JISC Project Plan

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Lead Institution	Newcastle University		
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Partner Institutions	Not applicable		
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Programme Name	*JISCMRD02*		
Programme Manager	Simon Hodson		

Document Information			
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1 Project overview

1.1 Project summary

The significance of research data has increased dramatically in recent years both in the volume of data collected and in the impact that it makes on the research being conducted in both an academic and financial sense: we have entered into the fourth paradigm of research in which data is key[1]. Data is no longer seen as a throwaway commodity, which has no life outside the scope of the project. Other researchers may seek to validate the original research by reanalysing it, or may seek to use it in some new analysis. This latter case becomes more significant as the size of the data increases thus increasing the cost associated in reproducing it (if this is even possible). Funding councils are now expecting researchers to make their data available to others. This is non-trivial and poses significant burdens on the individual researcher. Further, an individual may leave the field while their data is still of use to those who remain.

As a research-led institution, Newcastle University is committed to the full lifecycle of research management, investing over the last 4 years in the development of two major systems to support researchers: MyProjects[2] and MyImpact[3]. Leading on from this successful development, University Research Committee has identified the need for policies to govern the storage, management and curation of research data across the institution. *Iridium*, which is a significant intra-institutional collaboration, will produce those policies in consultation with researchers along with the infrastructure required to support their adoption and use.

The aim is to produce a complete holistic plan and infrastructure for Research Data Management in the University, making data generated by research at the University both available and discoverable with effective curation throughout the full data lifecycle in consultation with the researchers who produce it. Specific objectives are: to determine current practice and future requirements; to produce an institutional RDM policy informed by the results; to support that policy by integrating data management tools and support into a pilot data management infrastructure.

1.2 Objectives

In order to achieve its primary aim as defined above, the project will need to fulfil the following specific objectives:

1. Perform a broad brush survey of current policy and practice coupled with a requirements analysis in order fully to understand and scope the work and to identify a suitable cross-section of researchers to participate in consultation re policy and in assessment of the tools piloted.
2. Drawing on the results of the survey, produce a coherent framework of policy and practice in order to effect institutional data management. This will include:
    - assessment of any policy issues specific to the use of cloud or shared services;

[1] *http://research.microsoft.com/en-us/collaboration/fourthparadigm/* (accessed October 2011)
[2] *http://www.ncl.ac.uk/res/resources/myprojects/* (accessed October 2011)
[3] *http://www.ncl.ac.uk/res/resources/myimpact/* (accessed October 2011)

- the drafting of a formal institutional data management policy and the initiation of the procedure for its formal approval and adoption by the University;

3. Identify the tools required to support the policy and practice framework in order to integrate them to provide research data management systems. Two possible examples for which an institutional requirement has already been identified:
    - a data curation solution for biomedical imaging data integrated with the existing research data storage service;
    - provision of a system to easily transfer data, metadata and access information to the ESRC data archive.
4. Identify existing institutional systems that could form part of a research data management infrastructure. For example:
    - the MyProjects research information management system, which holds details of all grants awarded;
    - Talend[4], which is currently used to manage institutional data;
    - the enterprise Google Search Appliance, which could possibly be used to produce an institution-wide metadata index over disparate storage solutions in lieu of an institutional repository.
5. Produce a "Human Support Infrastructure" consisting of training and guidance on good practice, guidance on local policy and assistance in the use of the tools and management systems provided in order to support researchers in the use of the whole infrastructure and to embed good practice uniformly across the institution. We note in this respect the findings of the IDMB project that policy and governance need to be presented in an accessible way and that training and guidance on data management is an important requirement.
6. Integrate the policy framework, research data management systems and support infrastructure to provide a pilot research data management infrastructure.
7. Evaluate the pilot research data management infrastructure across all faculties in order to produce a business case for sustainability, including costings.
8. Document and disseminate all processes and findings in order to inform the University, the Programme and community at large.
9. Liaise with the Programme and the Data Curation Centre throughout in order to disseminate, evaluate and validate project outcomes and deliverables.

1.3 Anticipated outputs and outcomes

Project deliverables have been summarised in Table 1 below.

Table 1. Iridium project deliverables with descriptions.

Deliverable	
D1	Project web site[5].
D2	Project plan.
D3	Steering group.
D4	Consultative group.

[4] *http://www.talend.com/index.php* (accessed October 2011)
[5] *http://research.ncl.ac.uk/Iridium/* (accessed October 2011)

Deliverable	
D5	Evaluation strategy.
D6	Dissemination strategy.
D7	Published review of policy and practice.
D8	Published requirements analysis.
D9	Use cases.
D10	Policy and practice framework for research data.
D11	Draft institutional Research Data Management policy submitted for approval.
D12	Report on the outcomes of the assessment of RDM tools.
D13	Report on the outcomes of the assessment of RDM systems.
D14	Research data management systems.
D15	Human Support Infrastructure.
D16	Pilot RDM infrastructure.
D17	Refined use cases.
D18	Report on the effectiveness of solutions identified.
D19	Report on the effectiveness of the pilot research data.
D20	Business case for sustainability.
D21	Outcomes of dissemination strategy (e.g. internal dissemination and publicity disseminated externally; presentations at Programme meetings and other events).

Project deliverables were mapped to JISC output and outcome headings and are summarised in Table 2 below.

Table 2. Iridium outputs and outcomes.

Output / Outcome Type	**Brief description**
Research outputs	
Research data metadata	Research data is made more discoverable.
Evidence	
Evaluation	Evaluation report on the effectiveness of solutions identified the effectiveness of the pilot research data infrastructure; and the business case for sustainability.
Guidance	
Policy review	Published review of policy and practice.
Policy analysis	Published requirements analysis of tools and systems.
Dissemination materials	
Web site, blog and social media	Project web site[6] created and social media channels (Wordpress blog[7] and Twitter[8]) created and used.

[6] *http://research.ncl.ac.uk/Iridium/* (accessed October 2011)
[7] *http://iridiummrd.worpress.com/* (accessed October 2011)

Output / Outcome Type	Brief description
Process/policy	
Steering groups	Management, Steering, and Consultative Groups established.
Policy frameworks	Policy and practice framework for research data management; draft institutional Research Data Management policy submitted for approval.
Report	
Project plan	Project plan submitted.
Reports	Report on the outcomes of the tools and systems assessment.
Online tools/sytems	
RDM tools/systems	Research data management tools and systems.
Case studies	
Scenarios	Use cases and scenarios documented; refined use cases documented.
Events (e.g. workshops)	
Dissemination	Project disseminated internally and publicity disseminated externally; presentations at Programme meetings and other events.
Pilot services	
Pilot RDM service	Pilot RDM infrastructure established.
Specifications	
RDM metadata schema	Local RMD schema established.
Guidelines	
Guidelines/knowledge	Human Support Infrastructure instigated.
Knowledge and experience	
Strategy	Evaluation and dissemination strategy planned.
Good practice	RDM good practice developed through Human Support Infrastructure and adopted by researchers.

1.4 Overall approach

1.4.1 Project methodology

Iridium will culminate in the production of an institutional research data management policy by the University Research Office. This policy will be supported by the production of user support and tools by the Digital Institute, Information Systems & Services and the Library. Project management will be performed by Higher Education Academy Subject Centre for Medicine, Dentistry and Veterinary

[8] *http://www.twitter.com/iridium_mrd* (accessed October 2011)

Medicine (MEDEV) who will also contribute their considerable expertise and ensure that anything produced by the project is joined up with learning and teaching where that is appropriate.

1.4.2 Scope and boundaries

Iridium will not directly address research data storage, however this may be included in recommendations and formulation of business plans. *Iridium* is not about creating new systems, but using and adapting existing systems.

1.4.3 Critical success factors

Critical success factors have been identified and are detailed below:

- Institutional buy-in;
- Influence beyond project on other policies;
- Stakeholders engaged;
- Data routinely discovered;
- Permanent change to practice;
- Fitness for purpose of RDM systems.

1.5 Anticipated impact

We anticipate *Iridium* to have impact at both an institutional level and on the wider sector.

Table 3. Iridium anticipated impact.

Impact Area	**Anticipated Impact Description**
Interdisciplinary research activity	Enhanced discoverability will result in greater 'cross-pollination' of research.
Capacity building	Project will result in changes to polices and processes, with resultant business cases.
Public accessibility	Enhanced discoverability will aid accessibility.
Transparency	Enhanced discoverability will aid transparency.
Researchers of the future	Early stage researchers will be equipped with skills for RDM good practice.
Transformative process	Comparison against good practice will identify areas for change in personal and institutional practice.
Facilitate FOI response	Enhanced discoverability will aid FOI requests.

1.6 Stakeholder analysis

Table 4. Iridium stakeholder analysis.

Stakeholder	**Interest / stake**	**Importance (H/M/L)**
PG Research Deans	On behalf of research students.	H

PG Training Managers	On behalf of research students.	H
Heads of Institutes	On behalf of research staff.	H
School Managers	All staff.	M
Project partners	Success of project outcomes.	H
Researchers	Access to/re-use of data. Citation advantage.	H
Data Protection/FOI/Copyright Officers, University solicitors	Legal safeguards	M
Research governance	Compliance with national policy.	H
Policy Committees	Joined up policies.	M
JISC	Project outcomes.	H
DCC	Standards compliance and project outputs.	H
Internal auditors	Quality assurance procedures.	M
Commercial partners	Access to academic data; confidentiality of commercial data; IPR.	M
Research councils	Meta-analyses; transparency; value for money.	H
Other external stakeholders (e.g. EU, international)	Internationalisation of research.	M
Public	Increased engagement; transparency; value for money.	L

1.7 Related projects

We have identified the following related projects:

- JISCMRD02 projects (see Google map[9]);
- University Copyright Group;
- EnCoRe project[10] (consent issues explored in relation to 'bio-bank' data collection);
- research projects at Newcastle University.

1.8 Constraints

The following constraints will have to be managed in order to successfully complete our project:

- managing the expectation of some researchers that the project will provide them with free research data storage.

Please see also see risk analysis table (section 1.10 Risk analysis on page 10 below).

1.9 Assumptions

The project will be run with the following assumptions:

[9] *http://maps.google.co.uk/maps/ms?msid=210493456856136057364.0004ab687f5a25636a285&msa=0* (accessed Oct 2011)
[10] *http://www.encore-project.info/* (accessed Oct 2011)

- postgraduate students can be recruited in a timely manner;
- on-going support from University Senior Management;
- a valid sample of research data types, systems and processes is identified in requirements survey;
- it is possible to achieve a viable policy framework;
- it is technically possible to provide tools to support the policy framework.

1.10 Risk analysis

The following factors that could pose a risk to the project's success have been identified and assessed for likelihood and severity, together with action to be taken. A risk register will be maintained by the project to record any further risks identified as work progresses.

Table 5. Iridium risk analysis.

Risk Description	Probability (P) 1 – 5	Severity (S) 1 – 5	Risk Score (PxS)	Detail of action to be taken (mitigation / reduction / transfer/ acceptance)
REF14 is number one priority for researchers	5	4	20	Project need to be sensitive to researchers workload.
Incentives for RDM policy usage ('stick and carrots') not effective	4	4	16	Reduction through assessing key motivator for researchers.
Unintended consequences of data discovery and usage/re-analysis	4	4	16	Acceptance of risk when moving into new era.
Researchers are engaged with project, but do not use project outputs and policies are not endorsed	3	5	15	Outputs fit for purpose and endorsement of policy by Senior Management.
There is a failure to meet researchers needs and/or mismatch of expectations	3	5	15	Clear project message of project scope from outset.
RDM policy followed late in research project timeline (i.e. at journal publication time)	4	3	12	MRD policies integrated with required University wide research project requirements.
Research projects not approved due to poor MRD plan	2	5	10	Mitigation through training and forewarning.
Highlights existing practice in data sharing and need for change	5	2	10	This is a desirable outcomes with benefits in the long term.
Failure of researchers to engage with the project	2	5	10	Future requirements expressed by the funding councils mean that engagement is very much in every researcher's interest. Development of an effective stakeholder engagement strategy. Ensuring that the RDM infrastructure & systems are effective, usable and as unobtrusive as possible.
Researchers needs out of scope	3	3	9	Clear project message of project scope from outset.

Risk Description	Probability (P) 1 – 5	Severity (S) 1 – 5	Risk Score (PxS)	Detail of action to be taken (mitigation / reduction / transfer/ acceptance)
Researchers do not identify their needs	2	4	8	Researchers given opportunity to specify needs.
Researchers needs not in-line with research councils	2	4	8	Research council requirements will need to be met to receive funding.
Metadata insufficient to enable data to be discovered and re-used	2	4	8	Clear specification, user needs driven with guidance and training will mitigate.
Data made discoverable is not used and/or there is no long term need for data curated in this way	3	2	6	They are many drivers for discoverable data.
Anonymisation for open data results in loss of utility	3	2	6	Related projects can assist with this equilibrium. Acceptance of the need to respect privacy/consent issues.
Failure to achieve institution-wide policy	1	5	5	Full institutional endorsement has been obtained.
Organisational	1	4	4	All managers involved are experienced and effective. Develop effective communications strategy. Monitor efficacy of project management arrangements.
Scope creep	1	4	4	Aims, objectives and the scope of pilot systems will be carefully and clearly defined in order to manage expectations.
Staffing	1	3	3	Existing staffing availability already identified. There is redundant cover for most important aspects of roles.

1.11 Technical developments

The project will follow best practice for any technical developments, including:

- Processes will be documented on the web site and revised as the project progresses;
- Development servers will be used to test and refine software before deployment;
- A shared subversion repository will be used for any code development;
- There will be a shared repository for project documentation.

Any technical developments will be discussed on the project blog.

1.12 Standards

Iridium will conform to templates and standards as advised by relevant bodies (such as CETIS) and the JISC Programme Manager. The project will encourage the adoption and use of open standards based APIs and applications.

Table 6. Iridium *project standards.*

Name of standard or specification	Version	URL
RSS (or Atom)	2.0	*http://cyber.law.harvard.edu/rss/rss.html*
OAI-PMH	2.0	*http://www.openarchives.org/OAI/openarchivesprotocol.html*
Dublin Core		*http://dublincore.org/*
DDI		*http://www.ddialliance.org/*
METS	3.1	*http://www.loc.gov/standards/mets/*
XML		*http://www.w3.org/XML/*

1.13 Intellectual property rights

Understanding IPR and confidentiality in relation to storing research data is a key area for policy development. Best practice ethical standards for data derived from human research will be adopted and documented within the nested policy infrastructure. Copyright, DPA and FOI Officers will be invited to be involved in WP2 (Policy).

All outputs of the project will be freely provided to the education sector (within legal limitations e.g. data protection). IPR will be owned by Newcastle University and copyright works will be licensed to be used and adapted for free under appropriate open source licensing agreements, such as Creative Commons, Apache License 2.0 and GPLv3 .

It should be noted, however, that this does not include background IPR in pre-existing bespoke institutional systems such as MyImpact.

2 Project resources

2.1 Project partners

This is not applicable to *Iridium*.

2.2 Project management

2.2.1 Management

The project management group is convened fortnightly by the project manager. It consists of:

- the Project Director;
- a representative of the Digital Institute;
- a representative of the University Library;
- a representative of Research & Enterprise Services;
- representatives of active workpackages as appropriate.

In addition, meetings of the full (17-strong) project team will be convened by the Project Director every 2-3 months.

2.2.2 Governance

The project is monitored by a steering group consisting of Director for Research & Enterprise, the University Librarian, the Director of Information Systems and Services, the Director of the Digital Institute and the Director of MEDEV. The steering group is chaired by a Faculty Research Dean. Terms of reference are likely to include:

- To provide a forum for consultation and discussion;
- To provide strategic advice and guidance to the project team;
- To act as advocates for the project and promote the project elsewhere;
- To receive and comment on project reports and documentation;
- To monitor the project performance;
- To offer guidance and advice to the project team on issues relating to evaluation and dissemination;
- To make recommendations for appropriate embedding and exit strategies.

2.2.3 Engagement with key stakeholders

The project will report on a monthly basis to University Research Committee. This is a Committee of Senate which consists of:

- The Pro-Vice-Chancellor (Research and Innovation) (Chair);
- The Faculty Deans of Research ;
- The Director of Business Development;
- The Head of the University Research Office (also a member of the project team);
- The Head of the Joint Research Office.
- A consultative group consisting of a cross-section of researchers will be set up in the course of workpackage 1 (Requirements) to ensure that the project's work is on track and that consultation is as extensive as possible. Once established, this will be convened by the Project Manager every 6-8 weeks or as required.

2.2.4 Project roles

All members of the project team, their roles, and contact details are listed below. They can collectively be contacted through the project mailing list (*Iridium@ncl.ac.uk*). FTE of project team members are listed in Table 7 on page 13 below as appropriate. The 'days per week' metric is not appropriate to *Iridium* as, in general, specialists will contribute intensively to particular workpackages rather than have their effort spread over the whole project duration.

Table 7. Iridium project team roles.

Team Member Name	Role	Contact Details	FTE
Ben Allen	Systems administrator, Infrastructure Systems	*ben.allen@newcastle.ac.uk*	0.2

Team Member Name	Role	Contact Details	FTE
Peter Dinsdale	Information security specialist	*peter.dinsdale@newcastle.ac.uk*	Adviser
Clive Gerrard	Research computing specialist	*clive.gerrard@newcastle.ac.uk*	0.3
Jill Golightly	Head of University Research Office; will oversee policy formulation & liaise with senior University management	*jill.golightly@newcastle.ac.uk*	0.1
Paul Haldane	Manager infrastructure systems	*paul.haldane@newcastle.ac.uk*	0.1
Suzanne Hardy	Senior Advisor, Management group	*suzanne.hardy@newcastle.ac.uk*	Adviser
Simon Kometa	Research computing specialist, training/human support	*simon.kometa@newcastle.ac.uk*	0.3
Andrew Martin	Collaborative systems analyst specialising in systems integration	*andrew.martin@newcastle.ac.uk*	0.4
Stephen McGough	Research Manager of Digital Institute, policy working group	*stephen.mcgough@newcastle.ac.uk*	0.1
Niall O'Loughlin	Policy and Information Officer, Research & Enterprise Services	*niall.o'loughlin@newcastle.ac.uk*	0.2
Megan Quentin-Baxter	Management Group, policy working group	*megan.quentin-baxter@newcastle.ac.uk*	Adviser
Paul Thompson	Collaborative systems specialist	*paul.thompson@newcastle.ac.uk*	0.4
Janet Wheeler	Project Director	*janet.wheeler@newcastle.ac.uk*	0.3
John Williams	Head of Digital Library Services, University Library	*john.williams@newcastle.ac.uk*	0.1
Dave Wolfendale	Assistant Director Teaching, Learning & Research	*dave.wolfendale@newcastle.ac.uk*	Adviser
Lindsay Wood	Project Manager	*lindsay.wood@newcaslte.ac.uk*	1
Simon Woodman	Research Associate in Digital Institute	*simon.woodman@newcastle.ac.uk*	1
Postgraduate support team	Contribute to all aspects of project	via *Iridium@ncl.ac.uk*	1.5

2.3 Programme support

We expect the programme as a whole to collectively identify challenges and solutions (e.g tools and systems), in addition to those identified by *Iridium*. The *Iridium* project would welcome support from the Programme or Programme Manager in the following areas:

- Methods, language, prior experiences and best practice in a University wide survey for RDM requirements gathering;
- Comments on *Iridium*'s external and internal RDM policy review to be conducted as part of WP0 and WP2;

3 Detailed project planning

3.1 Evaluation plan

The quality of the project outputs and the success of the project will be evaluated according to Table 8 below. This will be expanded into a full evaluation plan in the course of WP0.

Table 8. Iridium evaluation plan.

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
WP8	Institutional buy-in.	Are policy recommendations adopted?	Project representation on relevant committees.	Ratification of policy framework by institution.
WP9	Influence beyond project on other policies.	Does related policy change flow from/reference project?	Project representation on relevant committees; qualitative quotes; case studies; policy analysis.	Related policies revised/guided.
WP8	Stakeholders engaged.	Do stakeholders support/use RDM infrastructure?	Web logs; survey; comparison against baseline data.	Widespread reference and use of infrastructure.
WP5	Data routinely discovered.	Is the data retrievable and usable?	Web logs/Google analytics; survey; comparison against baseline data.	Data requests; increase in general awareness.
WP8	Permanent change to practice.	Do researchers follow good practice?	Survey; comparison against baseline data; qualitative quotes.	Success rate of grant proposals. Absence of negative outcomes of poor RDM practice.
WP7	Fitness for purpose of RDM systems.	Are researchers satisfied with systems?	Survey; comparison against baseline data; qualitative quotes; web logs.	Researcher use and integrate RDM systems. Behavioural dissemination.

3.2 Quality assurance

The following quality assurance processes are planned.

Table 9. Iridium quality plan with quality criteria.

Output	Work packages				
Timing	**Quality criteria**	**QA method(s)**	**Evidence of compliance**	**Quality responsibilities**	**Quality tools (if applicable)**
On-going	Change control.	Changes flagged to the Management Group.	No slippage.	Project manager/director.	Management Group meetings.

Output	**Work packages**				
Timing	**Quality criteria**	**QA method(s)**	**Evidence of compliance**	**Quality responsibilities**	**Quality tools (if applicable)**
On-going	Documentation.	Version numbering.	All documents clearly identified.	Project manager.	Programme managers; internal sharing via VRE project management site , outside feedback via blog/Twitter.
Oct 2011	Staffing.	WP Leaders appointed; staff identified/appoi nted.	All WPs are led.	Project manager	Newcastle HR processes
Jun 2013	WP deliverables.	WP plans completed and followed.	WPs completed on time.	WP leaders/ Management Group	Programme managers; internal sharing via VRE project management site , outside feedback via blog/Twitter.
On-going	Dependencies.	Dependencies highlighted and anticipated (see risk).	WPs prioritised.	Project manager.	Project plan.
Output	**Standards**				
On-going	Data descriptions.	Follow CETIS and similar metadata guidelines.	Metadata part of policy development.	Project manager.	Metadata set via CETIS, etc.
On-going	Content packaging.	Content packaging to XML criteria met.	CP standard met.	Project manager.	Published IMS standards.
On-going	OAI-PMH.	Data feeds.	Uptake by others.	Project manager.	OAI-PMH.
On-going	Website information.	RSS 2.0 and Atom 1.0.	RSS/Atom feeds live.	Project manager.	Feedreaders e.g. Google Reader.
Output	**Discoverability**				
On-going	Metadata.	Guidelines adhered to.	DCC guidelines complied with.	Project manager.	DCC guidelines.
On-going	Twitter, Diigo.	Use #jiscmrd.	Metadata findable.	Project manager.	Use #jiscmrd tag.
Output	**Risk Management**				
On-going	Risk mitigation.	Maintain risk management strategy.	Project documentation.	Project manager.	Project plan.

3.3 Dissemination plan

Ongoing external dissemination will be primarily via the blog and project website and at stakeholder meetings. Full reports and deliverables will be available to the Programme Managers for the JISC

website. The project web site[11], mailing list[12] and blog/RSS feed[13] will be used to make project outputs available as they are produced and to disseminate news of recent project activities and findings, as well as related events, outputs, reports etc relevant to *Iridium*. Benefits realisation activities with other projects in the JISCMRD02 programme, in particular those funded under the same strand will be conducted (such as actively sharing ideas, experiences, materials, problems and solutions in the hope of creating synergies and in the expectation of achieving coordination). This will occur as part of programme meetings, as separate events (physical or virtual), or by the use of social media. *Iridium* will present on project activities, outputs and findings at appropriate external and internal events to be identified as the dissemination strategy develops, including programme meetings and DCC events. We have already identified the Association of Research Managers and Administrators as one potential additional avenue of dissemination and will actively be seeking others (e.g. librarian associations). Internal stakeholder engagement will be conducted through faculty-based workshops to inform researchers of the project, engage them with it and identify exemplar research projects. An end of project workshops will be used disseminate information regarding the project's outcomes and outputs e.g. to describe the policy framework and the reasons for it, and to demonstrate the supporting tools. All components of the support infrastructure produced by WP6 will be made available in a generalised (non-local) form as exemplars for dissemination purposes.

Table 10. Iridium *dissemination plan.*

Timing (month)	**Dissemination Activity**	**Audience**	**Purpose**	**Key Message**
1-21 (outputs will be disseminated as they are produced)	Project website.	External stakeholders.	Awareness of project, sharing of good practice, identification of collaboration opportunities.	Institutional RDM is fundamental to Newcastle University's research strategy. JISC are funding this important area. *Iridium*'s aim is to produce a complete holistic plan and infrastructure for Research Data Management in the University, making data generated by research at the University both available and discoverable with effective curation throughout the full data lifecycle in consultation with the researchers who produce it.
1-21 (outputs will be disseminated as they are produced)	Social media (e.g. blog, RSS feed, Twitter).	External stakeholders; Programme team; other MRD projects.	Awareness of project, sharing of good practice, identification of collaboration opportunities.	*Iridium* is actively investigating RDM policies at Newcastle University. *Iridium* welcomes sharing good practice and collaboration opportunities.
1-21	Project mailing list.	Internal stakeholders; Programme team; other MRD projects.	Problem sharing/solving; sharing of good practice, identification of collaboration opportunities, avoidance of repeating work done elsewhere.	*Iridium* represents a collaboration between the University Research Office, the Digital Institute, the University Library and Information Systems & Services. All members of the project team are engaged and actively contribute. Communications are outwards facing and guidance from Programme and critical friends are welcome.

[11] *http://research.ncl.ac.uk/iridium/* (accessed October 2011)
[12] *iridium@ncl.ac.uk* (accessed October 2011)
[13] *http://iridiummrd.wordpress.com/* (accessed October 2011)

Timing (month)	Dissemination Activity	Audience	Purpose	Key Message
12-21	Conferences/engagement events (i.e. Association of Research Managers and Administrators, faculty-based workshops).	External stakeholders; internal stakeholders; strategic engagement.	Awareness of project, sharing of good practice, identification of collaboration opportunities.	Institutional RDM is fundamental to Newcastle University's research strategy. JISC are funding this important area. *Iridium*'s aim is to produce a complete holistic plan and infrastructure for Research Data Management in the University, making data generated by research at the University both available and discoverable with effective curation throughout the full data lifecycle in consultation with the researchers who produce it.
2-21	University Research Committee.	Internal stakeholders; strategic engagement.	Engagement of key stakeholders; integration with current policies and practices.	Institutional RDM is fundamental to Newcastle University's research strategy.
1-21	Regular reporting.	Internal stakeholders; Programme team.	Problem sharing/solving; sharing of good practice, identification of collaboration opportunities, avoidance of repeating work done elsewhere.	*Iridium* is actively investigating RDM policies at Newcastle University. *Iridium* welcomes sharing good practice and collaboration opportunities.
3-21	Programme meeting attendance.	Programme team; other MRD projects.	Problem sharing/solving; sharing of good practice, identification of collaboration opportunities, avoidance of repeating work done elsewhere.	*Iridium* is actively investigating RDM policies at Newcastle University. *Iridium* welcomes sharing good practice and collaboration opportunities.
6-13	Guidance advice.	Internal stakeholders; Programme team; other MRD projects.	Sharing of good practice; efficiency (value for money).	Institutional RDM is fundamental to Newcastle University's research strategy. Through *Iridium*, clear guidance and support will be provided for researchers to use available tools and systems.

3.4 Exit and embedding plans

Consideration has been made for the following outputs/outcomes at the end of the project to ensure they are taken up by relevant stakeholders as detailed below.

Table 11. Iridium exit and embedding plans.

Project Outputs/Outcomes	Action for Take-up & Embedding	Action for Exit
Policy framework	Dissemination at an institutional level during the project and after the project end.	Will be put forward for ratification at an institutional level.
Research data management systems	Dissemination at an institutional level during the project and after the project end. Will be added to ISS Service Catalogue.	Systems will be put into production.
Support infrastructure	Support materials made available via faculty postgraduate training.	Materials will be available on the project web site for a minimum of 3 years.
Use cases & reports on solutions identified	Dissemination at / beyond project end.	Materials will be available on the project web site for a minimum of 3 years.
Pilot RDM infrastructure	Will be assessed by exemplar research projects.	Business case for sustainability will be produced at the project end. All constituent components will remain available as described above.

3.5 Sustainability plans

The following project outputs/outcomes are will be taken forward as detailed below.

Table 12. Iridium sustainability plans.

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
RDM infrastructure (consisting of policy, systems & support).	Will be required for fulfilling funding requirements. Potential for enhancing the effectiveness of research. Potential for engaging with the community.	Demand from researchers and the business.	Effective institutional embedding.

4 Appendix 1. Project budget

Please see attached supplied JISC Excel spreadsheet template.

5 Appendix 2. Workpackages

***iridium* workpackages with timeline.**

WORKPACKAGES	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Project setup																						
0: WP0																						
1: WP1				↓	→	↓	→															
2: WP2				→	↑	→	↑															
3: WP3																						
4: WP4																						
5: WP5																						
6: WP6																						
7: WP7																						
8: WP8																						
9: WP9																						

Project start date: 1st October 2011

Project completion date: 30st June 2013

Duration: 21 months (18 months + 3 month extension)

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
WORKPACKAGE 0: Project management Objective: To establish the project and team and deliver operational plans and reports on time	Oct 11	Jun13			MEDEV (SH, LW, MQB) and ISS (JEW) with Management Group.
Formalise project team roles			Roles understood, WP small workgroups established.		LW.
Recruit postgraduate research students			Research student with specified tasks.	M1. Postgraduate students recruited.	JEW.
Detailed project planning			Workpackage tasks planned.		LW.
Establish website			**D1. Project web site.**		LW.
Submit project plan			**D2. Project plan.**	M2. Project plan accepted.	LW.
Establish and timetable Steering group meeting			**D3. Steering group.**		JG.
Establish and timetable Consultative group meeting			**D4. Consultative group.**		Management Group
Document evaluation strategy			**D5. Evaluation strategy.**		LW.
Document evaluation strategy			**D6. Dissemination strategy.**		MEDEV.
Related external projects policy review			External policy review.		LW.
Submit monthly reports, monthly blog posts, six monthly finance reports and project final report			**Project reports.**	M3. Scheduled project reporting.	
WORKPACKAGE 1: Requirements Objective: Gain a full understanding of the needs and requirements for Research Data Management	Oct 11	Apr 12			DI (SW,AM and PH) with PJW, NO, CG and JEW. Support from LW.
Identify representative sample of researchers/projects			Respondent target list.		
Write and conduct requirements survey			Survey.		

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
Plan and conduct face-to-face requirements interview			Interviews.		
Local policy and practice analysis			**D7. Published review of policy and practice.**	M4. Policies analysed.	
Synthesis of requirements			**D8. Published requirements analysis.**	M5. Requirements identified.	
Document use cases			**D9. Use cases.**		
Identify exemplar research projects			Exemplar projects 'on-board'.	M6. Explemplar project identified.	
Align to research funder policies			Funder policy alignment.		
WORKPACKAGE 2: Policy Objective: To Produce a policy framework	Dec 11	Aug 12			URO (JG and NO) with PD, MQB, PJW and ASM or SW.
Draft of a formal institutional data management policy			**D10. Policy and practice framework for research data management.**		
Initiate the procedure for policy formal approval and adoption by the University			**D11. Draft institutional Research Data Management policy submitted for approval.**	M7. Formal policy approval initiated.	
WORKPACKAGE 3: Assessment of tools Objective: Identify the functionality required to support the policy and practice framework	Dec11	Jun 12			ISS (JEW, PT and PH) and iridium support team.
Analysis of available tools			Tools identified		
Analysis of tools for adaption/adoption					
Summarise tools assessment and integration			**D12. Report on the outcomes of the tools assessment.**	M8. Tools assessed.	
WORKPACKAGE 4 : Assessment of systems Objective: Identify existing institutional systems that could form part of a research data management infrastructure	Dec11	Jun 12			ISS (JEW, PT and PH).

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
Identify functionality provided by current systems (e.g. e-Science Central, MyProjects, Talend, Google Search Appliance)			Functionality known.		
Document findings.			**D13. Report on the outcomes of the systems assessment.**	M9. Systems assessed.	
WORKPACKAGE 5: Implementation of RDM systems Objective: Implement research data management systems	Jul 12	Sep 12			TBD by Management group.
Plan integrating tools and systems functionalities and services required by pilot policy			Integration plan formulated.		
Test and document against institutional use requirements (e.g. biomedical imaging, ESRC data archive)			Tested against institutional uses.		
Implement RDM systems			**D14. Research data management systems.**	M10. RDM systems implemented.	
WORKPACKAGE 6: User support Objective: Produce a "Human Support Infrastructure"	May 12	Jun 13			MQB, SK and JEW.

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
Write training and guidance materials on good practice, tools/systems and novel policy			***Training materials.*** • Web pages • Downloadable pdf summaries • Posters • Elearning materials as in an online tutorial? • Face to face training session • Workshops • Panopto online demonstration (mpg format) • Modification of existing documents e.g. degree programme handbooks for students		
Institutional/national policy • What is it and why? • Background • Curation, preservation, purpose, publication and citation (good practice)			'Training' in a variety of formats (see above) covering the institutional policy Dependent on policy development in other workpackages		
Tools • What are they (how)? • How to access tool, how to describe (metadata), how to add, how to use and reuse/modify and republish • Formats • National standards • Attribution			'Training' in a variety of formats (see above) covering the tools associated with managing research data Dependent on Tools identification and usability		
Systems • *Systems modification specification (business case – see evaluation)* • *Policy modification specification (business case – see policy and evaluation)*			*[Not part of WP6]*		

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
Accessing data from elsewhere • Complementing local research; new research designed to harness data from elsewhere; strategically planning new research			Newcastle staff and students enabled to access data in repositories from elsewhere Dependent on data sharing, DCC, etc.		
Deliver training/workshops			***D15. Human Support Infrastructure.***	***M11. Training delivered.***	
Dissemination of the human support infrastructure materials • Publicity and advertising – internal and external (e.g. emails signposting the guidance/training) • Netskills training materials (portfolio)			Marketing the 'human factors support'		
Identification of where human support infrastructure could be embedded • Liaison and training activities			Materials/training already available elsewhere are signposted or harvested		
Evaluation • Contribute to documentation for fitness for purpose • Facilitating development of discipline focus of support materials by Faculties (evaluation) • Final sign-off of requirements for full RDM support			Case studies, summary survey results summarised		
Engagement with business for innovation (external partners)			New partnerships with business		
Business case readability • Contribution to the readability of the final version of the business case (drafting the business case is outside the scope of WP6)			Human-readable and accessible business case		
Organise roadshow with DCC			***DCC event conducted.***		

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
WORKPACKAGE 7: Pilot infrastructure Objective: Deploy a pilot Research Data Management Infrastructure	Sep 12	Nov 12			TBD by Management group.
Plan integration of the policy framework, RDM systems and human support infrastructure			Integrated policy, systems and human infrastructure.		
Conduct integration of the policy framework, RDM systems and human support infrastructure			**D16. Pilot RDM infrastructure.**	M12. Pilot RDM infrastructure established.	
			D17. Refined use cases.		
WORKPACKAGE 8: Evaluation Objective: Evaluate the pilot RDM infrastructure	Sep 12	May 13			TBD by Management group.
Evaluate the pilot RDM solutions.			**D18. Report on the effectiveness of solutions identified.**		
Cross-faculty evaluation the pilot RDM infrastructure			**D19. Report on the effectiveness of the pilot research data infrastructure.**	M13. Pilot RDM infrastructure evaluated.	
Author business case and costing for sustainability			**D20. Business case for sustainability.**	M14. Business case written.	
Trial pilot infrastructure with exemplar projects			Knowledge/experience of pilot infrastructure.		
Document fitness for purpose			Fitness for purpose known.		
Monitoring the uptake of project outputs and revision of business case as needed					
longitudinal research project testing of pilot infrastructure within disciplines					
WORKPACKAGE 9: Dissemination Objective: Document and disseminate all processes and findings	Oct 11	Jun 13			LW with management team and postgraduate support team.

Workpackage and activity	Earliest start date	Latest end date	Outputs	Milestone	Responsibility
Conduct University and community dissemination. Attend Programme and host engagement events as relevant.			**D21. Outcomes of dissemination strategy (e.g. internal dissemination and publicity disseminated externally; presentations at Programme meetings and other events).**	M15. Dissemination conducted.	
Institutional 'transition' and embedding of the outputs in the institution Promoting the draft *iridium* recommendations to the research community Building relationship and working with DCI to adopt project outputs Three Faculty dissemination events plus one central launch event					

Members of Project Team:

MEDEV = MEDEV, SMSED

ISS = Information Systems & Services

DI = Digital Institute

LIB = University Library

URO = University Research Office

Ben Allen (BA)

Peter Dinsdale (PD)

Clive Gerrard (CG)

Jill Golightly (JG)

Paul Haldane (PH)

Suzanne Hardy (SH)

Phil Heslop (PH)

Simon Kometa (STK)

Andrew Martin (AM)

Stephen McGough (ASM)

Niall O'Loughlin (NO)

Victor Ottaway (VO)

Megan Quentin-Baxter (MQB)

Paul Thompson (PT)

Janet Wheeler (JEW)

John Williams (PJW)

Dave Wolfendale (DW)

Lindsay Wood (LW)

Simon Woodman (SW)

iridium support team:

Natalie Cresswell

Blanca Garcia

Jack Jago

Amy-Jane Lively

Kelechi Njoku

James Turland

Sathish Sankar Pandi

6 Appendix 3. Human support specific stakeholders

Updated workpackage specific stakeholders and triggers/format planning.

Table 13. Table of human support workpackage specific stakeholders.

Who	**Senior manager**	**Academic staff**	**Clinical staff**	**'Technical support' staff**	**Research admin staff**	**Admin/ other staff**	**RA (new staff)**	**PG PhD**	**Masters – Taught and Research**
When	Survey, interviews, meetings	Survey, new projects, flexible	New projects, flexible	Continuous	Regular	Meetings, consultation on policy	Induction, new projects	Graduate programme for research students	Graduate programme taught or research masters
Trigger	Consultation on policy, interviews	New project guidance (process), funder requirements	New project, ethics process, funder requirements	Direct comms, email, email list (or =)	Direct comms, email, email list (or =), funder requirements	NUinfo	Taking up new post, award of new project, funder requirements	Part of overall programme (optional)	Taught (not optional)
	Posters	Dissemination and posters	Posters	Dissemination	Dissemination		Posters	Modified programme documentation	Modified programme documentation
Tailoring	General	Specific for PIs	Specific for Clinical staff – refers NHS	Specific for technical staff	Specific for research administration staff	General	Specific for RAs and PG PhD	Specific for RAs and PG PhD	Specific for Masters students – possibly by Faculty
Who triggers	Project team	Research and Enterprise	Research and Enterprise	Project team	Research and Enterprise	Publicity	Staff development / CASAP	Those who teach research methods	Those who teach research methods
	Posters	Posters	Posters	R&E training	R&E training	Posters	Line manager	PIs/supervisor	PIs/supervisor
How	Project documentation	On line tutorial, targeted news, training	On-line tutorial (clinician path within main tutorial)	Targeted news and email	Targeted news, training	Targeted news and email	Face to face training, lecture, workshop	Face to face training, lecture, workshop	Face to face training, lecture, workshop

Who	**Senior manager**	**Academic staff**	**Clinical staff**	**'Technical support' staff**	**Research admin staff**	**Admin/ other staff**	**RA (new staff)**	**PG PhD**	**Masters – Taught and Research**
	Dissemination presentation	Dissemination presentation	Dissemination presentation	Dissemination presentation	Dissemination presentation				
What	Policy	Policy and tools	Policy and tools	Policy and tools	Policy and tools	Policy	Short policy emphasis on tools	Short policy emphasis on tools	Short policy emphasis on tools
		Accessing data from elsewhere	Accessing data from elsewhere		Accessing data from elsewhere		Accessing data from elsewhere	Accessing data from elsewhere	Accessing data from elsewhere
	Web pages and PDFs	Web pages and PDFs	Web pages and PDFs	Online tutorial, online lecture	Meetings, website, tutorials	Web pages and PDFs	On line tutorial	Online lecture	Online lecture
	FAQ	FAQ	FAQ	FAQ	FAQ	FAQ	FAQ	FAQ	FAQ
				Workshops	Workshops		Web pages and PDFs	Web pages and PDFs	Web pages and PDFs
				Web pages and PDFs					