activities. From OGF24 onwards, UEssex is editing the first document of the WG, "the NSI use cases document" mainly on the user-network-interface section. In addition UESSEX is contributing to the architecture document in the under the area of service discovery.

I2CAT presented the Harmony Service Interface developed under Phosphorus WP1 at OGF23 (Barcelona, June 2008) and moreover performed a demonstration on multi-domain, optical network resource brokering and provisioning using the first prototype of the Harmony system. From then on, i2CAT has been contributing to the network-to-network interfacing issue. In OGF25 (Catania, March 2009), i2CAT presented the latest work done in the group about topology sharing. From OGF25 onwards, i2CAT is contributing to topology sharing and multi-domain network reservation issues.

PSNC participated on the OGF23 during the WG Chapter. From then on, PSNC has contributed on the chain versus tree model of the NSI architecture providing valuable information related to communication mechanisms and messaging schemes.

2.9.4 Partner/ Person leading this effort in that working group

UESSEX: Eduard Escalona, Georgios Zervas, Dimitra Simeonidou

I2CAT Joan Antoni, Sergi Figuerola, Eduard Grasa

PSNC Radek Krzywania, Bartoz Belter

2.9.5 Role in that working group

Eduard Escalona: Co-founder, Contributing member

Georgios Zervas: Co-founder, Contributing member

Dimitra Simeonidou Co-founder, Contributing member

Joan Antoni Contributing member

Sergi Figuerola Contributing member

Eduard Grasa Contributing member

Radek Krzywania Contributing member

Bartoz Belter Contributing member

2.9.6 Expected outcome and tentative date

The main purpose of the NSI WG is to facilitate interoperation between Grid users, applications and network infrastructures spanning different service domains, via the development of abstract messaging and protocols. The NSI WG must provide a general and open definition independent of implementation of provisioning systems (e.g., Grid and network). It should be sufficiently flexible, modular and scalable to facilitate future enhancements. The NSI WG recommendation will allow any user and network service to interoperate by using a common naming and message definition. The NSI WG will also focus on identifying existing standardization activities/documents, understand their relevance and specify the relationships with regards to NSI (e.g., OGF (NM-WG, NML-WG) IETF, OIF). The use case document is currently expected in the second half of 2009 and the architecture standard is currently expected in the first half of 2010.

2.9.7 State of the work (e.g. under way, draft, proposed, recommendation)

The group is working both on a use-case document and the architecture document. A NSI Use case questionnaire has been created and filled in by several industrial and research institutions, which is used to cover several sections of the use case document and in turn provide valuable information for the architectural document too.

The discussion during the last OGF meeting in Chapel Hill (OGF 26) identified common requirements across NSI/NML/NMC. There is a need for grater coordination across groups, which will be addressed by

- formal cross attendance and representatives
- and a modular approach allowing re-use by different groups.

A matrix of common services across infrastructure groups will be prepared and the leading working group will be identified.

In parallel, the group started to more closely identify standards outside of OGF relevant to NSI.

2.10 OGSA-AUTHZ-WG – OGSA Authorization Working Group

2.10.1 Group description

The objective of the OGSA Authorization WG is to define the specifications needed to allow for basic interoperability and plug-ability of authorization components in the OGSA framework.

This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=ogsa-authz-wg

2.10.2 Partners active in this working group

UVA

2.10.3 What is the subject of the contribution?

UVA contributes to the discussion on a number of documents, In particular providing use cases, basic authorisation service functionality, definition and functional requirements to major authorisation service components.

2.10.4 Partner/ Person leading this effort in that working group

UVA: Yuri Demchenko

2.10.5 Role in that working group

Yuri Demchenko: Contributing member

2.10.6 Expected outcome and tentative date

Current contribution is ensuring that OGSA AUTHZ-WG standardisation takes into account use cases and specific requirements to AAA/AuthZ infrastructure for on-demand Optical Networks. Planned contribution will target on definition of authorisation session management mechanisms and policy obligations handling functionality required for multi-domain Optical Network Resource Provisioning. This will be proposed in the new charter of the follow-on WG.

2.10.7 State of the work (e.g. under way, draft, proposed, recommendation)

The group is hibernating and didn't meet during the last two OGF events. However, WP4 benefited from participation in the AUTHZ-WG activity by providing feedback to few documents and using WG's recommendations that were implemented in the WP4's development such as GAAA-TK library.

2.11 OGSA-RSS-WG – OGSA Resource Selection Service Working Group

2.11.1 Group description

The OGSA-RSS WG will provide protocols and interface definitions for the Selection Services portion of the Execution Management Services (EMS), which is a component of the Open Grid Services Architecture. The Resource Selection Services (RSS) consist of the Candidate Set Generator (CSG) and the Execution Planning System (EPS). The CSG can be used to generate a set of computational resources that are able to run a job in general, while the EPS uses this list to decide where to run the job. Other resources such as data are out of the scope of these services.

This group works on standards.

Link to group's page at OGF website:

http://www.ogf.org/gf/group_info/view.php?group=ogsa-rss-wg

2.11.2 Partners active in this working group

FHG

2.11.3 What is the subject of the contribution?

FHG contributes requirements and use-cases arising from MetaScheduling perspective being one of the consumers of the outcome of the resource selection service.

2.11.4 Partner/ Person leading this effort in that working group

FHG: Oliver Wäldrich

2.11.5 Role in that working group

Oliver Wäldrich: Contributing member

2.11.6 Expected outcome and tentative date

After submission of the final draft of the resource selection service specification to the OGF editor, a first review of the draft by the editor the group decided to split the RSS draft into two separate drafts: Candidate Set Generator specification (CSG) and Execution Planning Service specification (B-EPS). The two documents will be submitted to the editor in March 2009.

2.11.7 State of the work (e.g. under way, draft, proposed, recommendation)

The final drafts of CSG and B-EPS are submitted to the OGF document process.

2.12 WFM-RG – Workflow Management Research Group

2.12.1 Group description

The purpose of this group is to explore, evaluate and propose workflow representation and mapping techniques that enable the high-level description of application workflows and their execution in the Grid environment.

This research group is not working on standards but caries out activities to investigate the group's topic and to potentially spin-off an OGF working group later to work on standards.

Link to group's page at OGF website: `http://www.ogf.org/gf/group_info/view.php?group=wfm-rg`

2.12.2 Partners active in this research group

FHG

2.12.3 What is the subject of the contribution?

FHG contributes requirements and use-cases arising from MetaScheduling workflow components to Grid resources.

2.12.4 Partner/ Person leading this effort in that research group

FHG: Oliver Wäldrich, Wolfgang Ziegler

2.12.5 Role in that research group

Oliver Wäldrich: Contributing Member

Wolfgang Ziegler: Contributing Member

2.12.6 Expected outcome and tentative date

The outcome of the RG effort is a document describing workflow representation and mapping techniques that enable the high-level description of application workflows and their execution in the Grid environment.

2.12.7 State of the work (e.g. under way, draft, proposed, recommendation)

The group started working on a document exploring the levels of Workflow Interoperability. The document is still in an early state.

3 Conclusions

A number of PHOSPHORUS partners have been active in different research and working groups of the Open Grid Forum. Their involvement ranges from contributions to informational documents, proposed recommendations to co-chairing of some of the groups.

Several key technologies in the PHOSPHORUS project use work in progress or even already proposed recommendations of the OGF. At the same time, requirements arising from the PHOSPHORUS project are fed into the groups of the OGF influencing the work of the groups on different levels.

Partners of the project contribute to four research groups and six working groups of the OGF, co-chairing two of the research groups and two of the working groups. A new working group co-chaired by PHOSPHORUS partners will spin-off from the GHPN-RG during OGF 23 in Barcelona, June 2008. The partners contributed to a number of informational documents, some of them currently emerging, and to one proposed recommendation of the OGF.

The second update of the deliverable D7.2.2 at month 33 presented here confirms that the PHOSPHORUS project has achieved substantial impact in the standardisation processes of the OGF while continuing the successful work of the first 18 month.

4 Acronyms

AAA	Authentication, Authorisation, Accounting
AAI	Authentication and Authorisation Infrastructure
DDSS	Distributed Data Storage Systems
e2e	end to end
EGA	Enterprise Grid Alliance
EGEE	Enabling Grids for E-sciencE (European Grid Project)
FC	Fibre Channel
FC-SATA	Fibre Channel to SATA technology (mixed technology used in disk matrices: disk matrix have Fibre Channel ports for hosts connectivity, but contains SATA disk drives)
FI-RG	Firewall Issues Research Group
GEANT2	Pan-European Gigabit Research Network
GEANT+	the point-to-point service in GEANT2
GMPLS	Generalized MPLS (MultiProtocol Label Switching)
G2MPLS	Grid-GMPLS (enhancements to GMPLS for Grid support)
GHPN-RG	Grid High Performance Networking Research Group
GRAAP-WG	Grid Resource Allocation Agreement Protocol Working Group
GSA-RG	Grid Scheduling Architecture Research Group
GT4	Globus Toolkit Version 4 (Web-Service based)
JSDL-WG	Job Submission Description Language Working Group
KoDaVis	Tool for Distributed Collaborative Visualisation
MSS	MetaScheduling Service
NML-WG	Network Markup Language Working Group
NSI-WG	Network Service Interface Working Group
NREN	National Research and Education Network
NRPS	Network Resource Provisioning System
OGF	Open Grid Forum
OGSA-AUTHZ-WG	OGSA Authorisation Working Group
OGSA-RSS-WG	Open Grid Service Architecture Resource Selection Working Group
PoP	Point of Presence
QoS	Quality of Service
SNMP	Simple Network Management Protocol
TOPS	Technology for Optical Pixel-Streaming
TPD	Tiled Panel Display

UNI	User to Network Interface
UNICORE	UNIform Access to COmpute REsources (European Grid Middleware)
VLAN	Virtual LAN (as specified in IEEE 802.1p)
VIOLA	Vertically Integrated Optical Testbed for Large Applications in DFN (A German project funded by the German Federal Minitry of Education and Research)
VPN	Virtual Private Network
WFM-RG	Workflow Management Research Group

Appendix A

Open Grid Forum Overview

Who We Are

The Open Grid Forum (OGF) is a community of users, developers, and vendors leading the global standardization effort for grid computing. The OGF community consists of thousands of individuals in industry and research, representing over 400 organizations in more than 50 countries. Together we work to accelerate adoption of grid computing worldwide because we believe grids will lead to new discoveries, new opportunities, and better business practices.

The work of OGF is carried out through community-initiated working groups, which develop standards and specifications in cooperation with other leading standards organizations, software vendors, and users. OGF is funded through its Organizational Members, including technology companies and academic and government research institutions. OGF hosts several events each year to further develop grid-related specifications and use cases and to share best practices.

The OGF Mission

The Open Grid Forum accelerates grid adoption to enable business value and scientific discovery by providing an open forum for grid innovation and developing open standards for grid software interoperability.

A Brief History

The Open Grid Forum (OGF) is the "new" organization that resulted from the merger of the Global Grid Forum (GGF) and the Enterprise Grid Alliance (EGA).

The GGF grew out of a series of conversations, workshops, and Birds of a Feather (BoF) sessions that addressed issues related to grid computing. The first of these BoFs was held at SC98, the annual conference of the high-performance computing community. That meeting led to the creation of the Grid Forum, a group of grid developers and users in the U.S dedicated to defining and promoting grid standards and best practices. By the end of 2000, Grid Forum had merged with the European Grid Forum (eGrid) and the Asia-Pacific Grid Forum to form the Global Grid Forum. The first Global Grid Forum meeting was held in March 2001. Since then, the GGF has produced numerous standards and specifications documents and held successful events around the world.

The EGA was formed in 2004 to focus exclusively on accelerating grid adoption in enterprise data centres. The EGA addressed obstacles that organizations face in using enterprise grids through open, interoperable solutions and best practices. The alliance published the EGA Reference Model and Use Cases, a Security Requirements document and Data and Storage Provisioning document. The EGA also significantly raised awareness worldwide of enterprise grid requirements through highly effective marketing programs and regional operations in Europe and Asia.