

# A Proxy Credential Auditing Infrastructure for the UK e-Science National Grid Service

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# Background

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- Grid providers such as the NGS rely on PKI
  - Proxy certificates used to lessen dangers of authentication-oriented PKI
    - used for single sign-on and delegation of privileges
- BUT proxy certificates can be misused / abused
  - DN -> local account via Grid mapfile to “do stuff”
  - No method to easily detect misuse
- We aim to improve this situation!

# Team and Schedule

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- Project Team

- Thames Valley University
  - Wei Jie + RA (9 months)
- NeSC, University of Glasgow
  - Richard Sinnott, Christopher Bayliss, David Martin (15 months shared)
- National Grid Service, TeraGrid, D-Grid
- Numerous application domains

- Project Duration

- Started: 01<sup>st</sup> Jan 2010
- Ends: 31<sup>st</sup> Mar 2011



# Aims and Objectives

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- Develop proxy certificate auditing infrastructure that supports monitoring/auditing use of proxy credentials
  - General usage monitoring
  - Patterns of use and prediction of misuse
    - Exploit and harden existing software for this
      - Globus Incubator project
    - Extensions to support
      - VO-specific monitoring and usage
      - Resource-specific monitoring and usage
- Demonstrate in numerous projects and roll out to NGS

# Outcomes and Deliverables

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- An infrastructure and methodology to support proxy credential auditing and monitoring
- Case studies:
  - nanoCMOS project ([www.nanocmos.ac.uk](http://www.nanocmos.ac.uk))
  - ENROLLER project ([www.enroller.org.uk](http://www.enroller.org.uk))
  - DAMES project ([www.dames.org.uk](http://www.dames.org.uk))
  - NeISS project ([www.neiss.org.uk](http://www.neiss.org.uk))
- includes usage of NGS, ScotGrid, TeraGrid, D-Grid

# Engagement and Dissemination

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- Organize open workshops
  - Open to NGS customer & research base, UK Grid/e-Science community
  - Software demonstrations, tutorials, explorations of the use, deployment and overall pro's and con's of the monitoring and auditing infrastructure
  - Wider security workshops (AHM & ISPA)



# Status

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- Source code obtained
  - Documentation mostly in German!
- TRAC and code versioning systems set up
- Basic functionality tested
  - Proxy certificates with secure auditing service demonstrated
- Code evaluation on-going