

OGF and OGF-Europe, creating community led distributed computing standards for e-Infrastructures

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On behalf of OGF and OGF-Europe

Summary

- OGF
 - What it is and how it fits together?
- OGF-Europe
 - How we map to OGF?
 - What we do
- EU projects and SDO relationships capture
- Future directions of OGF and OGF-EU

- Introducing the Open Grid Forum
 - International Standards Organization modeled after the IETF
 - June 1999
 - Grid Forum 1, NASA Ames, Mountain View
 - March 2001
 - Global Grid Forum 1: NIKHEF/SARA, Amsterdam
 - June 2006
 - Merged with the Enterprise Grid Alliance – (EGA) to become OGF
- Established document process and document series
 - Currently at 148 documents (7, full Recs., 34 proposed Recs., 74 Informational, 16 Experience, 12 Community Practice)

Source: Craig Lee, OGF President March 2009, SATCCI

Mission

OGF is an **open community** committed to driving the rapid evolution and adoption of **applied distributed computing**. Applied Distributed Computing is critical to developing new, **interoperable**, innovative and **scalable** applications and infrastructures that are essential to productivity in the enterprise and within the science community.

OGF Operational Functions

Function	Description
Standards	The Standards function is responsible for development of architectures, specifications, roadmaps, and related activities associated with the standardization and interoperability of grid software. This includes the management of technical liaisons with other Standards Development Organizations (SDOs)
Enterprise	The Enterprise function is responsible for working with business, IT and vendor communities to identify and align requirements; workshop solutions; and share progress
e-Research	The eResearch function is responsible for working with scientific, engineering and education communities to enable productive forums to identify and align requirements; workshop solutions; and share progress

Standards

Area Name	Area Focus	What the Area Delivers
Architecture	High Level Designs, Specifications & Profiles	Delivers informational and normative documents regarding grid architectures, frameworks, profiles and core functions not specific to other areas.
Liaison	Collaboration with SDO's	Facilitates information exchange and promotes collaboration with Standards Development Organizations (SDOs) within the industry.
Application	Specifications and Profiles	Delivers specification documents focused on grid application development issues and programming interfaces.
Data	Specifications and Profiles	Delivers specification documents for the access, management and transport of data on grids.
Compute	Specifications and Profiles	Delivers specification documents focused on the description and execution of computational tasks, and the scheduling and negotiation of grid resources.
Management	Specifications and Profiles	Delivers specification documents on the management of essential grid operating components, such as policies, processes, equipment, and data, for overall effectiveness of grid systems, storage, applications, and services.
Security	Specifications and Profiles	Delivers specification documents focused on authentication, authorization, privacy, confidentiality, auditing, firewalls, trust establishment, policy establishment, and dynamics, scalability and management aspects of security.
Infrastructure	Specifications and Profiles	Delivers specification documents to interface grid middleware and lower layer resources such as computers, storage, instruments, and sensor technologies.

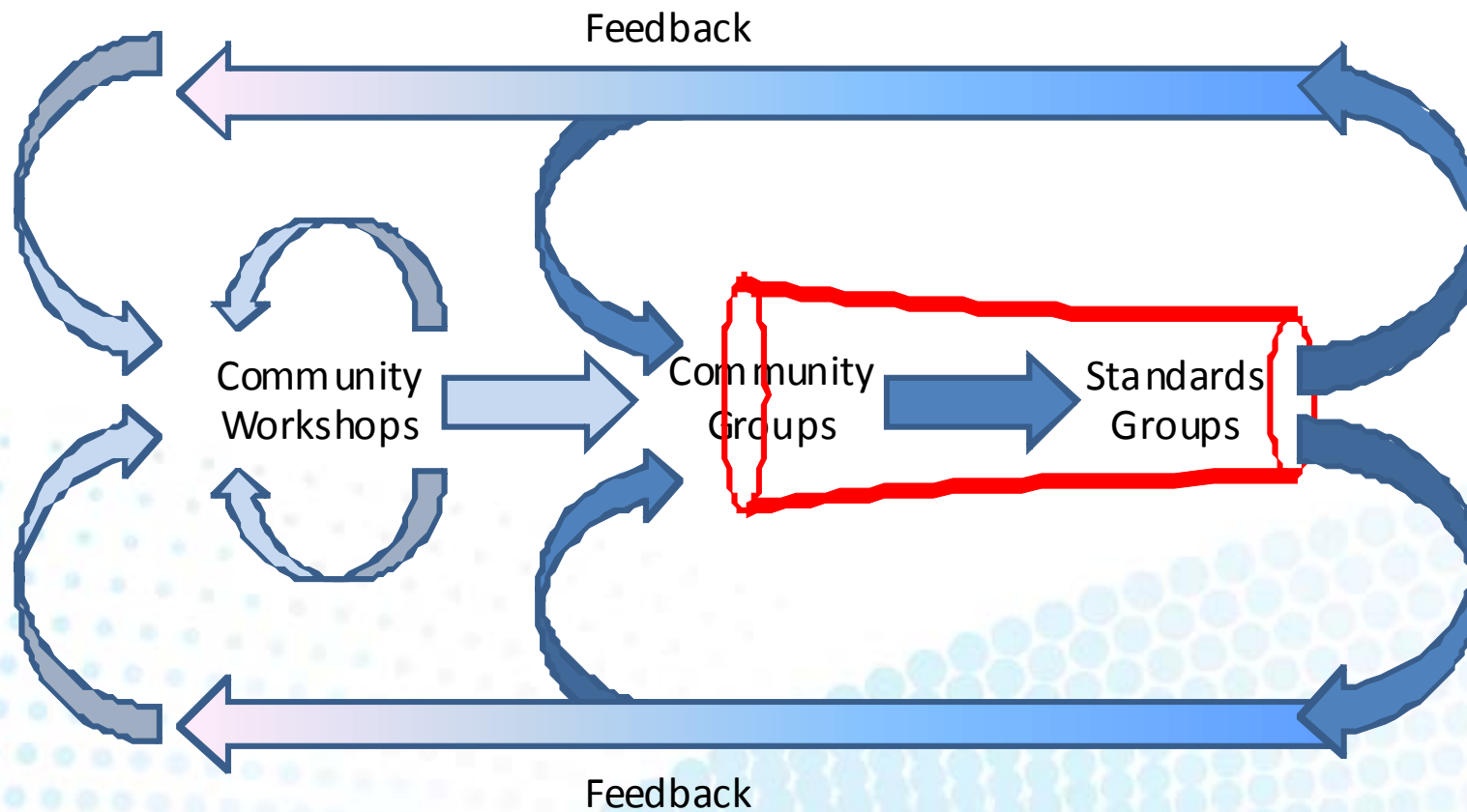
Enterprise

Area Name	Area Focus	Area Deliverables
Enterprise Adoption	Help IT & Line of Business be successful with Grid technology	<ul style="list-style-type: none"> • Event content (BoFs, panels, tutorials, etc.) for OGF and non-OGF partner events • Web presence/content via OGF website that provides information on how to gain business value and apply Grid technology • Demonstrations of actual Grid technology in use
Vendor & Developer Adoption	Work with vendors & developers to adopt OGF standards	<ul style="list-style-type: none"> • OGF event workshops between vendors & developers and OGF standards groups/TSC to comprehend vendors & developers requirements and align OGF standards roadmap with developers & vendors roadmaps • Web-based repository/document to capture vendors & developers requirements
End-User Requirements	Work with OGF standards to comprehend enterprise requirements	<ul style="list-style-type: none"> • OGF event workshops between IT & Line of Business professionals and OGF standards groups/TSC to comprehend IT & Line of Business professionals requirements in terms of usage models • Web-based repository/document to capture IT & Line of Business requirements
Best Practices	Produce Best Practices documents and make available via the web	<ul style="list-style-type: none"> • Growth of Best Practices relative to the number of problems identified • Web site hits and reads of actual Best Practice documents • Application and testimonial of Best Practices by end users • Satisfaction rating from the OGF enterprise community about the usefulness and timeliness of Best Practice documents

e-Research

Area Name	Area Focus	What the Area Delivers
Technology Innovators	Lead enhancement of science and engineering by use of Grids/CI	<ul style="list-style-type: none"> • Web and Program content, demonstrations, and outreach delivered primarily via OGF and partner events, OGF website and special outreach programs • Promote development of domain specific best practice and standards
Research Applications	Research into next generation grid/CI and distributed computing technologies	<ul style="list-style-type: none"> • Structured workshops on a variety of grid and distributed computing related technologies • Science based web site; community tools

Relationship between communities and standards

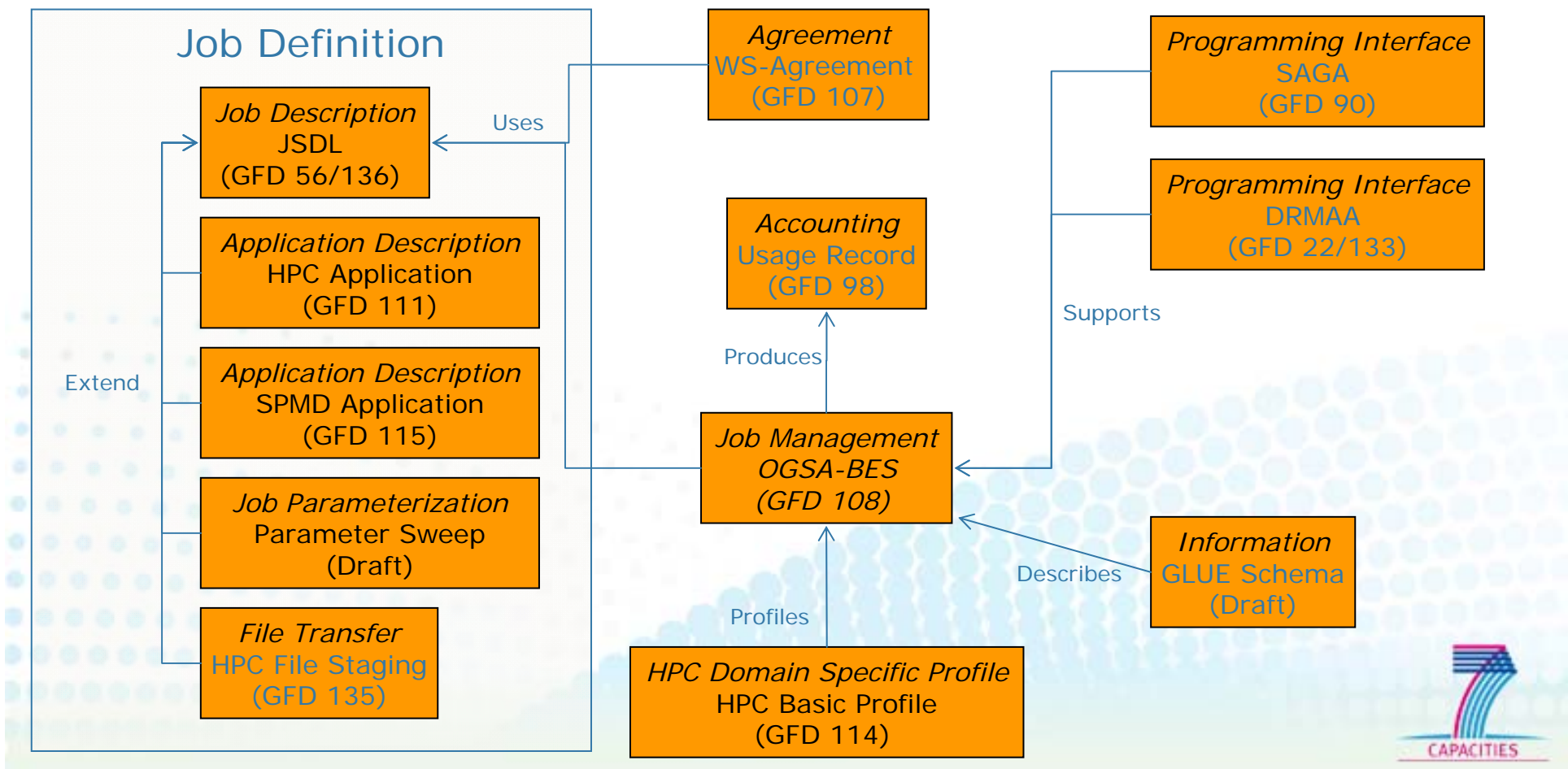


Compute Related Standards

Architecture
OGSA EMS Scenarios
(GFD 106)

Use Cases
Grid Scheduling Use Cases
(GFD 64)

Education
ISV Primer
(GFD 141)

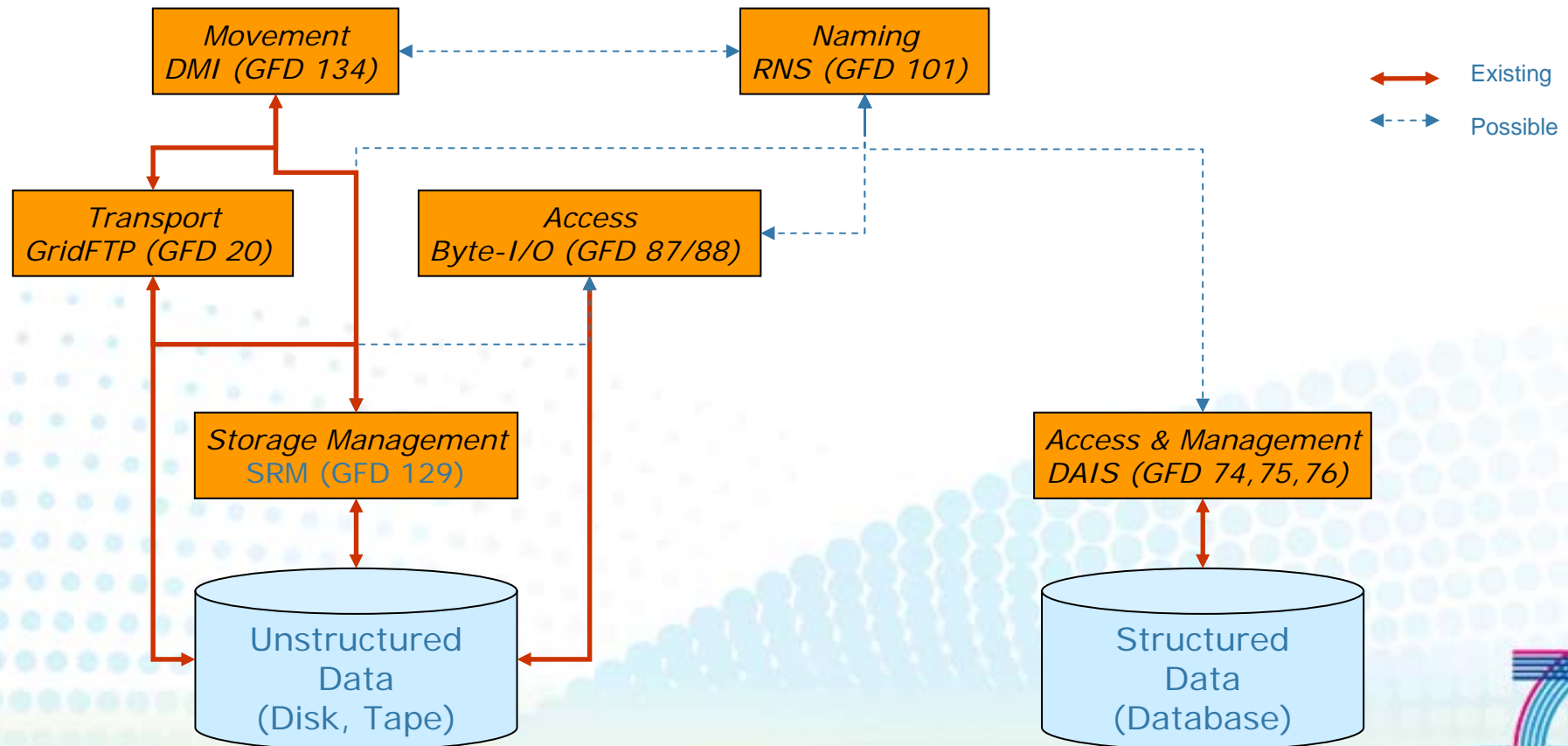


Data Related Standards

*Data Format
Description Language*

*Storage Network
Community*

*Information Dissemination
InfoD (GFD 110)*



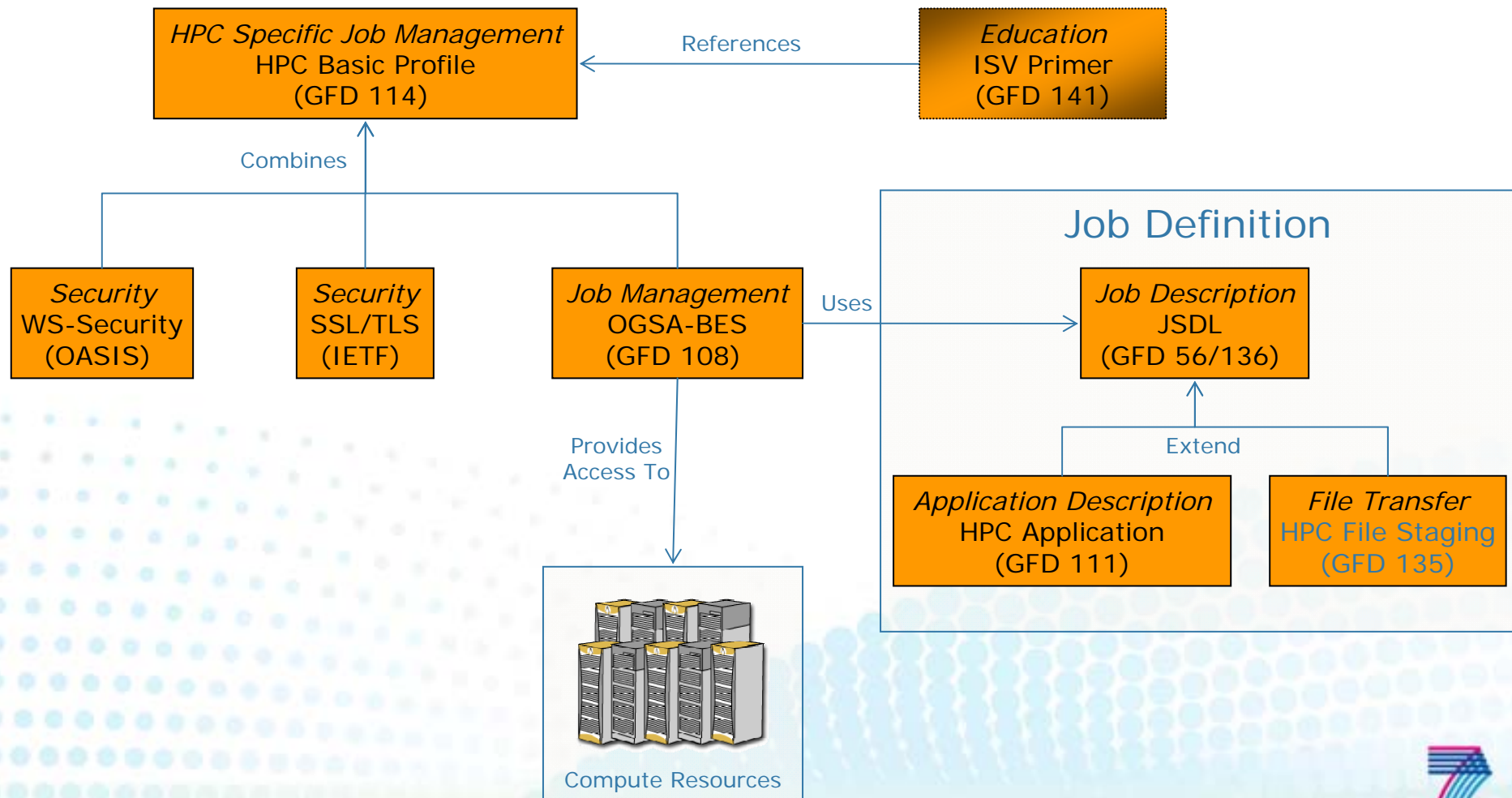
OGF Strategy

- OGF has the goal that users can build operational grids using OGF-defined standards, protocols, and best practices.
- To do this we need to;
 - Identify the main, common use-cases, patterns, and scenarios that users require
 - Develop best practice documents that allow users to adopt Grids today and provide a pathway for the standards process
 - Add to the core architectural standards required to build robust, commercially viable, grid solutions
 - Encourage software developers to implement standards in products

Strategy example, Submission of compute tasks

1. Low level standards to describe interface and tasks
2. Profile these and other standards to enable implementations of services, HPC – Basic Profile
 - 4 commercial and 3 academic
 - Demonstrated @ SC07 & SC08
3. Collect shortcomings and requirements for further interoperability, Grid Interoperability Now Community Group
4. Create new group for profiling these new requirements, Production Grid Infrastructure Working Group
 - EGEE, DEIS & NorduGrid as well as US and Japanese middleware developers
5. Publish new profile and or extended standards

Standards in HPC Basic Profile



OGF-EUROPE

Making an impact

- Promoting the value of standardisation enabling innovation
- Developing standards with end-users, developers, diverse groups
- Connecting user groups to share best practices & transform them into standards
- Supporting the implementation of European standards
- Fostering synergies between other SDOs such as W3C, SNIA, DMTF, OASIS
- Ensuring OGF standards are aligned with the needs of European stakeholders

How do we do this?

- **Bridging the gap** between OGF standards and the needs of Stakeholders through Community Outreach Seminars

Delivering multiple COS in key EU regions (1/2)

Community Topic	Relation to Standards	Achievements and next 12 month follow-up
Digital Repositories	The Grid Storage Management (GSM) 2008 promoted the GSM an international standard for Storage Resource Management (SRM). To Address data access, large scale transfer, security, estimation of transfer, metadata, etc	Support towards the set-up of an <i>OGF Digital Repositories Research Group</i> 2 topics: A) Architecture Study B) Metadata Use-Case collection
Cloud Computing	OGF plans for 2009 in the areas of: eScience Clouds, Campus Clouds, Supercomputing Clouds Goals include scientific or e-research on clouds and enable OGF the place to explore next generation software models.	1) Cloudscape Exploring the Impact of Cloud Computing on Enterprise IT, Jan 2009 Brussels. 2) OGF25 Catania March 2009 From Grids to Clouds, a workshop for Grid users facing the Cloud 3) Autumn 2009: Leveraging your Grid to offer Cloud Services
Software Development	In OGF -2 standards already in the process of becoming recommended. Simple API for Grid Applications (SAGA) & Distributed Resource Management Application API (DRMAA).	COS at OGF25 Mar 2009 Software development tools for distributed computing.

Delivering multiple COS in key EU regions (2/2)

Community Topic	Relation to Standards	Achievements and next 12 month follow-up
Service Oriented Infrastructure in Telco	One of the principle objectives of this topics is to increase OGF ties with the Telecommunications sector and reinvigorate the OGF Telco WG.	OGF-Europe collaboration with ETSI and OGF Telco WG for a COS are currently being discussed. The 2009 PlugTest event as potential venue.
Green IT	OGF context workshop in collaboration with the Usage Records WG, JSDL (Job submission description language WG, GLUE WG and HPCBP WG , at which the outcome would be to scope out a profile document for how you can add energy utilisation information	1st COS at OGF25 Mar 2009 The WG to enhance this visibility of CO2, and other physical properties, by proposing a standard information interchange format between users, physical asset management systems and workload management services. Build on existing mechanisms such as Usage Records, Resource Usage Service and GRAAP.
Creative Industries	Interest in the use of OGF standards to address the issue of distributed data management for large data sets used in frame rendering in post production. Also applicable in engineering and financial services applications .	Capitalise on interest in the CI Sector, work alongside sister projects in the UK to attract a wider audience. Event being planned for early Summer 09.

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Enterprise activities & Industry Expert Group (IEG)

- Rationale:
 - Volunteer group of industry leaders in distributed computing
 - Ensure that the OGF-EU programme is attractive to industrial organisations
- Chair: Fabrizio Gagliardi, Microsoft
 - Selected for extensive experience and knowledge of European Grid activities
- Achievements:
 - Vision and agenda for Cloudscape event
 - Addressed a growing interest in Cloud and Grid
 - Post event reports summarise content and discussion
 - Influenced the OGF Agenda for Grid to Cloud transition
 - 8 phone conferences, 3 F2F meetings (**Year 1:** OGF23, ICT2008, **Year 2:** OGF25)
- Future:
 - Capitalise on community interest in Cloud
 - Follow on workshop “Leveraging your Grid to offer Cloud Services”
 - VP Enterprise to facilitate

The IEG Distinguished Panel of Experts

Chair: Fabrizio Gagliardi, Microsoft

Panel: David Abramson, Monash
University

Avner Algom, Israeli Association of
Grid Technologies (IGT)

John Easton, IBM

Vincent Franceschini, Hitachi Data
Systems

Rhys Francis, Australian eResearch
Infrastructure Council

Joerg Freund, Siemens

Andrea Manieri, Engineering

Inder Monga, Nortel Networks

Daniel Scheibli, SAP

Bernhard Schott, Platform
Computing

Satoshi Sekiguchi, Institute of
Advanced Industrial Science &
Technology (AIST)

Raffaele Sgherri, Avanade

David Snelling, Fujitsu Labs Europe

Paul Strong, eBay

Martin Walker, independent
consultant

Gabriel Zaquine, BT France

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International Events

- Raising **interest** in **importance** of **standards** & **benefits** of **interoperability**
- **Interaction** with **EU projects** to enhance **standardisation efforts**
- **Wider community outreach** & fostering **understanding** of **new technology developments** targeting the **commercial sector**

Event	OGF-Europe Focus
OGF24, 15-19 September 2008, Singapore	Joint EGI/OGF-Europe Workshop : “EU-Asia Pacific Collaborations on Grid & Future Challenges”. Technical Workshops , “Communication Meeting”.
EC Concertation Meetings, June 2008 and November 2008	Presentations, interactive discussions & Moderators of Distributed Computing Track on standards.
CCGrid, Lyon, France, May 2008 ICT2008, Lyon, November 2008	Presentations on strategic role of standards .
RECURSE Workshop, Edinburgh, December 2008	Connecting experts to evaluate the role of OGF & standards for Digital Repositories
Cloudscape, January 2009	Exploring clouds & grids from diverse perspectives

Increasing participation & contribution by EU-based Grid solution providers in OGF's Community Practice Thought Leadership Series

OGF24, September 2008, Singapore

EU and Asia-Pacific Grid Collaboration and Future Challenges (3 sessions) Co-organised by OGF-Europe and EGI_DS

- >20 participants from 10 countries
- Agenda (see online OGF24)

About 20 EU Asia collaborating projects:
OGF-Europe, egi, GridTALK, ORIENT, EUMED connect, 6Deploy, GO4IT, EXPReS, 6CHOICE, egee, EUIndiaGrid, euchinagrid, EUAsiaGrid, ECGIN, SEE-GRID-SCI, ee la, Auger access, D4Science, global-project.eu, Belief...

- Alex Voss — EUAsiaGrid
- Steve Crouch - OMII-UK/OMII-Europe and OMII-China
- Eric Yen - Integration of an Asian NGI with European counterparts
- Kazushige Saga - Cyber Science Infrastructure and NAREGI Grid middleware

- Follow up session at OGF25 „Grid & Collaborating Projects“



Cloudscape Workshop

14 – 15 Jan 2009, Brussels, Belgium

- Organised by OGF-Europe
- 100+ participants
- Themes:
 - Cloud & Distributed Computing Players, Market Perception & Analysis
 - Key Challenges: Interoperability, Policy, Standards, SOIs, SLAs, Security
 - Enterprise Usage of Clouds
- Panel, position papers
- Key conclusions:
 - Adoption criteria (Cost, Provisioning, Location, Inter-operation)
 - Interest in Grid enabled Cloud Services



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- **Analysing the needs of EU enterprise & eScience communities** & ensuring OGF standards are aligned with industry needs through reports on **adoption challenges, best practices & user case studies**

European contribution to International e-Infrastructures & Standardisation activities

- Ensure that standards developed are suited to European requirements;
 - 2 surveys on Grid adoption, capturing key impediments and requirements from the communities
- Synchronise requirements across key stakeholder communities, through stronger engagement from Europe, and accelerate end-user adoption;
 - Adoption challenge reports bridging communities including academia, industry and IT providers
- Create a stronger voice in shaping European and global priorities while emphasising the need for open standards.
 - Support interoperability groups within OGF including creation of previously mentioned Production Grid Infrastructure WG to drive the EU focus on production e-infrastructure middleware based on standards and interoperability
- Orientate the next generation of e-Researchers to the necessity of standards and engage them from an early stage in their careers
 - Student and expert scholar program for OGF events

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- Integrate the OGF-Europe activities closely to that of OGF

OGF & OGF-Europe Relationships

Name & Affiliation	Role
Ian Osborne, Intellect, UK	VP-Enterprise, Provide thought leadership on enterprise activities
David Wallom, University of Oxford, UK	VP-e-Research, Provide thought leadership on e-Research activities
Silvana Muscella, OGF.eeig, UK	OGF Board member, provide updates on OGF-Europe activities and find further synergies with OGF
Sergio Andreozzi, INFN, Italy	Co-Chair Glue-WG
Fabrizio Gagliardi, Microsoft Research	Chair, OGF-Europe Industry Expert Group & OGF AdCom member
Martin Anthony Walker	AdCom Chair
Paul Strong, eBay	OGF Board and OGF-Europe IEG member
David Snelling, Fujitsu Labs Europe, UK	OGF Board and OGF-Europe IEG member

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- **Analysing the needs of EU enterprise & eScience communities** & ensuring OGF standards are aligned with industry needs through reports on **adoption challenges, best practices & user case studies**
- Integrating the OGF-Europe activities closely to that of OGF
- Actively contributing to EC Concertation meetings on Standards, Distributed Computing, providing input into

EU Projects and SDO

- Collation of participation in SDO by EU Framework projects
 - Investigate;
 - Engagement
 - Personnel commitments
 - Long term aspirations
- Returns so far indicate that over 65% of projects are engaged with standards bodies, with a large fraction of these contributing personnel to the standardisation process
- Communicating with these to gauge specifics about strength of engagement etc.

OGF-Europe and EGI

- Utilise OGF-EU efforts to capture requirements of communities outside the current mainstream e-infrastructure users
- Inform the process by which the underlying middleware discussions will be made as EGI moves forward

- Several items on current e-IRG roadmap directly relevant to OGF-EU activities
 - Grid and cloud including virtualization
 - Security
 - Education and training
 - Global Collaboration
 - Sustainability of e-infrastructure
 - Remote Instrumentation
- Outputs from further OGF-EU events and activities must be used to further inform the roadmap as it moves forward
- OGF-EU must be involved taking project outputs and either presenting them in e-IRG workshops or including them in documents

Future Directions of OGF & OGF-Europe

- Manage End-to-End Standards Process including possible compliance testing activity
- Assist co-ordination between NSF, EU and other funding agencies
- Requirements gathering from the community
 - Integrating facilities smoothly from the department to the international
 - Higher level services built on our current standard building blocks
 - Data access and interoperability
 - Cloud management interface standardisation (OCCI-WG)
- Driving Standards Activities more within European Research Technology Development projects
- Collaborations with other new Standards Bodies
 - OCC, CCA
- Provide input where possible into EGI and e-IRG roadmaps and or outputs

Conclusions

- OGF is moving to an exciting point where a significant number of recommended standards are being implemented by commercial and academic providers and deployed by user communities, with a large number of interoperability efforts underway
- OGF-Europe has provided a means by which Europe can lead and define the OGF roadmap as it moves forward
- There are a significant number of projects within the EU portfolio that correctly see standards and interoperability as essential
- EU e-Infrastructure cannot be constructed as an island, it must connect quickly and easily to ongoing activities occurring globally