

# JISC DEVELOPMENT PROGRAMMES

## Project Document Cover Sheet

### NGS – Interim Report

#### Project

<b>Project Acronym</b>	GOSC	<b>Project ID</b>	
<b>Project Title</b>	National Grid Service and Grid Operations Support Centre		
<b>Start Date</b>	01-October-2006	<b>End Date</b>	31-Mar-2009
<b>Lead Institution</b>	Science and Technology Facilities Council - RAL		
<b>Project Director</b>	Neil Geddes		
<b>Project Manager &amp; contact details</b>	Andrew Richards Email: <a href="mailto:A.J.Richards@rl.ac.uk">A.J.Richards@rl.ac.uk</a> Tel: 01235 778029		
<b>Partner Institutions</b>	University of Edinburgh, University of Leeds, University of Manchester, University of Oxford.		
<b>Project Web URL</b>	<a href="http://www.ngs.ac.uk">www.ngs.ac.uk</a>		
<b>Programme Name (and number)</b>	e-Infrastructure: NGS		
<b>Programme Manager</b>	Matthew Dovey		

#### Document

<b>Document Title</b>	NGS Interim Report		
<b>Reporting Period</b>	01-October-06 to 30-June-07		
<b>Author(s) &amp; project role</b>	Neil Geddes, Project Director; Andrew Richards, Project Manager;		
<b>Date</b>		<b>Filename</b>	FirstReport.doc
<b>URL</b>			
<b>Access</b>	Project, JISC internal		

#### Document History

Version	Date	Comments
0.1	11-June-07	Draft text completed by NG
0.2	13-Aug-07	Additions from MM, SP, AR finalised

# Overview of Project

## 1. Grant Statement

I confirm that the project is being conducted under the terms agreed with JISC in the letter of grant and the JISC Terms and Conditions attached to it, subject to the variations listed below.

The following changes to the terms of the original award have been agreed with JISC:

- Change of Point of Contact from John Robinson, JISC Services Operations Director, to Matthew Dovey, e-Research Programme Director.
- Clarification of progress reporting (originally listed as both 2 and 4 times per year in the documentation from JISC) as an annual full report with interim six monthly updates, commencing in August 2007 with this first update.

In addition, in April 2007, The Council for the Central Laboratories of the Research Councils (CCLRC) combined with the Particle Physics and Astronomy Research Council (PPARC) to form the Science and Technology Facilities Council (STFC). STFC has taken over the commercial and grant awarded contracts from PPARC and CCLRC.

## 2. Aims and Objectives

There have been no changes to the original aims/objectives outlined in the project plan.

## 3. Overall Approach

There have been no major changes to the overall approach outlined in the project plan.

Due to delays in taking delivery of the upgraded core NGS computing and data storage hardware the timescale for a full NGS-2 production service has moved to August 2007 (was April 2007). The original NGS hardware has continued to operate a full NGS production service, albeit at a slightly smaller scale than originally anticipated until the new hardware comes fully online. All new hardware is now installed and available to users.

## 4. Highlights

Particular highlights during the first 6 months of the project include:

- Definition of a Mission and Vision Statement. Both of these are available on the NGS website at <http://www.grid-support.ac.uk/content/view/183/137/>
- A Roadmap of future technical developments has been defined and published. This can be viewed at [http://www.grid-support.ac.uk/files/ngs2\\_roadmap\\_2007.pdf](http://www.grid-support.ac.uk/files/ngs2_roadmap_2007.pdf)
- Delivery and installation of new NGS Phase 2 hardware.
- Development of new NGS Portal (JSDL Applications Repository).
- Appointment of dedicated NGS Outreach/Liaison Officer at Manchester
- Sustainability workshop held at NeSC
- NGS asked to act as the core of the UK representation to the European Grid Infrastructure (EGI) project being considered by the European Commission.

## 5. Project Outputs

The following project deliverables outlined in the Project Plan have been achieved during the reporting period (as planned):

- Procurement and deployment of new hardware for core sites.
- Deployment of new NGS Portal (<http://portal.ngs.ac.uk>) [renamed to JSDL Applications Repository]
- Deployment of standalone VOMS service
- Deployment of pre-production Resource Broker using EGEE gLite software
- Support for simple advanced reservation via web-form provided.
- Deployment of OMII GridSAM services via University of Belfast Partner
- Deployed User Accounting and Management system

- Defined Mission and Vision Statements
- Defined Support Centre SLD
- Reviewed NGS Core Sites and Phase 1 Partners

## 6. Project Outcomes

In the first 9 months the project has

- Added 1 new partner (Queens University Belfast) and 2 affiliate members (Imperial College London, University of Southampton) to the NGS
- Deployed improved management and monitoring of grid operations and reliability. Service availability is summarised biweekly to the Technical Board.
- Deployed User Account Management System allowing policing of user allocations on central NGS resources.
- Investigated connections to emerging university campus grids, participating in Campus Grid SIG.
- Supported approximately 500 active researchers.
- 12 training courses with a total of 209 participants, across 21 days of training, have been delivered to support user communities:
- Deployed new services including NGS Wiki, GridSAM, JSDL Applications Repository (NGS Portal)
- Detailed service definitions for sustainable infrastructure
- Defined an SLD for the NGS Support Centre
- New training courses developed and delivered by NeSC
- Initial contact with EDINA and MIMAS for provision of data services on NGS established.
- Met with UKERNA (ja.net) to coordinate over grid / network interoperation and support of projects.

## 7. Risk Analysis

The project risk register was reviewed by the Project Board in March 2007. Since then the following new risks have been identified

1. Move from JISC Services to JISC e-Research. This initially created some uncertainty in reporting lines and has cast doubt on the longer term JISC commitment to supporting a Grid service for UK research.
2. Delay in the OMII/NGS grid software and services programme. This programme, a component of the JISC e-Infrastructure programme, is targeted at developing software and services for new communities to use the existing NGS infrastructure. Ongoing delays in this programme raise concerns that it will be able to deliver anything useful during the current phase of the NGS.
3. Concerns over the development of EDINA and MIMAS by JISC Services. Despite strong initial interest from the data centres to work towards NGS partnership, the lack of a clear strategic steer from JISC Services has resulted in the data centres being unable to commit development effort to achieving this.
4. The delays in delivery of the NGS2 hardware. This has delayed the provision of the new, increased, service. Three of the four nodes have now been accepted. We anticipate that the fourth will be accepted shortly. The net effect of this is a delay of approximately 3 months to the newly upgraded service.

## 8. Standards

There are no changes currently anticipated in the standards to be used by the project. We note however that the OGSA-BES and JSDL proposed recommendations from the OGF can now be used for submitting jobs to NGS via the GridSAM instances at our partner site Belfast., as an alternative to the de-facto Globus mechanisms already supported. We also note that the OGF Usage Record

Format used for exchange of resource usage information in the NGS accounting system has now been published as an OGF proposed recommendation.

## **9. Technical Development**

There have been no changes in the development approach or technologies to be used.

## **10. Intellectual Property Rights**

There have been no changes since the proposal was submitted, beyond the change of CCLRC to STFC.

## ***Project Resources***

### **11. Project Partners**

There have been no changes to the project partners beyond the change from CCLRC to STFC as noted in section 1.

### **12. Project Management**

There have been no changes in project staff or their roles since the last report.

### **13. Budget**

Finance profile for the NGS-2 grant is included in Appendix A.

Current spend profile for 1 October 2006 to end March 2007 is Attached. See "National\_Grid\_Service\_Finance\_Report\_June2007\_v2.pdf"

## ***Detailed Project Planning***

### **14. Work-packages**

#### **WP1 Project Management**

Detailed Project management is achieved through the weekly NGS Development Board, chaired by the project manager (NGS Executive Director). The NGS development Board comprises work package leaders and NGS senior management. Overall progress is overseen by a quarterly Management Board. Day to day operations of the NGS is coordinated through the biweekly operations meetings and Technical Board.

#### **WP2 Support Centre**

The NGS support centre manager was recruited in December 2006 – Stephen McAllister. The support centre has now defined and SLD for the provision of its services in support of the NGS core sites, partners and affiliates. The support centre has also worked to define its relationship with European support activities in EGEE and to forge closer alliances with the GridPP activities within the UK. Metrics on support centre performance are now produced and reported at NGS Technical Board.

#### **WP3 Core node deployment and operations**

The Core NGS systems have continued to provide a production service to NGS users. The NGS phase 2 hardware has been delivered and installed at all 4 of the core sites. The delivery and thus implementation of service has been delayed due to vendor related problems in supplying the hardware on time and to specification. As of 13 August all 4 sites have now accepted the delivered hardware. The new hardware was launched into pre-production service at the 3<sup>rd</sup> NGS User Forum on the 19<sup>th</sup> July at the Oxford eResearch Centre. Full production service is now scheduled to start at the AHM2007 event.

#### **WP4 Resource and Partner Integration and Monitoring**

Three new sites have been joined to the NGS since the start of the NGS-2 (Oct 2006). Belfast has joined as a partner providing a Web Service Hosting Service and Basic Execution Services (based on GridSAM from OMII, with instances configured for all core and partner NGS resources). Imperial have joined as an NGS affiliate with the intention of moving to partnership with their GridPP resources. Southampton have joined as an affiliate with their Microsoft Windows CCS cluster.

NGS partners Lancaster and Cardiff have enhanced their service offering and have revised their SLDs accordingly. The NGS core sites are revising their SLDs to cover the new NGS-2 hardware.

There are 7 other sites in the site joining pipeline (Glasgow/NeSC, Glasgow/GridPP, NW-GRID/Manchester Escher, RAL SCARF, Keele, Aston, Oxford GridPP) while there are other sites in the discussion phase including HECToR, VizNET resources, MIMAS (GEMS) and EDINA (GESE), and further sites in NW-Grid and GridPP.

The inclusion of systems running MS Windows making the NGS a truly heterogeneous e-Infrastructure is a major achievement. Much work has been put into the Inca testing framework so that it no longer assumes that sites on the Grid are Unix/Linux systems.

Initial work has been done towards adopting a Common SLD for all NGS sites. This will also help streamline “Operator Free” site joining, which is now in the planning stages.

With the exception of HPCx, all NGS sites have now been reviewed against their SLDs.

#### **WP5 Sustainability and Business Plan**

The invitation-only workshop “Models for a sustainable National Grid Service” was held on 22-23 February 2007 (see <http://www.nesc.ac.uk/action/esi/contribution.cfm?Title=731>). The report of this workshop and an NGS response are available on the STFC publication archive at <http://epubs.cclrc.ac.uk/bitstream/1708/WorkshopSummary.doc> (See also section 16 – Exit/Sustainability plan.).

#### **WP6 Application Support**

The NGS Portal developed through this work package has now been adopted for inclusion in the OMII-UK distribution and renamed the JSDL Applications Repository.

#### **WP7 Outreach, Training and User Documentation**

6 inductions, 5 courses on the more recently deployed NGS services, and one “training trainers” event, to enable lecturers/trainers to deliver the NGS material, have been held. Participants’ assessments of all events averages 4.63 (4-good; 5-very good). Registration Authority courses have also been run, in support of the UK Certification Authority.

For self-guided learners, material proven in courses has been transformed to web pages on the updated NGS site. A development of the NeSC-TOE Digital Library (<http://baillie.lib.ed.ac.uk>) added a UK e-Science collection; this is populated with current NGS material.

In January 2007 a workshop for e-science trainers and educators in the UK was held.

The activity has had 1 FTE in Edinburgh, less than 1 FTE at RAL.

#### **WP8 Core service development**

A new User Account Management system has been developed to manage user accounts and usage of NGS resources. It is planned that this will integrate with future VO and authorisation tools.

Availability monitoring and compliance monitoring (i.e. site compatibility with the NGS minimum software stack) has been developed using the Inca2 framework from SDSC.

Deployment of a GRIMOIRES service is proposed in collaboration with OMII-UK.

A Resource Broker using the gLite RB software from EGEE has been deployed for NGS testing. It is proposed to roll this out such that it works for all core and partner NGS sites.

A simple advanced reservation facility has been made available on the NGS website to enable the support centre to better manage requests for reservations at core sites.

### **WP9 Roadmapping**

The first version of the NGS Roadmap for phase 2 was released in February 2007. No changes have been made to the roadmap since release. Items in the roadmap are tracked through the NGS Milestones document under the control of the Development Board.

### **ETF Engineering Task Force**

For NGS phase 2 the NGS funds Dr David Wallom of the Oxford eResearch Centre to chair the ETF and through NGS Development Board oversees ETF activity as a work package. The ETF is currently evaluating and providing reports on technologies that the NGS wishes to consider for adoption into its production service.

## **15. Dissemination**

In addition to the training activities reported under WP7, the NGS has undertaken outreach at an additional 29 events, these mainly comprising presentations, including at the OGF20/EGEE User Forum; stands were created at three conferences (JISC, BioSysBIO and e-Science 2006). Contacts from such events has led to the planning of training targeted on, in particular, the bioinformatics community. Scope for developing particular communities will be increased by the recent recruitment of the NGS liaison officer.

The NGS has also recruited Dr Gillian Sinclair at the University of Manchester as the NGS dedicated Liaison Officer.

## **16. Exit/Sustainability Plan**

A workshop on NGS sustainability was held in Edinburgh in February 2007. The full report of this workshop is available from the STFC publication archive at <http://epubs.cclrc.ac.uk/bitstream/1708/WorkshopSummary.doc>. The workshop identified several specific priorities and actions. Long term sustainability will depend upon support from a number of different and complementary funding streams which must each be developed over the coming 2 years.

## Appendixes

### Appendix A. Project Budget

Finance profile for the NGS-2 grant period 1 October 2006 to March 2009

<b>NGS2 Finance Profile Summary</b>	
Project from 1 October 2006 to March 2009	

<b>Accounting Period End</b>	<b>Mar-07</b>	<b>Mar-08</b>	<b>Mar-09</b>	<b>Total</b>
Months	6	12	12	
<b>Directly incurred Staff Total</b>	<b>348,000</b>	<b>726,000</b>	<b>711,000</b>	<b>1,785,000</b>
<b>Non-Staff</b>				
Travel and Expenses	20,000	50,000	50,000	120,000
Hardware and Software	1,850,000	191,000	2,500	2,043,500
Other	320,000	742,000	589,500	1,651,500
<b>Total Directly Incurred</b>	<b>2,190,000</b>	<b>983,000</b>	<b>642,000</b>	<b>3,815,000</b>
<b>Directly Incurred Total</b>	<b>2,538,000</b>	<b>1,709,000</b>	<b>1,353,000</b>	<b>5,600,000</b>
<b>Total Project Cost</b>	<b>2,538,000</b>	<b>1,709,000</b>	<b>1,353,000</b>	<b>5,600,000</b>
<b>Amount Requested from JISC</b>	<b>1,918,000</b>	<b>1,669,000</b>	<b>1,413,000</b>	<b>5,000,000</b>

#### Allocation Summary

##### Site Allocations

**Total Allocation**

5,000,000

## **Appendix B Consortium Agreement**

Attached.