Particle and Nuclear Physics Applications (PNPA) Research Group
Charter
June 27, 2003

Administrative:
Group Name: **Particle and Nuclear Physics Applications Research Group**
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Charter for GGF Research Group on Particle and Nuclear Physics Applications (PNPA)

The Particle and Nuclear Physics Applications Research Group provides a forum for discussion of issues related to particle and nuclear physics applications and production grids. There are three specific goals, all with the overarching aim of ensuring that HENP actively participates in setting requirements and defining standards to ensure that its needs are met and to bring its experiences in deploying and using large scale grids to the grid community as a whole.

- To bring the requirements of the HENP community to the GGF in order to explain and inform the wider grid community of the specific needs and issues of HENP
- To ensure participation of the HENP community in grid standardization efforts, particularly in those areas and services essential to the successful use of grids in HENP.
- To provide early feedback to GGF technical working groups on the success or failure of various grid software components as used in high performance production activities by HENP experiments.

The particle and nuclear physics community has over the past few years provided the driving applications and made significant contributions to several projects (EDG, DataTAG, PPDG, GriPhyN, SiteAAA, iVDGL, Nordugrid) that have been actively involved in developing and deploying prototype, and now production, grid applications. Many of the participants in these projects are active participants or leaders of existing or new GGF working groups or research groups. Current areas of interest include security, high throughput data transport, data intensive management and access services, and information schema definition. As the community continues to develop and adopt higher level and more comprehensive services it is anticipated that we will contribute to other areas of work such as production and operations services, scheduling and job description, databases, frameworks and applications, and network and resource management.

The PNPA Research Group will provide a venue to bring together domain application scientists together with the information technologists and researchers in grid technologies, at the leading forum for standards. HENP experiments are deploying petascale production grids now. We aim to identify the requirements of, and communicate experiences from, these deployments as they relate to the GGF. We believe there are important commonalities in requirements across the experiments in the field which can be collected and documented as a common set.

Members of this Research Group will include representatives of the LHC Computing Grid, Trillium, and other grid projects in the field. These projects must deliver and deploy production grid middleware and services to enable scientific analysis on a global scale. The research group will also ensure that grid developments driven by the larger projects within HENP will also be compatible and useable by other experiments within HENP.

Scope:

The scope of this research group will include the following:

- Communicate areas of GGF work relevant to the community and vice versa. Propose mechanisms for the community to participate in existing, or propose new, working groups or research groups.

- Identify clear examples of the diverse use of the grid within the particle and nuclear physics community. This includes issues of access to, and archiving of, petascale datasets, services for virtual sub-organizations in a global community, and intelligent management of workflows and scheduling of a complex mix of petaop jobs needed by our community.
- Discuss state of standards, within the community and between the community and other application domains.
- Explore possible reference architectures for the community's distributed grid applications.
- Identify how the grid is being challenged by the particle and nuclear physics sciences, and communicate these requirements in the GGF forum.
- Promote issues related to production, operations and maintenance.

Action Items:

- Hold workshops at GGF meetings of varying length (from 1 hour to 1 day) and different focus areas related to the activities in the field, for communication and discussion of the ongoing program and plans of the community.

Deliverables:

1. An informational document that defines the requirements of the HENP community at this time from GGF WG and RGs - Initial draft Mar 2004.
2. An initial informational document directed to grid designers and users in the HENP community summarizing GGF standards and recommended practices that could be adopted to HENP computing problems – Initial draft summer 2004
3. An initial informational document (or series of documents) that relates the Application Area experiences to date to the goals and scope of the GGF – August 2004.

Goals/Milestones:

1. GGF8 (June 2003): BOF Discussion of the Research Group charter
2. GGF10 (Mar 2004): ½ day workshop which includes presentations and discussion of the program of the area.
3. GGF10 (Mar 2004): Meeting of RG to discuss initial draft of the informational document on Requirements of the HENP community for Grid Services.
4. June 2003-March 2004: Actively present the charter and engage the community of particle and nuclear physicists and obtain endorsements.
5. Review the activities and relevance of the Research Group June 2004
6. Review the activities and relevance of the Research Group June 2005