

Building a European e-Infrastructure: The View from the UK

Tony Hey,
Director of UK e-Science Core Programme
EPSRC, UK

UK e-Science Funding

First Phase: 2001 –2004

- Application Projects
 - £74M
 - All areas of science and engineering
- Core Programme
 - £35M
 - Collaborative industrial projects

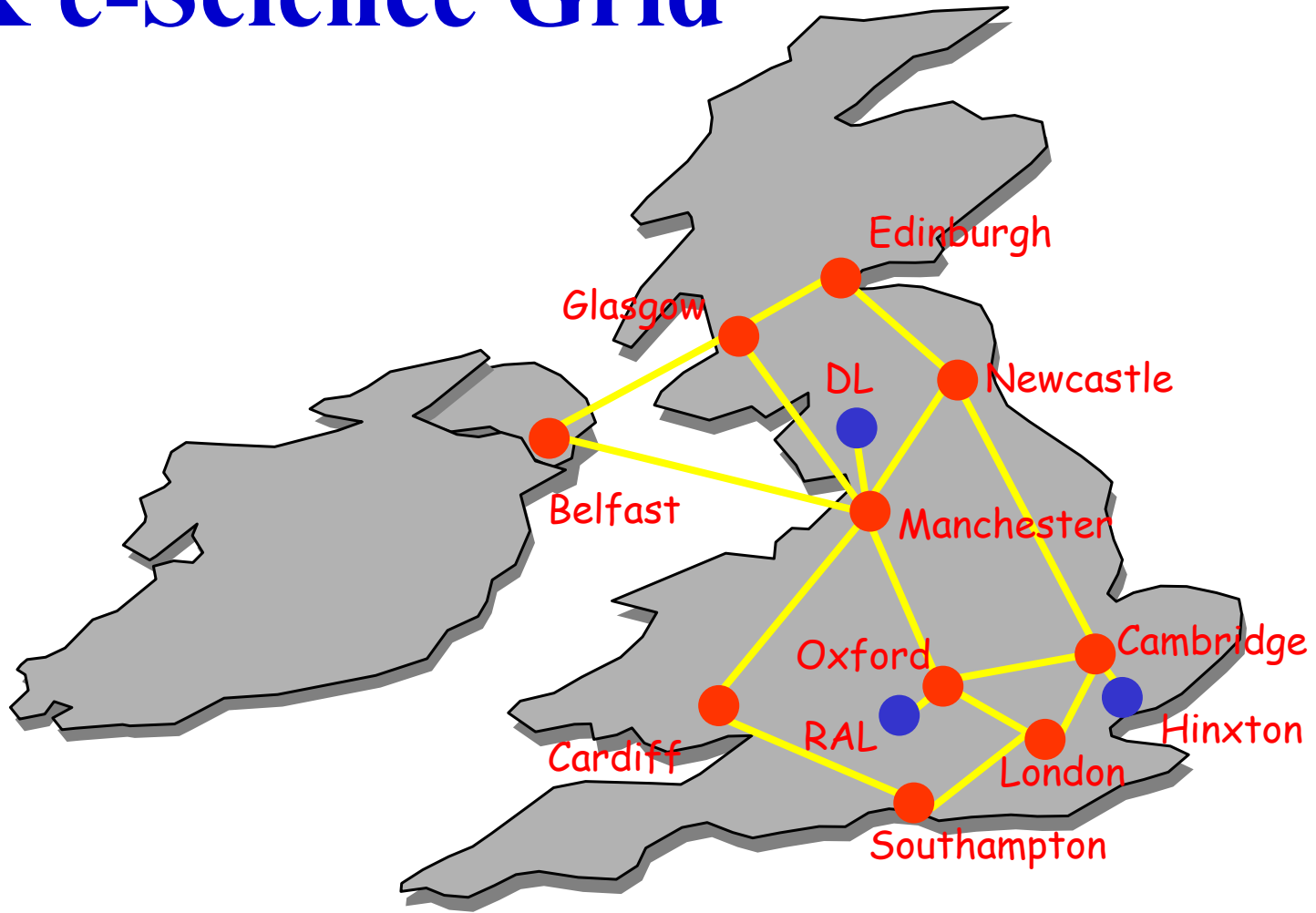
Second Phase: 2003 –2006

- Application Projects
 - £96M
 - All areas of science and engineering
- Core Programme
 - £16M + £25M (?)
 - Core Grid Middleware

The UK Grid Experience: Phase 1

- UK Programme on Grids for e-Science
 - £75M for e-Science Applications
- UK Grid Core Programme for Industry
 - £35M for collaborative industrial R&D
 - Over 80 UK companies participating
 - Over £30M industrial contributions
 - Engineering, Pharmaceutical, Petrochemical
 - IT companies, Commerce, Media

UK e-Science Grid



Open Middleware Infrastructure

- Need to develop open source, open standard compliant, middleware stack that will integrate and federate with industrial solutions
- Software Engineering focus as well as R&D
 - Aim must be to produce robust, well-documented, re-usable software that is maintainable and can evolve to embrace emerging Grid Service standards
- Major focus of Phase 2 of UK e-Science Initiative is creation of an
 - ‘Open Middleware Infrastructure Institute’

Role of UK Open Middleware Infrastructure Institute

- Repository for UK-developed Open Source 'e-Science/Cyber-infrastructure' Middleware
- Documentation, QA and Compliance testing for GGF/WS standards
- Fund software engineering effort to bring 'research project' Grid middleware up to 'production strength'
- Fund middleware development projects for identified 'gaps'
- Work with US, EU Projects and Asia-Pacific
- Supported by major IT companies

An EU Open Middleware Infrastructure Institute?

- Open repository of Middleware from EU Grid Projects
- Compliance testing for GGF standards
- Software engineering to produce ‘production quality’ middleware
- Work with major IT companies
- Seek partnership with US Cyberinfrastructure Initiative
- Seek Asia-Pacific collaboration

e-Infrastructure: Conclusions

- Many EU R&D projects developing ‘proof of concept’ Grid middleware
- Urgent need for software engineering effort to develop consistent e-Infrastructure middleware stack
 - Typically requires order of magnitude more effort than required to produce research prototype
- Unless we take co-ordinated action now we will not have a robust e-Infrastructure for deployment for science and industry by 2007

e-Government and the Grid

‘[The Grid] intends to make access to computing power, scientific data repositories and experimental facilities as easy as the Web makes access to information.’

Tony Blair, 2002