NorduGrid Collaboration's Special Event Track

Session 1: Grid Computing with ARC middleware
Session 2: Live demonstrations

European Grid Conference,
Amsterdam, February 15, 2005
NorduGrid in brief

- **Past**: Grid pilot project launched by NorduNet
  - “Nordic Testbed for Wide Area Computing and Data Handling” (May 2001- May 2003) was one of the first European Grid Projects
  - The project implemented a production Grid system based on the ARC middleware, working non-stop since May 2002
  - This was the first Grid which contributed to a large scale production

- **Present**: Open Source Community around a Grid middleware
  - The middleware is developed, maintained, deployed by an Open Source Community
  - The NorduGrid Collaboration, formed by Nordic universities, coordinates the activities
  - An open Grid running on ARC is operated by the community, to the date the Grid spreads from Norway to Australia, links ~40 sites ~4000 CPUs
  - This Grid is used by hundreds of users executing ~50000 jobs/month for solving real problems (physics, meteorology, genomics, chemistry etc): **not a test setup, but a true system!**

- **Future**: Extending the community, bringing new users to the Grid via ARC
  - With the help of the community the Collaboration continues the user-centric, performance and stability oriented development of the middleware
  - The Collaboration is committed to provide an open, robust grid middleware!
Positioning ARC in the Ocean of Grids

ARC's Philosophy:
- functional & usable systems for Today, put emphasis on stability, performance, scalability and portability
- Be user & sysadmin friendly, support reasonably heterogeneous systems
- decentralized architecture, lightweight non-intrusive grid layer, respect the local computing unit
- keep simple things simple

Middlewares from Globus Alliance
- GT2, pre-WS product line
  - Open Science Grid: mass deployment of GT2 + Condor
  - Not a turnkey solution (missing broker)
  - User friendly? future support?
- GT4 WS-RF compliant
  - Alpha quality development release, final due April 29

Middlewares from the EGEE project
- Currently LCG-2
  - Existing, mass-deployed software
  - Centralized, stability?, reliability?, portability? Too heavy...
- Transition to Glite
  - First release due end of March

Unicore
- Existing, matured software with nice GUI
- Mass deployment?

Many more: dozens of projects trying to plug the holes of the GT2
Session 1: Grid computing with ARC

Smörgåsbord from the ARC community:
- Developers
- Users
- Researchers
- Sysadmins
The menu

1. Welcome and Introduction (Balázs Kónya Lund University)
2. The Advanced Resource Connector (ARC) in a nutshell (Oxana Smirnova CERN/Lund University)
3. ARC from the SYSADMIN's perspective (Balázs Kónya)
   ARC from the USER'S perspective: ARC clients, user interfaces
4. Command-line client (Mattias Ellert Uppsala University)
5. ARC-based Application portal (Jonas Lindemann Lund University)
6. Advanced resource brokering on ARC (Erik Elmroth Umeå University)
7. Unicore Client interface to ARC (Csaba Anderlik Parallab Bergen)
   ARC customers: ARC-based national Grid deployments, ARC user community
8. Panoramic view of ARC usage in Europe (Balázs Kónya)
9. Large scale production with ARC: The HEP Atlas community (Oxana Smirnova)
10. Enforcing resource allocations with the SweGrid Accounting System (SGAS) (Peter Gardfjäll Umeå University)
A realistic picture of a real Grid running on a robust middleware

"a true system serving users since May 2002"