

# Global Grid Forum (GGF)

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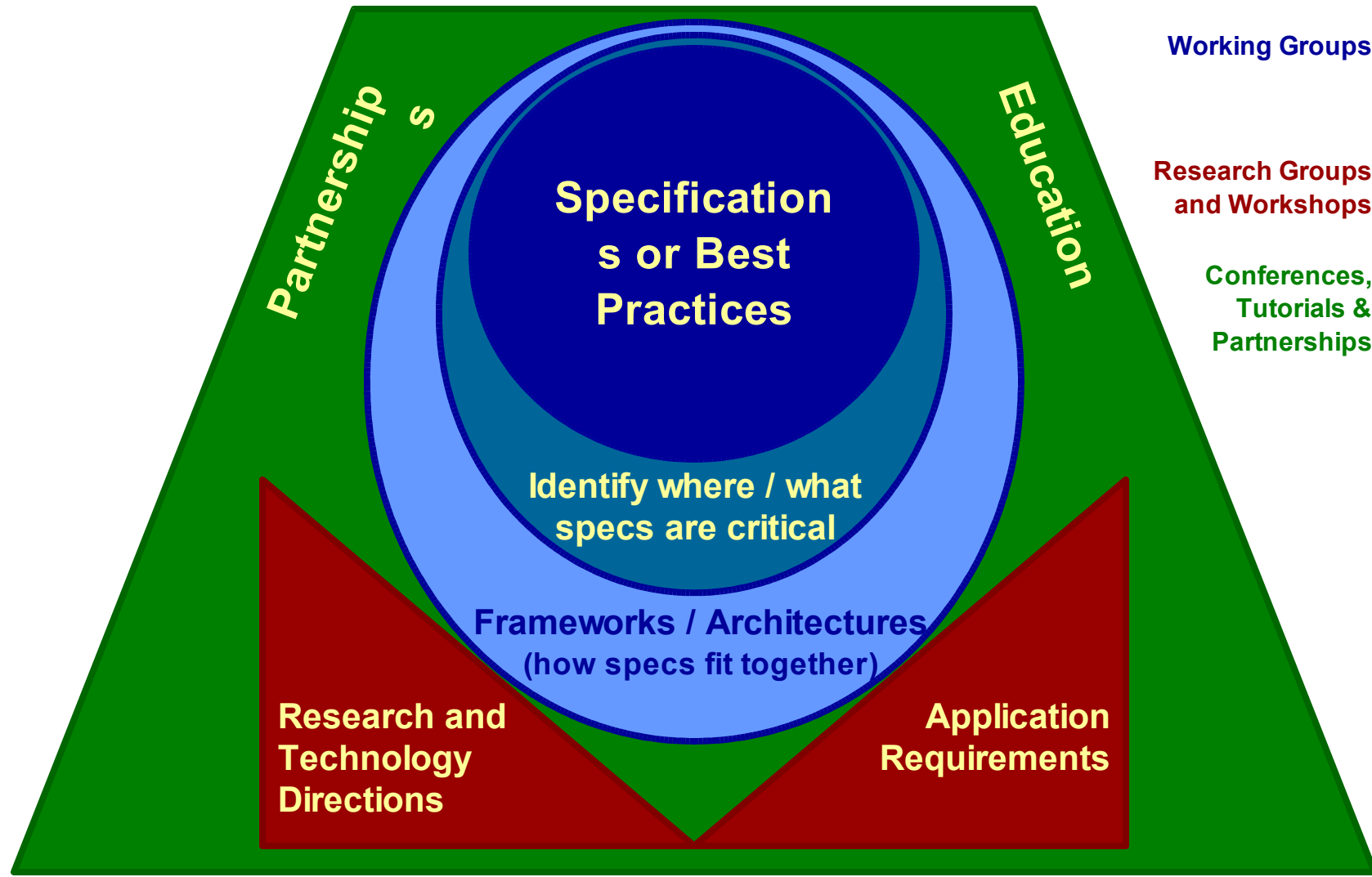
***A GGF primer***



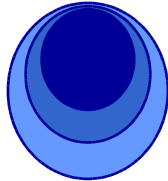
# GGF Objectives

- **An Open Process for Development of Standards**
  - Grid “Recommendations” process modeled after Internet Standards Process (IETF)
  - Persistent, Reviewed Document Series (similar to RFC)
- **A Forum for Information Exchange**
  - Experiences, patterns, structures
  - Useful even if every application & Grid were completely separate and not interoperable...but ideally will result in interoperability!
- **A Regular Gathering to Encourage Shared Effort**
  - In code development: libraries, tools...
  - Via resource sharing: shared Grids
  - In infrastructure: consensus standards

# GGF Mission



Working Groups



Research Groups and Workshops



Conferences, Tutorials & Partnerships



# GGF Groups

## • Working Groups

- Tightly focused on development of a specification or set of related specifications
  - Protocol, API, etc.
- Finite set of objectives and schedule of milestones

Groups are approved and evaluated by a GGF Steering Group (GFSG) based on *written charters*. Among the criteria for group formation:

- Is this work better done (or already being done) elsewhere, e.g. IETF, W3C?
- Are the leaders involved and/or in touch with relevant efforts elsewhere?

## • Research Groups

- More exploratory than Working Groups
- Focused on understanding requirements, taxonomies, models, methods for solving a particular set of related problems
- May be open-ended but with a definite set of objectives and milestones to drive progress
- Renewed every 2 years

# GGF Areas

- **Areas are primarily management constructs**
  - Not the “chapters” of a Grid text book - formed from original research areas of interest, expanded as needed
  - Within an area are Research Groups and Working Groups
- **Current Areas:**
  - Applications, Programming Models and User Environments
  - Architecture
  - Data
  - Peer-to-Peer
  - Performance and Information Services
  - Scheduling and Resource Management
  - Security

# 42 Current GGF Groups

## **Applications and Programming Environments**

Grid Checkpoint/Recovery (GridCPR-WG)  
Grid Remote Procedure Call (GridRPC-WG)  
User Program Development Tools For The Grid (UPDT-RG)  
Grid Computing Environments (GCE-RG)  
Life Sciences Grid (LSG-RG)

Advanced Collaborative Environments (ACE-RG)  
Applications and Test Beds (APPS-RG)  
Grid User Services (GUS-RG)  
Production Grid Management (PGM-RG)

## **Architecture**

Open Grid Services Infrastructure (OGSI-WG)  
New Productivity Initiative (NPI-WG)  
Open Grid Service Common Mngt. Model (CMM-WG)  
Service Management Frameworks (SMF-RG)

Semantic Grid (SEM-RG)  
Open Grid Services Architecture (OGSA-WG)  
Grid Protocol Architecture (GPA-RG)

## **Data**

GridFTP-WG  
OGSA Data Replication Services (OREP-WG)  
Grid High-Performance Networking (GHPN-RG)  
Data Format Description Language (DFDL-WG)

Data Access and Integration Services (DAIS-WG)  
Persistent Archives (PA-RG)  
Data Transport (DT-WG)

## **Information Systems and Performance**

Discovery and Monitoring Event Description (DAMED-WG)  
Grid Information Retrieval (GIR-WG)  
Relational Grid Information Services (RGIS-RG)

Network Measurement (NM-WG)  
CIM based Grid Schema (CGS-WG)  
Grid Benchmarking (GB-RG)

## **Peer-to-Peer**

Appliance Aggregation

OGSA-P2P-Security

## **Scheduling and Resource Management**

Distributed Resource Mgmt. Application API (DRMAA-WG)  
OGSA Resource Usage Service (RUS-WG)  
Usage Record (UR-WG)

Grid Resource Allocation Agreement Protocol (GRAAP-WG)  
Grid Economic Services Architecture (GESAWG)

## **Security**

Grid Security Infrastructure (GSI-WG)  
Open Grid Service Architecture Security (OGSA-SEC-RG)  
Authorization Frameworks and Mech. (AuthZ-WG)

Grid Certificate Policy (GCP-WG)  
CA Ops (CAO-WG)  
Site Auth., Authorization, and Accounting Req (SAAA-RG)

# Grid Standards








- **GGF Document Series Modeled after IETF RFC Series**
  - **Informational or Experimental**
    - Objective: To inform of relevant/interesting work
    - Example: “Ten Actions when SuperScheduling”
  - **Community Practice**
    - Objective: To document commonly agreed-upon approaches, methods, etc. (often non-technical)
    - Example: “GGF Document Process”
  - **Recommendations Track**
    - Objective: To document a technical standard
    - Example: “Open Grid Services Infrastructure (OGSI) Version 1”
      - Technical specification, allows for building interoperable systems
      - Does not declare an “exclusive” solution- may be multiple standards, just as FTP (an Internet standard) is not the exclusive data transfer protocol for the Internet.

# Current Documents

<b>GFD-C.1</b>	<b>GGF Document Series</b>	<b>C. Catlett</b>
<b>GFD-C.2</b>	<b>GGF Structure</b>	<b>C. Catlett, I. Foster, W. Johnston</b>
<b>GFD-C.3</b>	<b>GGF Management</b>	<b>C. Catlett, I. Foster, W. Johnston</b>
<b>GFD-I.4</b>	<b>Ten Actions When Superscheduling</b>	<b>J. Schopf</b>
<b>GFD-E.5</b>	<b>Advanced Reservation API</b>	<b>V. Sander, A. Roy</b>
<b>GFD-I.6</b>	<b>Attributes for Communication between Scheduling Instances</b>	<b>U. Schwiegelshohn, R. Yahyapour</b>
<b>GFD-I.7</b>	<b>A Grid Monitoring Architecture</b>	<b>B. Tierney, R. Aydt, D. Gunter, W. Smith, M. Swany, V. Taylor, R. Wolski</b>
<b>GFD-I.8</b>	<b>A Simple Case Study of a Grid Performance System</b>	<b>R. Aydt, D. Gunter, W. Smith, M. Swany, B. Tierney, V. Taylor</b>
<b>GFD-I.9</b>	<b>Overview of Grid Computing Environments</b>	<b>G. Fox, M. Pierce, D. Gannon, M. Thomas</b>
<b>GFD-I.10</b>	<b>Grid User Services Common Practices</b>	<b>J. Towns, J. Ferguson, D. Frederick, G. Myers</b>
<b>GFD-I.11</b>	<b>Grid Scheduling Dictionary of Terms and Keywords</b>	<b>M. Roehrig, W. Ziegler, P. Wieder</b>
<b>GFD-I.12</b>	<b>Security Implications of Typical Grid Computing Usage Scenarios</b>	<b>M. Humphrey, M. Thompson</b>
<b>GFD-I.13</b>	<b>Grid Database Access and Integration: Requirements and Functionalities</b>	<b>M. P. Atkinson, V. Dialani, L. Guy, I. Narang, N.W. Paton, D. Pearson, T. Storey, P. Watson</b>
<b>GFD-I.14</b>	<b>Services for Data Access and Data Processing on Grids</b>	<b>V. Raman, I. Narang, C. Crone, L. Haas, S. Malaika, T. Mukai, D. Wolfson, C. Baru</b>



# Drafts in Editorial Pipeline

<u>Type</u>	<u>GFSG Review</u>	<u>Public Comment (end date)</u>	<u>Final Draft Editor Review</u>	<u>Title</u>	<u>Author(s)</u>
INFO	n/a	√ 5/20/03		An Analysis of the UNICORE Security Model	T. Goss-Walter, R. Letz, T. Kentemich, H.-C. Hoppe, P. Wieder
CP	√	√ 5/29/03		Global Grid Forum Certificate Policy Model	R. Butler, T. Genovese
INFO	n/a	√ 5/29/03		CA-based Trust Issues for Grid Authentication and Identity Delegation	M. Thompson, D. Olson, R. Cowles, S. Mullen, M. Helm
REC	√	√ 5/29/03		Distributed Resource Management Application API Specification 1.0	H. Rajic, R. Brobst, W. Chan, F. Ferstl, J. Gardiner, J. P. Robarts A. Haas, B. Nitzberg, J. Tollefsrud
REC	√	√ 6/5/03		Open Grid Services Infrastructure (OGSI) Version 1	S. Tuecke, K. Czajkowski, I. Foster, J. Frey, S. Graham, C. Kesselman, T. Maquire, T. Sandholm, D. Snelling, P. Vanderbilt
CP	√	 7/15/03		Job Descriptions for GGF Steering Group Members	J. Schopf, B. Nitzberg, P. Clarke, C. Catlett
REC				GridFTP: Protocol Extensions to FTP for the Grid	W. Allcock, ed.

# GGF Governance

- **Initial Establishment of GGF**

- GGF Chair, initial GFSG appointed by plenary vote
  - October 1999
- GFAC members appointed by GFSG
- Expansions of GFSG and GFAC in 2000, 2001, and 2002
  - New members selected by general consensus of existing GFAC, GFSG
- Working Group and Research Group Chairs
  - Appointed by GFSG in conjunction with proposed group charter

- **Current Proposed GGF Governance Process**

- GGF Chair
  - Three year term, renewable, nominated by GFSG
- GFSG: ADs and Executive Committee
  - Three year term, renewable, nominated by (RFC2727) Nominating Committee
- GFAC and GROC members
  - Nominated by GFSG, GFAC and invited by Board of Directors, GGF, Inc.
- **STATUS**
  - Nominating committee to be formed in March 2003 to select “Class of 2003” GFSG members. Chair Brian Tierney (LBNL)

# GGF Chair and GGF Editor

## • GGF Chair

- Overall Structure and effectiveness of GGF
  - Governance Role: GFSG evaluation
    - Regular evaluation of effectiveness of GFSG
  - Governance Role: Area Formation and Operation
    - Work with GFSG to evaluate need for changes in area structure (create, merge, etc.)
  - Chairs GFSG, serves as liaison between GFSG and GFAC
- Represents GGF to external entities
- Ensures that GGF meeting schedule, structure, logistics support the GGF mission

## • GGF Editor

- Manages document process flow for all GGF Documents
- Facilitates GFSG review of documents (CP and REC)

# GFSG

- **GGF Steering Group**

- Ian Baird (Platform Computing)
- Charlie Catlett (ANL) [Chair]
- Andrew Chien (Entropia)
- Peter Clarke (UCL/UK)
- Cees DeLaat (UVA/NL)
- Ian Foster (ANL/UC)
- Andrew Grimshaw (Avaki)
- Marty Humphrey (UVa)
- Bill Johnston (LBL)
- Ken Klingenstein (Internet2)

- **GFSG Role**

- Operational Management and policy
- Document series review
- Chartering of new groups
- Group oversight and review

- Domenico LaForenza (CNUCE)
  - Satoshi Matsuoka (Tokyo Inst. Tech)
  - Jeff Nick (IBM)
  - Bill Nitzberg (Veridian)
  - Jennifer Schopf (ANL)
  - Satoshi Sekiguchi (ETL)
  - Steve Tuecke (ANL)
- (members up for re-nomination 3/03)

- **GFSG Structure**

- Two area directors per area
- Oversee liaisons with Other Groups

- **GFSG Participation**

- Individuals, not representatives
- Selected by Nomcom

# GGF External Advisory Committee (GFAC)

## • GFAC Members

- Kyriakos Baxevanidis (EU/CEC)
- Frederica Darema (US NSF)
- Bill Feiereisen (LANL)
- Fabrizio Gagliardi (CERN)
- Tony Hey (UK)
- John Hurley (CAU)
- Sangsan Lee (KISTI)
- Paul Messina (Caltech) [chair]
- Yoichi Muraoka (Waseda Univ)
- Simon Nicholson (Sun)
- Alexander Reinefeld (ZIB)
- Mary Anne Scott (US DOE)
- Rick Stevens (ANL)
- Martin Walker (HP)
- Irving Wladawsky-Berger (IBM)

## • GFAC Role

- External long-range advice
- Strategies for partnerships, governance, liaisons
- Global perspective
  - Representatives from multiple regions

## • GFAC Status

- Expect to add 4-6 new members in 2003
- Emphasis on increasing industry participation in GFAC

## • GFAC Participants

- Invited as individuals to give wise advice.
- Not “representatives”

# Grid Research Oversight Council (GROC)

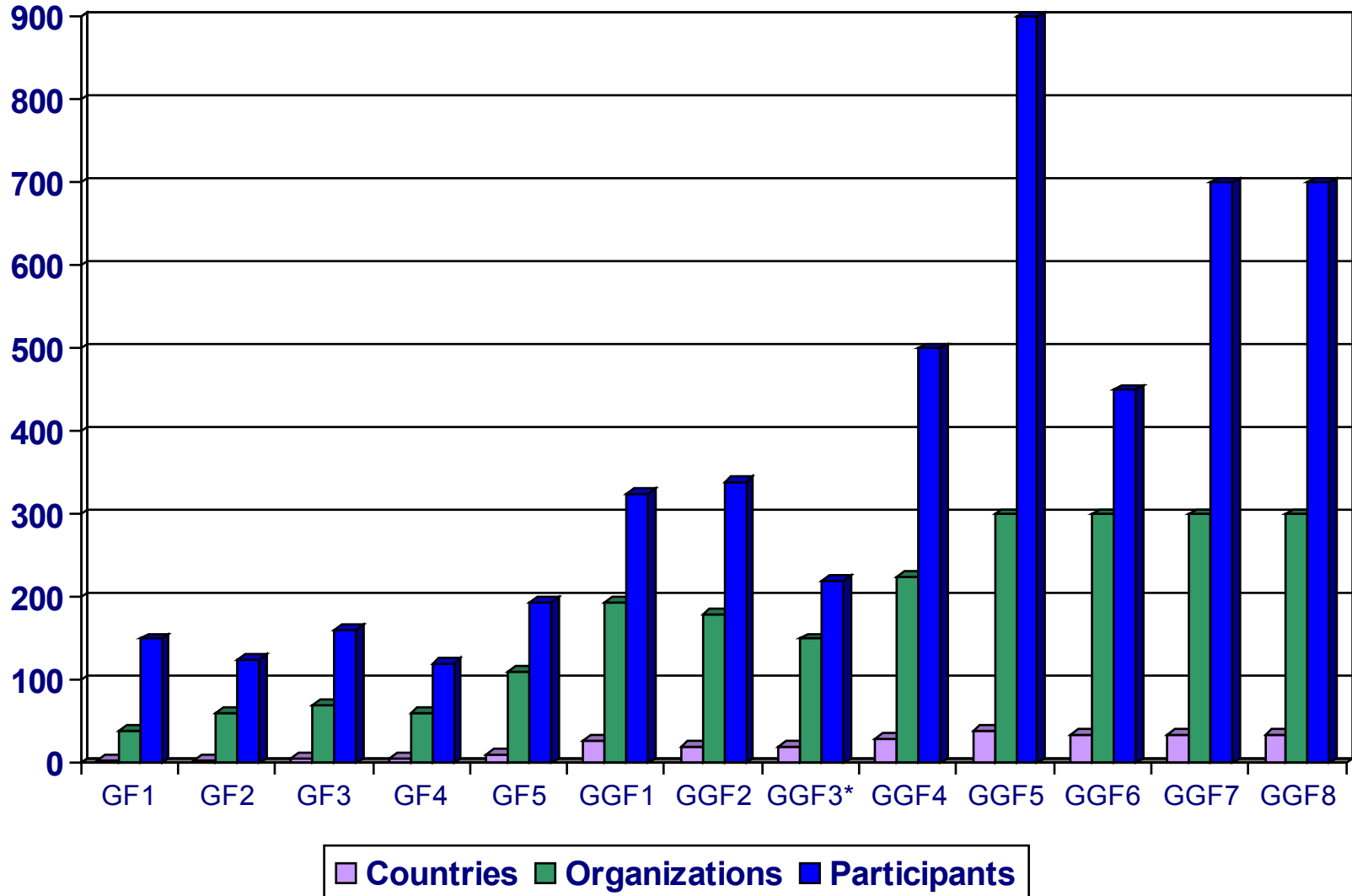
- **Currently in Formation**

- Interim co-chairs Satoshi Matsuoka (Tokyo Inst. of Technology) and Dennis Gannon (Indiana University)
- Members to be invited based on nominations from GFSG, GFAC

- **Charter**

- Create and manage a high-quality workshop series in conjunction with GGF tri-annual meetings.
  - Proposals accepted exclusively from GGF working and research groups
    - Solicited topics (from GROC, GFSG, GFAC, GGF Chair)
    - Unsolicited topics (from group chairs)
  - Arrange for publication of workshop proceedings as appropriate.
- Provide input to GFSG on approval of new Research Groups
- ~~Provide peer-review on selected GGF documents~~

# GGF Participation



# Getting Involved

- **Participate in a GGF Meeting**
  - 3x/year
  - Join a working group or research group
  - Electronic participation via mailing lists (see [www.gridforum.org](http://www.gridforum.org))
- **Contact a Steering Group member**
  - Ian Baird, Charlie Catlett, Andrew Chien, Peter Clarke, Cees DeLaat, Ian Foster, Andrew Grimshaw, Marty Humphrey, Bill Johnston, Ken Klingenstein, Domenico LaForenza, Satoshi Matsuoka, Jeff Nick, Bill Nitzberg, Jennifer Schopf, Satoshi Sekiguchi, Steve Tuecke



# Upcoming GGF Meetings

- **5-8 October 2003: Chicago**
  - GGF-9 will be work sessions only
- **March 2004: Frankfurt**
  - GGF-10 will be work sessions only
- **June 2004: Hawaii**
  - GGF-11 will be joint with HPDC-12
    - HPDC: 2.5 day Grid academic/research symposium
  - Plenary, Tutorials, Workshops, Work sessions
- **September 2004: Chicago or Brussels**
  - GGF-12 will be work sessions only



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  - in which case the procedures for copyrights defined in the GGF Document process must be followed,
- **or as required to translate it into languages other than English.**

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  - any GGF working group, research group, or portion thereof,
  - the GFSG, or any member thereof on behalf of the GFSG,
  - the GFAC, or any member thereof on behalf of the GFAC,
  - any GGF mailing list, including any working group or research group list, or any other list functioning under GGF auspices,
  - the GFD Editor or the GWD process
- Statements made outside of a GGF meeting, mailing list or other function, that are clearly not intended to be input to an GGF activity, group or function, are not subject to these provisions.

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    - *upon approval by the GFSG of the relevant GGF document(s),*
    - *any party will be able to obtain the right to implement, use and distribute the technology or works when implementing, using or distributing technology based upon the specific specification(s)*
    - *under openly specified, reasonable, non-discriminatory terms.*
  - *The working group or research group proposing the use of the technology with respect to which the proprietary rights are claimed may assist the GGF secretariat in this effort.*
  - *The results of this procedure shall not affect advancement of document, except that the GFSG may defer approval where a delay may facilitate the obtaining of such assurances.*
  - *The results will, however, be recorded by the GGF Secretariat, and made available.*
  - *The GFSG may also direct that a summary of the results be included in any GFD published containing the specification.*