

JISC DEVELOPMENT PROGRAMMES

Project Document Cover Sheet

PROJECT PLAN

Project

Project Acronym	SEE-GEO	Project ID	
Project Title	SEcurE access to GEOspatial services		
Start Date	10 Oct 2006	End Date	31 May 2008
Lead Institution	EDINA		
Project Director	David Medyckyj-Scott, EDINA		
Project Manager & contact details	Chris Higgins, EDINA University of Edinburgh Data Library, Main Library Building George Square Edinburgh EH8 9LJ Tel 0131 651 3874 email chris.higgins@ed.ac.uk		
Partner Institutions	University of Edinburgh, University of Southampton		
Project Web URL			
Programme Name (and number)	<i>Grid OGC Collision</i>		
Programme Manager	James Farnhill		

Document

Document Title	<i>Project Plan</i>		
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Version	Date	Comments
1.0	4 th Dec 2006	Draft for DMS review
1.1	4 th Dec 2006	Revised draft for JF review
2.0	12 th Dec 2006	Incorporate JFs comments



JISC Project Plan Template

Overview of Project

1. Background

EDINA National Datacentre has been in existence for 10 years, during that period it has gradually increased in both the number of services it provides, and in the number of people it provides services to. This is particularly true of the geo services at EDINA. For example, in 2006 the Digimap Ordnance Survey service (providing access to topographic data) had 180 registered institutions and 25,000 registered users. In part, the success of the geoservices is down to the ubiquity of geographic data - it is widely understood that up to 80% of all information has some kind of Geographic reference, e.g., a placename, address, coordinate, etc.

The last 5 years or so have seen much effort going into Grid technology, and here in the UK this has been manifested most clearly through the work of the UK e-Science programme and latterly in the development of what has come to be known as the **e-infrastructure**. This term is used to describe the basis upon which collaborative and distributed research is enabled, it “embraces networks, grids, data centres and collaborative environments, and can include supporting operations centres, service registries, single-sign on, certificate authorities, training and help-desk services. Most importantly, it is the integration of these that defines e-Infrastructure”¹.

SEE-GEO (SEcurE access to GEOspatial services) is an e-infrastructure project As the title indicates, the central thrust is in taking a significant step towards making EDINA hosted geospatial data access web services securely available within the UK e-infrastructure. To maximise return on investment, the project concentrates on investigating the use of existing key e-infrastructure components:

- Geospatial data from EDINA – a JISC funded national datacentre
- Shibboleth - Standards based, middleware software providing single-sign on across organisational boundaries. The UK academic sector is in the process of migrating to a SAML-based federation of which one of the major technologies is Shibboleth to allow informed authorization decisions for individual access to protected online resources.
- OGSA-DAI (Open Grid Services Architecture – Data Access and Integration) - Core Grid middleware, part of Globus Toolkit and OMII-UK.
- National Grid Service (NGS).

The emphasis on standards is another major defining characteristic of this project. SEE-GEO is being conducted under the JISC Grid-OGC Collision Programme. The Open Geospatial Consortium (OGC), along with ISO TC211, is the major standards defining organisation developing open interoperability geospatial standards. OGC Web Service interfaces are commonly provided within commercial Geographic Information (GI) software and are increasingly mandated across sectors when creating systems that share GI. By investigating secure access to geospatial data through OGSA-DAI on the NGS using OGC interfaces, with Shibboleth providing the security framework, SEE-GEO will be using standards from the GI, Grid, security and web services communities to investigate how GI may be made available to the UK academic sector in a Grid environment in a way that maximises interoperability.

Potentially, SEE-GEO could have multiple ramifications and effect several e-infrastructure developments. This reach is reflected in the number of related projects, most notably the following:

- The Newcastle University led sister Grid OGC Collision project SAW-GEO (Semantically AWare GEOprocessing)
- EDINA led GEESE (Grid Enabling Edina SErvices) and

¹ http://www.jisc.ac.uk/whatwedo/programmes/programme_einfrastructure.aspx

- MIMAS GEMS (Grid Enabling Mimas Services).

2. Aims and Objectives

The nature of this project is investigatory. The main aim is to take a significant step towards making JISC funded national datacentre geospatial data securely available on the Grid. In doing so, the project will address a number of issues of generic concern in making data (irrespective of type) securely available. By focussing on geospatial data from EDINA, the project will:

- Arrive at a statement of what the main issues are in making EDINA geospatial data available on the NGS.
- Recommendations on how to proceed towards production services backed up by demonstrators showing the use of open geospatial interoperability standards and Shibboleth integrated with Grid security mechanisms.

Additionally, the project will endeavour to:

- Work within the context of the main Standards Developing Organisations (SDOs) to maximise interoperability, sustainability and take-up of the project outcomes.
- Investigate issues surrounding the use of OGSA-DAI as a mechanism for making data available on Grids.

3. Overall Approach

3.1 Strategy

To achieve the central aim of this project is currently understood as not requiring much by way of innovation. That is not to say the project is easy, it is difficult in that it requires combining expertise from across the Geographic Information, Shibboleth, Web Services and Grid communities. The overall approach has therefore been to assemble a team from across key organisations within the UK e-infrastructure to bring their expertise to bear in a structured way.

Primary relevant area of competence	Lead partner	Main tasks
OGC	Geo Services team at EDINA	<ul style="list-style-type: none"> • Project Management • Provide Web Map Service (WMS) and Web Feature Service (WFS) on top of Ordnance Survey topographic and UKBORDERS Boundary data. • Engage with the OGC • Collaborate with NeSC and integrate WFS into OGSA-DAI
Security	SDSS team at EDINA, NeSC (Glasgow)	<ul style="list-style-type: none"> • Provide guidance in the review of the current state of play from the Shibboleth and Web Services perspective • Work with NeSC and the EDINA Geo services team to produce a version of Globus Toolkit (GT) that incorporates the GridShib component and which can communicate with OGSA-DAI • Work with NeSC and the EDINA Geoteam to engage with the JISC ShibGrid projects to enable users with the appropriate Shibboleth credentials to access the OGC web services (WMS and WFS) via GT and OGSA-DAI
Grid related	NeSC (Edinburgh)	<ul style="list-style-type: none"> • Collaborate with the EDINA Geo services team and integrate WFS into OGSA-DAI • Create and install the modified version of GT
Social Science User requirements	NCeSS, MIMAS	<ul style="list-style-type: none"> • Create a demonstrator client accessing the EDINA web services via the modified OGSA-DAI • Work with MIMAS to integrate the appropriate socio-economic data

Coordination will be provided by EDINA. The team will pool its expertise, review the cross community landscape and produce a report identifying current best practice and current state of the art. This will then be used to inform the development of a number of demonstrators which will be used to show the recommended approach in operation. In combination, the intention is that factors such as those listed below will be used to provide the foundation for making production services available:

- The demonstrators
- The report
- Momentum built up during the lifetime of the project
- Outputs from related projects e.g., GEESE, NCeSS e-Infrastructure, GEMS, SAW-GEO.

3.2 Important Issues

- Licence issues relating to making data available on the Grid. The data content providers, e.g., the Ordnance Survey, the UK Hydrographic Office, British Geological Survey, will not agree to making their high value data available in production services on the NGS unless they are convinced it is secure. The nature of Grid platforms, i.e., collaborative, distributed, poses unique issues when profiled against traditional licence models, e.g., where these restrict use of the data to individual machines.
- Coordination. SEE-GEO is linked to multiple projects, both national and international. Keeping track of developments will be challenging.
- Relationship between JISC and the Research Councils in respect of making national datacentre data available on the NGS, For example, the NGS is intended for cross-disciplinary use and is funded by the JISC, CCLRC and EPSRC. Similarly, the services EDINA provides are not all funded by the JISC, eg, UKBorders is ESRC, and SEE-GEO may have ramifications for grid enabling these services in the future as well.

3.3 Scope and boundaries of the work

3.3.1 In Scope

- The creation of a number of demonstrator applications.
- Beginning of discussions with content providers concerning their data being made available to licensed institutions on the NGS.

3.3.2 Out of Scope

- Production strength services on the NGS.
- Solving the licence issues relating to making data available on the NGS.

3.4 Critical success factors.

- Demonstrate secure but still useable access to geospatial services.
- Commitment from one or more users to actually using the services were they made available in a production setting.
- Clear recommendations to the JISC on how to proceed to production services.
- Approval from the main Standards Defining Organisations on the approach taken and interest from other organisation in reusing the methodology.

4. Project Outputs

The two main deliverables are:

1. A report on the current state of play in respect of secure use of OGC web services using Grid technology, including WS-Security, and recommendations to the JISC on how to progress with secure access to Geographic Information in a way which is compatible with the OGC process and the JISC IE/e-Infrastructure.
2. Development of a number of client applications which will demonstrate secure access to heterogeneous data sources hosted by the national data centres via OGC web services

incorporated into standard Grid middleware. Security will be provided using a combination of Shibboleth, Grid Security Infrastructure and WS-Security technology. The client demonstrators will likely cover scenarios in the following contexts: national datacentre usage; consumption of EDINA services in a social science context (provided by the NCeSS MoSeS node – Modelling and Simulation for e-Social Science); and a workflow example (supplied by Newcastle’s sister Grid OGC Collision project SAW-GEO).

5. Project Outcomes

The outcome of this proposal is joining up areas in which significant resources have already been invested by the JISC and others. This then has the potential to build on the benefits that are already being realized in these areas and bring new benefits to the community. These areas include the following:

- Expanding the use of the JISC funded national data centre geospatial data holdings by increasing the use of open interoperability standards and helping with the migration to using these on Grid platforms. One of the main barriers to making OGC web services more widely available is the lack of secure access control (e.g. see the final report of the JISC funded Geospatial Interoperability Project).
- Developing resource access mechanisms that are in harmony with the e-Framework service oriented approach.
- Improving the JISC return on investment in the NGS by making core datasets available and increasing NGS usage.
- Improving the return on investment JISC has made through the Core Middleware Programme in the next generation of access management technologies (Shibboleth) by widening use.
- Working in collaboration with the ESRC funded *e-Infrastructure for the Social Sciences*, the solutions arrived at will meet wide user requirements and have greater uptake.

Of the less tangible outcomes we hope to achieve, the most significant changes are potentially within the OGC and Grid communities themselves:

Open Geospatial Consortium (OGC)

- Digital Rights Management (DRM) and security is a major barrier to the wider uptake of geospatial interoperability standards. Although what is proposed here addresses the specifics of the academic community, the approach may have wider applicability and could contribute to the flexibility and applicability of OGC standards more generally.
- The OGC process has been very successful in creating interfaces and encodings. With Grid technology, the emphasis is on enabling collaboration and sharing of resources. In this proposal, we aim to transfer some of the key Grid security capabilities to the GI community.

Grid

- As the OGC standards are mature and widely supported in commercial software, by integrating them into core Grid middleware we automatically enhance interoperability and make available to the broader Grid community GI within the core toolsets they are familiar with.
- The potential for Shibboleth assertions to be used to implement the complex access rules required for some data will further extend both the descriptive security ontologies involved and the grid components ability to implement fine-grained control.

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
EDINA	Increasing usage of EDINA hosted geospatial data through opening up another access channel New possibilities for analysis and integration of by making geospatial data available on grid platforms	High
University of Edinburgh	Enhancing the image and visibility of the University	Medium

	<p>as providing key e-infrastructure components.</p> <p>Enhancing the University's reputation as a focus of excellence in e-science</p> <p>Improving the University's reputation in the area of geoinformatics</p>	
NeSC	<p>Expanding the number of application communities served by OGSA-DAI</p> <p>Developing additional expertise in the area of geoinformatics</p> <p>Improving the working relationship with a national datacentre</p>	Medium
HEFCE (JISC)	<p>Increasing return on investment in the national datacentres</p> <p>Alignment with other programmes, e.g. e-framework, core middleware, capital programmes</p>	High
OGC	<p>Longer term the GI standards defining organisations will gain a great deal if they align themselves properly with Grid efforts.</p> <p>In SEE-GEO, the OGC may gain from an investigation into the use of its interfaces in OGSA-DAI</p>	Low
Open Grid Forum (OGF)	<p>The main Grid Standards Developing Organisation will gain if widely used open GI interface specifications succeed in leveraging some of the potential of Grid by making GI data more accessible.</p>	Medium
National Centre for e-Social Science, e-Research, ESRC	<p>Secure access to services is also recognised as an important issue in developing e-infrastructure for the social sciences.</p> <p>Links in with wider JISC e-infrastructure developments.</p>	Medium
Consumers of EDINA services in the UK academic sector	<p>If the project succeeds in taking a significant step towards production geospatial services on the NGS, then new possibilities open up for users.</p>	Medium
Data content providers	<p>For example, the Ordnance Survey, UK Hydrographic Office, British Geological Survey.</p> <p>All will be interested in an investigation of how, and the consequences of, their data being made available on what is likely to be an increasingly important platform in the future.</p>	Medium

7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Outputs from the ShibGrid projects are not useable.	3	4	12	NeSC and EPCC are in close contact through OMII-Europe, NextGRID, EGEE and as members of Globus Management Committee, with alternative work in this area. We are confident that we will be able to source alternative open source software to use as a foundation. Indeed, this is a required activity in OMII-Europe.
Usability debilitated by performance.	3	3	9	Examine bottlenecks and performance metrics. Investigate scalability under different architectures.
Non alignment between OGC direction and project.	2	4	8	Close liaison with OGC and community. Development of flexible interfaces capable of providing end user choice as to security mechanisms to be deployed. Provision of extensibility stubs.
Lack of interest in either Grid and/or GI community	2	5	10	Exploit existing links with user community for a e.g. GRIDGIS WG. Active dissemination activity. Provide exemplars. Illustrate use and provide advice, direction and assistance in adoption.
Personnel Recruiting takes too long or unsuccessful	2	3	6	Secondment from other project partners. Deferred start to engineering effort (as implicit in WP scheduling).

8. Standards

As SEE-GEO is being funded under the Grid OGC Programme, by definition, standards are of central importance to this project.

Name of standard or specification	Version	Notes
OGC Web Map Service (WMS)		Integrated into OGSA-DAI prior to SEE-GEO
OGC Web Coverage Service (WFS)		
OGC Web Feature Service (WFS)		Integration of WFS into OGSA-DAI is taking place under the auspices of the GEESE project
ANSI Z39.50 (ISO 23950)		
Shibboleth (Internet2)		
Open Grid Services Architecture – Data Access and Integration (OGSA-DAI)		

9. Technical Development

The main technical development within SEE-GEO will take place in relation to developing the demonstrators. Each organisation involved in creating the demonstrators will use a version control system to ensure software quality. EDINA will be using Rapid Application Development (RAD) techniques to quickly create its demonstrator. The nature of the demonstrators means that RAD is both suitable and practical, allowing for iterative design and efficient reuse without the lead times associated with other development paradigms.

The Use Cases for the demonstrators will use UML and appropriate templates.

10. Intellectual Property Rights

Project Resources

11. Project Partners

EDINA, University of Edinburgh

Main contact: Chris Higgins,
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University of Edinburgh,
EDINBURGH.
EH8 9LJ

e-mail: chris.higgins@ed.ac.uk
Phone: 0131 651 1440
Role: SEE-GEO Project Manager

National e-Science Centre (NeSC)

Main contact: Dave Berry,
National e-Science Centre,
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EDINBURGH.
EH8 9AA

e-mail: daveb@nesc.ac.uk
Phone: 0131 651 4039
Role: Coordinating NeSC participation

Edinburgh Parallel Computing Centre (EPCC)

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e-mail: N.ChueHong@epcc.ed.ac.uk
Phone: 0131 650 5957
Role: OGSA-DAI Project Manager

National Centre e-Social Science

Main contact: Andy Turner,
School of Geography,
Woodhouse Lane,
LEEDS.
LS2 9JT

e-mail: A.G.D.Turner@leeds.ac.uk
Phone: 0113 343 3309
Role: Researcher on the NCeSS MoSeS node

Shibboleth Development and Support Services

Sandy Shaw,
EDINA,
University of Edinburgh,
EDINBURGH.
EH8 9LJ

e-mail: s.shaw@ed.ac.uk
Phone: 0131 650 4988
Role: SDSS Project Manager

12. Project Management

The project manager for this project will be Chris Higgins, University of Edinburgh. The work will be managed in line with the JISC project management guidelines.

13. Programme Support

Given the nature of this project it would be helpful for the programme manager to bring to the attention of the project similar initiatives and work with other JISC programme managers to promote the synergy that will embed and sustain this project. These areas are likely to be identified on an ongoing basis so are not listed here.

14. Budget

Budget across Academic Years – Area A

	FTE	yr1	yr2	yr3	Total
EDINA Staff					
Project Director					
Project Manager – Chris Higgins 24 months from June 2006					
SDSS Advisor					
Shared EDINA/NeSC Staff					
Software Engineer – 15 months from 1 Sept 2006 – for advertising					
Total	1.62	3810	57389	31847	93047
Equipment & Consumables					
Laptop for Software Engineer		900			900
Consumables		20	120	90	230
Travel & Subsistence		333	3000	1,667	5,000
Overall totals		5,063	60,509	33,604	99,177

Year 1 (Jun-Jul 06), Year 2 (Aug 06 – Jul 07), Year 3 (Aug 07 – May 08)

Institutional Contributions include: from EDINA, Project Director and infrastructural services (space, heating, lighting, power, equipment); from NeSC, NcESS and MIMAS, additional staff time. These costs are not included above and will NOT be claimed from JISC.

Budget across Academic Years – Area C

	No.s meetings	Year 1	Year 2	Total
1.5 NcESS/EDINA staff member at each OGC TC meeting during project duration				
Accommodation @ £500 per attendee	3	2,250	2,250	4,500
Registration fees @ £170 per attendee	3	765	765	1,530
Travel @ £400 per attendee	3	1,800	1,800	3,600
Subsistence @ £250 per meeting	3	1,125	1,125	2,250
Total				11,880

Detailed Project Planning

15. Work-packages (see also Appendix B)

Please note that as this project plan is a “living document” it will change in response to changing circumstances. This is particularly true of the work packages.

Work-package	Summary
1. Project Management	Managing the day-to-day activities of the project. Ensuring that deliverables are delivered on schedule. Writing plans and reports.
2. Requirements and Review	Survey the Grid, GI, Shibboleth and Web Service landscape and produce a report with recommendations on current best practice in respect of making geospatial web services available in a Grid environment. This informs the other WPs whereupon this WP becomes a tracking activity.
3. Integrate WCS into OGSA-DAI	Extend OGSA-DAI to be able to handle OGC Web Coverage Service (WCS) requests.
4. Exemplar client applications	In collaboration with the project partners, build a number of clients which demonstrate secure access to EDINA hosted geospatial data.
5. Dissemination	Development of a roadmap for availability of geospatial services on the grid, presenting work to conferences, workshops, etc.
6. Engagement with OGC	Subject project developments to peer review and discussion.

16. Evaluation Plan

As SEE-GEO is an investigative project with multiple stakeholders, evaluating the success of the project is principally a question of getting a measure of the level of stakeholder buy in. This is closely related to the dissemination plan.

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
Ongoing	Usefulness of the project outcomes to the Standards bodies and the communities they represent	Are the standards bodies showing interest in the project? Do they want to be involved?	Present at standards meeting and discuss. Engage in dialogue and act as a broker between Grid and GI SDOs.	Requests for information. Invitations to present at relevant Working Groups. Requests to feed into standards developing process.
Towards end	Populated and frequently visited demonstrators	How much feedback is being generated by demonstrators? How much support	Monitoring usage stats. Monitoring support requests	Momentum within the GI community for setting up of production services.

		are we being asked to provide? How many improvements are we being asked to make?		
Ongoing	Usefulness of OGSA-DAI as a vehicle for making geospatial data available on the Grid	Is OGSA-DAI the best way to make geospatial data available on the NGS?	Obtain a measure of how easy it is to integrate other data from different sources. Engage with the OGSA-DAI User Group	Demands from Grid users to access the versions of OGSA-DAI with the OGC interfaces. Related but unthought of uses for OGSA-DAI being suggested.
Ongoing	Ability to extend project to production services	Is a clear path towards secure production services on the NGS emerging?	Regular liaison with other members of the JISC and e-infrastructure community	Ease with which production services can be established. Demand from NGS users for access to these services.

17. Quality Plan

Timing	Compliance With	QA Method(s)	Evidence of Compliance
Ongoing	Fitness for purpose	Stakeholder feedback	Community support of conclusions
	Best practice for processes	RAD/iterative testing	Working demonstrators
	Adherence to specifications		
	Adherence to standards	OGC conformance Shibboleth	If OGC web services created, validate against OGC conformance test if available or otherwise engage with the OGC process
	Accessibility legislation	Follow W3C's Web Accessibility Initiative guidelines	Use of Techdis guide to evaluate accessibility and usability of project web resources

18. Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
Ongoing	Web site	JISC/GI community	To promote awareness of	That an investigation into

			demonstrators and to encourage feedback on user requirements for production services.	making geospatial web services available on the NGS and that this opens up new possibilities.
Ongoing	Conferences/workshops	Mixed, not restricted to the academic sector	To highlight the results and outputs of the project	Share findings and encourage take up
Ongoing	Attend meetings and present at Grid Standards Developing Organisations (SDO), i.e. Open Grid Forum (OGF).	From industry, science and standards backgrounds	To inform of project, get peer review, feed into SDO and encourage take up.	Important enabling project underway and available to be built upon
Ongoing	Attend meetings and present at GI SDO, ie, OGC and ISO TC211	From industry, science and standards backgrounds	To inform of project, get peer review, feed into SDO and encourage take up.	Important enabling project underway and available to be built upon
Towards end	Use of JISC communication channels, ie, JISC Inform, links to Research Council bulletins	JISC/Research Councils	Promote awareness of the demonstrators and interest in using production services	Important enabling project nearing completion, demonstrators available, production services to follow

[

19. Exit and Sustainability Plans

Project Outputs	Action for Take-up & Embedding	Action for Exit
Output from the requirements and review WP	Input to relevant SDO WGs	Provide OGC with input, eg, Grid scenarios, for use within the Interoperability Programme
Project reports and other written outputs	Available for wider dissemination	Archived and available for access via project web site and JISC
Demonstrators	Persist as secure geospatial data access demonstrators	EDINA committed to making available for 6 months post project

Project outputs that may have potential to live on after the project ends are described below:

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
Mechanism used for bridging Shibboleth and Grid	Contributes to fundamental work necessary to make data and services available on the Grid	Liaise with other projects looking at the ShibGrid problem and make sure solution is compatible. Thorough dissemination.	

	in the UK		
OGC interfaces integrated with OGSA-DAI	The OGC interfaces are widely used	Ensure implementation is robust enough for production.	

Appendixes

Appendix A. Project Budget

Budget across Academic Years – Area A

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Project Director					
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SDSS Advisor					
Shared EDINA/NeSC Staff					
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Budget across Academic Years – Area B

1.5 NcESS/EDINA staff member at each OGC TC meeting during project duration	No.s meetings	Year 1	Year 2	Total
Accommodation @ £500 per attendee	3	2,250	2,250	4,500
Registration fees @ £170 per attendee	3	765	765	1,530
Travel @ £400 per attendee	3	1,800	1,800	3,600
Subsistence @ £250 per meeting	3	1,125	1,125	2,250
Total				11,880

Appendix

B. Work Packages

WORKPACKAGES	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1: Project Management																					
2: Requirements and Review																					
3: Integrate WCS into OGSA-DAI																					
4: Exemplar client applications																					
5: Dissemination																					
6: Engagement with OGC																					

Project start date: 10/10/06

Project completion date: 31/5/08

Duration: [20] months

Workpackage and activity	Earliest start date	Latest completion date	Outputs (clearly indicate deliverables & reports in bold)	Milestone	Responsibility
<p>WORKPACKAGE 1: Project Management</p> <p><u>Objective:</u> To co-ordinate and manage the work and day-to-day progress. To provide a communication medium between the centre and the funders. Consolidation of the project planning, control, progress and reports, milestone reports, financial statements and budgetary overviews. Coordination with partners, associated entities and Standards Developing</p>	10/10/06	31/5/08			EDINA

Organisations.					
1. Project Plan		11/12/06	D1/1 Project Plan		CH
2. Final report: Report on the project's achievements, findings, outcomes, and messages to the JISC community.		31/05/08	D1/2 Final Report		CH
WORKPACKAGE 2: Requirements and Review <u>Objective:</u> Establish comprehensive understanding of security issues relevant to Grid and OGC collision to ensure project is fully informed before committing effort to creating the demonstrators	03/01/07	30/06/07			NeSC / EDINA
3. Develop the Use Cases upon which the demonstrators will be based	03/01/07	31/01/07	D2/1 Use Cases		EDINA/NCeSS/ MIMAS
4. Review current state of the art and best practice across the intersection of Grid, Shibboleth, GI and Web Services communities.	03/01/07	30/05/07	D2/2 Report		NeSC
5. Final Report on Requirements and Review detailing the approach to be used with the demonstrators.	30/05/07	30/06/07	D2/3 Final Report on Requirements and Review		NeSC/EDINA
WORKPACKAGE 3: Integrate WCS into OGSA-DAI <u>Objective:</u> Integrate the OGC Web Coverage Service (WCS) interface specification into OGSA-DAI	01/11/06	31/3/07			EDINA/NeSC
6. Add WCS data source to OGSA-DAI	01/11/06	31/3/07	D3/1 Modified OGSA-DAI		EDINA/NeSC

<p>WORKPACKAGE 4: Exemplar client applications</p> <p><u>Objective:</u> In collaboration with the project partners, build a number of clients which demonstrate secure access to EDINA hosted geospatial data.</p>					
7. An e-Social Science demonstrator built around the NCeSS MoSeS node	01/07/07	31/12/07	D4/1 Working e-Social Science demonstrator		NCeSS/EDINA
8. A Datacentre demonstrator showing the integration of data from MIMAS and EDINA	01/07/07	31/12/07	D4/2 Working datacentre demonstrator		EDINA/MIMAS
9. A workflow demonstrator based on output from the Newcastle SAW-GEO project	01/07/07	31/12/07	D4/3 Working geoprocessing workflow demonstrator		EDINA/N'castle
<p>WORKPACKAGE 5: Dissemination</p> <p><u>Objective:</u> Development of a roadmap for availability of geospatial services on the grid, presenting work to conferences, workshops, etc.</p>	09/10/06	31/05/08			EDINA/Project Partners
10. Project website linking SEE and SAW-GEO with Grid OGC Collision		31/01/07	D5/1 Project website up		EDINA
11. Organise OGC workshop at OGF20 and present Grid OGC Collision projects		07/05/07	D5/2 OGF20 workshop		EDINA
<p>WORKPACKAGE 6: Engagement with OGC</p> <p><u>Objective:</u> Subject project developments to peer review and</p>	01/12/07	31/06/08			

discussion.					
12. Presentation the Security WG		04/07	D6/1 Ppt on website		EDINA

Members of Project Team:

EDINA

CH: Chris Higgins