

# JISC Project Plan Template

*The Project Management Guidelines have detailed instructions for preparing project plans.*

*Expand tables as appropriate.*

*Fill in the information for the header, e.g. project acronym, version, and date.*

*Prepare a cover sheet using the cover sheet template and attach to the project plan.*

## Overview of Project

### 1. Background

*Summarise the background to the project (and how it builds on previous work) and the need for it (and why it's important).*

The project will develop Search interfaces that insulate the user from the complexities of querying digital repositories using interoperable standards. The open source JAFER software will be developed to provide a simple mechanism of integrating Search and Discover functionality into applications residing in the JISC e-learning framework User Agent layer, namely Learning Design, VLEs, Portals and Resource List Management software.

### 2. Aims and Objectives

*List the broad aim or purpose of the project, and the specific objectives you intend to achieve.*

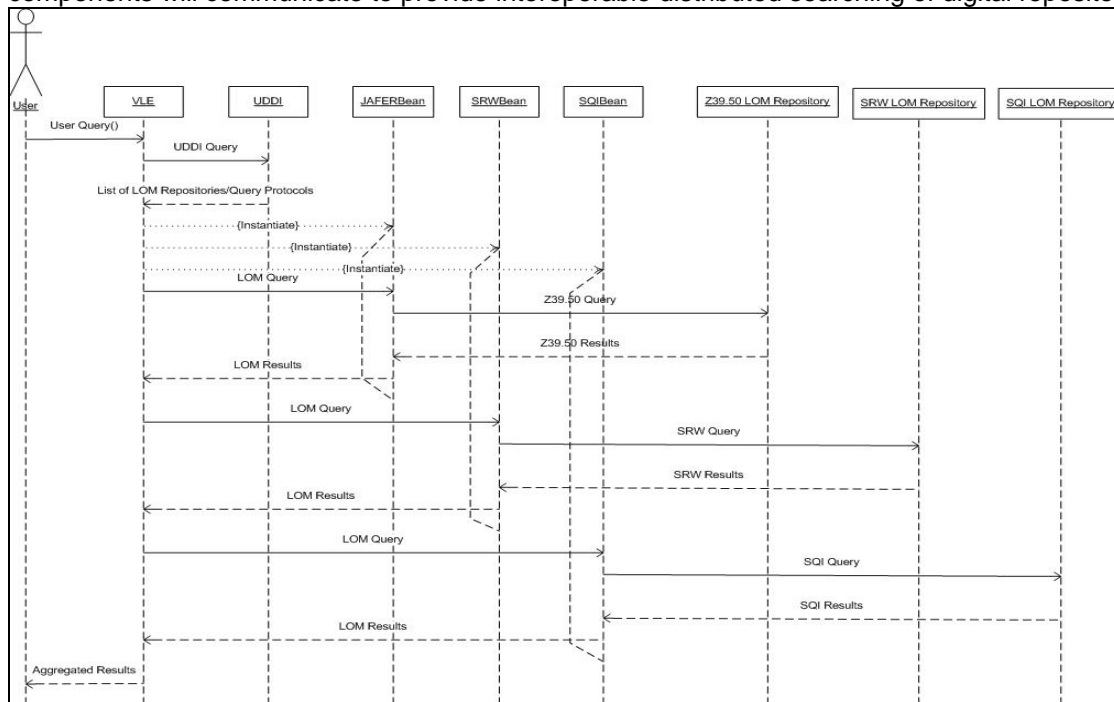
This project will build on the open source JAFER<sup>1</sup> software developed under the JISC DNER programme. We will build Graphical User Interfaces (GUIs) to provide functionality in three key areas:

1. Interoperable distributed Searching
2. Aggregation of result metadata and
3. Creation of Resource Lists.

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<sup>1</sup> JAFER website: <http://www.jafer.org>

The sequence UML diagram (Figure 1) illustrates how existing and proposed JAFER JavaBean components will communicate to provide interoperable distributed searching of digital repositories.



**Figure 1 UML Sequence diagram showing how the proposed JAFER objects would communicate for a user query**

A user query will be sent to a JAFER installation where a UDDI registry of target repositories will be used to work out which databases the query should be sent to. The appropriate JavaBeans would then be instantiated to generate queries based on interoperable standards (e.g. Z39.50, SRW, SQI). The query may then need to be translated for the Target repository (e.g. Z39.50 to SQL) by JAFER Server JavaBeans. The result metadata would then be returned to the JAFER client where XSLT transforms would render the metadata for aggregation into a list.

We will use Interaction Design methodologies<sup>2</sup> to work with subject matter experts (SMEs) from a variety of academic disciplines (English, medicine, music and anthropology) to design a set of GUIs that are customised to their search needs.

In parallel with this GUI development we will further enhance the JavaBean components of the JAFER middleware to provide:

1. Searching according to the SRW specification<sup>3</sup>
2. A prototype UDDI directory pertaining to target repositories for academic resource discovery

The overall goal of the project is to provide robust open source software that insulates developers of academic user agents from the complexities of distributed searching, resource metadata aggregation and reading list creation. We aim to make it as easy as possible to integrate fully functional and interoperable Search and Discover services into Learning Design, VLE and Portal systems.

### 3. Overall Approach

Describe the overall approach you will take to achieve the objectives outlined above, including:

- Strategy and/or methodology and how the work will be structured
- Important issues to be addressed, e.g. interoperability
- Scope and boundaries of the work, including any issues that will not be covered.
- Critical success factors.

<sup>2</sup> Book title: Preece, J et al (2002) *Interaction Design*. ISBN 0471492787

<sup>3</sup> SRW - <http://www.loc.gov/z3950/agency/zing/srw>

## 4. Project Outputs

List the tangible deliverables (including reports) your project will create, and the less tangible knowledge and experience you hope to build and share.

- A set of fully functional JSP GUIs that enable interoperable distributed searching using Z39.50 and SRW. These GUIs will be customised to the search requirements of the English, music, anthropology and medicine academic disciplines
- Documentation that describes how developers in other FE and HE institutions can integrate the GUIs produced during this project into their User Agent applications. This will include machine-readable documentation such as WSDL descriptions of appropriate web services and WSDO deployment descriptions for enabling installation of the toolkit web service components. It will also include Ant scripts for building and deploying the software.
- Documentation that describes how developers in other FE and HE institutions can develop their own customised Search, Aggregate and Resource List GUIs. The documentation will include: (a) technical guidelines on creating GUIs in a Service Oriented Architecture; (b) usability design heuristics for creating search, aggregate and reading list GUIs.
- Prototype and documentation of a UDDI registry that allows repository owners to enter the details of their database in an interoperable manner.
- JavaBean that implements the SRW specification.
- Prototype JavaBean/ documentation looking at the implementation of the SQI specification<sup>4</sup>.
- JSP GUI that aggregates the metadata returned from the target repositories. This aggregator will allow the user to search through the returned records and select items to feature in the reading list GUI. We will investigate free-text searching and sorting to allow the user to find the required metadata items.
- JSP GUI that stores the selected metadata items as a resource list. The user will be able to populate the reading list with annotations and add metadata that describes the list for sharing. The list will be compliant with the IMS RLI specification.
- Functionality that allows the compiled resource list to be downloaded in a number of formats (including one compliant with the IMS RLI specification).
- Class, User and Sequence UML documentation of all aspects of the project
- Update version of the existing JAFER JavaDoc documentation.
- Web site for dissemination of documentation: source code and fully functional search, aggregator and reading list GUIs.

## 5. Project Outcomes

List the outcomes you envisage, including their impact on the teaching, learning, or research communities, and what change they will stimulate or enable.

Here we briefly outline how the deliverables will benefit future demonstrator projects in the search and discover context.

- Partnering with FE, HE and commercial organisations to grow a library of customised search GUIs pertaining to the full range of academic disciplines.
- Partner with developers of User Agent applications to integrate the GUIs developed during this project: (a) VLEs e.g. COSE, Blackboard and WebCT; (b) Portals e.g. uPortal; (c) Reading List Management software e.g. Sentient's Discover product; (d) Learning Design Systems e.g. CopperCore and LAMS; (e) other low-tech integrations such as web sites and office applications like word processing software.
- Working to implement interoperable standards with target repositories such as OCLC, MERLOT, Fedora, DSpace, HLSI, and OAI repositories along with traditional publishers and aggregators.
- Work with SRW and SQI communities to enable peer-to-peer search capabilities
- Integrate the JAFER software to enable OpenURL Resolvers to perform two-way messaging between the Resolver and Target repositories.

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<sup>4</sup> SQI: <http://nm.wu-wien.ac.at/e-learning/interoperability/query.pdf>

Integrate JAFER messaging with Authentication (e.g. Kerberos) and Authorisation (e.g. Athens and Shibboleth) specifications.

## 6. Stakeholder Analysis

List key stakeholder groups and individuals that will be interested in your project outcomes, will be affected by them, or whose support/approval is essential, both within your institution and in the community, and assess their importance (low/medium/high).

Stakeholder	Interest / stake	Importance
Stafford University	Integration	
University of Wales College Newport	Integration	
University of Oxford	Integration	

## 7. Risk Analysis

List factors that could pose a risk to the project's success, assess their likelihood and severity, and how you will prevent them from happening (or manage them if they if they occur). Cover the types of risks listed and any others that apply.

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing	3	3	9	Backup programmer
Organisational	1	1	1	
Technical	3	3	9	Iterative development and recruit required skills internally
External suppliers	1	1	1	
Legal	1	1	1	

## 8. Standards

List any specific standards you will adopt and why they are important.

The project will work with the following standards:

- WS-I<sup>5</sup>; in particular UDDI<sup>6 7 8</sup>, WSDL, SOAP,
- SRW, Z39.50, SQI
- IMS RLI, IMS DRI
- XML, XSLT

The software will be developed using the J2EE platform. We will use the open source Eclipse IDE<sup>9</sup> with Omondo plug-in<sup>10</sup> or Poseidon<sup>11</sup> to generate UML. We will also use Axis<sup>12</sup> and WS-I profile testing tools<sup>13</sup>, develop JUnit tests, and use the test UDDI registry service<sup>14</sup>

The software will continue to be available under an Open Source license and distributed freely from the JAFER web site and Sourceforge.

<sup>5</sup> WS-I - <http://www.ws-i.org>

<sup>6</sup> UDDI and GRID - <http://esc.dl.ac.uk/Papers/UDDI/uddi/>

<sup>7</sup> UDDI JISC Tech. Watch (this covers an older version of UDDI) - [http://www.jisc.ac.uk/index.cfm?name=techwatch\\_report\\_0101](http://www.jisc.ac.uk/index.cfm?name=techwatch_report_0101)

<sup>8</sup> JISC IE Service Registry Scoping Study - <http://www.ukoln.ac.uk/distributed-systems/jisc-ie/arch/service-descript>

<sup>9</sup> Eclipse IDE: <http://www.eclipse.org/>

<sup>10</sup> Omondo: <http://www.omondo.com/>

<sup>11</sup> Poseidon: <http://www.gentleware.com/>

<sup>12</sup> Axis: <http://ws.apache.org/axis/>

<sup>13</sup> WS-I toolkit: <http://www.ws-i.org/implementation.aspx>

<sup>14</sup> Microsoft UDDI test registry: <http://test.uddi.microsoft.com/>

## 9. Technical Development

*Indicate how the project will follow best practice for technical development, and any specific technologies or development approaches the project will adopt and why.*

- The project will develop software iteratively with usability analysis at key stages.
- We will develop UML and database designs before starting coding.
- We will develop JUnit tests in Eclipse throughout the project

## 10. Intellectual Property Rights

*List any intellectual property owned by third parties that will be incorporated into project outputs, when/how you will obtain permission to use them, and any implications for project outputs after the project ends.*

N/A

## Project Resources

### 11. Project Partners

*List all project partners (including subcontractors), their roles, and the main contact. Indicate the date a consortium agreement was signed (or will be signed), and send a copy to the programme manager.*

#### Edinburgh University

Boon Lowe - developer  
Morag Watson – manager

No consortium agreement.

### 12. Project Management

*Briefly describe the project management framework, including organisation, reporting relationships, decision process, and the role of any local management committee.*

*List all members of the project team, their roles, and contact details. Indicate the proportion of time the project manager will spend on project management.*

*Indicate if the project has training needs and how they will be met.*

Main contact:

Howard Noble – manager/ developer  
[howard.noble@computing-services.oxford.ac.uk](mailto:howard.noble@computing-services.oxford.ac.uk),  
+44 (0) 1865 273211

Colin Tatham – developer

David Gilks – developer

Matthew Dovey – technical consultant

ID	Task Name	Start	Finish	Duration	Resource Names	May 2004		Jun 2004				Jul 2004			Aug 2004				Sep 2004			
						9/5	16/5	23/5	30/5	6/6	13/6	20/6	27/6	4/7	11/7	18/7	25/7	1/8	8/8	15/8	22/8	29/8
1	Project Kick-off meeting	10/05/2004	10/05/2004	1d	ALL + SMEs	◆																
2	Design Search Interfaces and write test scripts	10/05/2004	13/05/2004	4d	Howard Noble	◆	◆															
3	Desk research of UDDI	17/05/2004	18/05/2004	2d	Howard Noble	◆	◆															
4	Build and test Java SRW Bean	10/05/2004	28/05/2004	15d	Colin Tatham, Howard Noble	◆	◆	◆	◆													
5	Build and test Search Interfaces	03/06/2004	23/06/2004	15d	Colin Tatham, Howard Noble			◆	◆	◆												
6	Management review with SMEs	28/06/2004	28/06/2004	1d	ALL + SMEs							◆										
7	Design Aggregator Interface and write test scripts	01/06/2004	04/06/2004	4d	Howard Noble			◆	◆													
8	Build and test Aggregator Interface	28/06/2004	16/07/2004	15d	Colin Tatham, Howard Noble					◆	◆											
9	Design UDDI interface and write test scripts	05/07/2004	23/07/2004	15d	Howard Noble					◆	◆											
10	Build and test prototype UDDI interface	26/07/2004	13/08/2004	15d	Colin Tatham, Howard Noble							◆	◆									
11	Management review	16/08/2004	16/08/2004	1d	ALL																◆	
12	Design Resource List Interface with Export options and write test scripts	02/08/2004	05/08/2004	4d	Howard Noble								◆	◆								
13	Build and test Resource List Interface with Export options	23/08/2004	10/09/2004	15d	Colin Tatham, Howard Noble																	◆
14	Documentation and dissemination	27/05/2004	09/11/2004	119d	Howard Noble	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆

We will seek project feedback from CETIS at intervals throughout the project.

We would benefit from UML training.

### 13. Programme Support

Indicate if there are specific areas where you would like support from the programme or programme manager.

- Project review.
- UML training.

### 14. Budget

Use the budget template and attach the project budget as Appendix A. Explain any changes from the budget in the agreed project proposal.

	Cost (10/5/2004 – 29/10/2004)
Staff – Project Manager/ developer	£10,976
Staff – Developer	£18,127
Staff – Administrator	£561
Staff – Technical consultant	£4,837
<b>Total staff</b>	<b>£34,501</b>
Hardware and software	£6,500
Travel	£1000
<b>Total</b>	<b>£42,001</b>

## Detailed Project Planning

### 15. Workpackages

Use the workpackages template to plan the detailed project work and attach as Appendix B. Clearly indicate project deliverables and reports (in **bold**), when they are due, phasing of workpackages, and

explain any dependencies. You may also attach a Gantt chart, diagram, or flowchart to illustrate phasing.

Gantt Chart ID	Work package	Effort(person days)
2	Design Search Interfaces and write test scripts	4
3	Desk research of UDDI	2
4	Build and test Java SRW Bean	15
5	Build and test Search Interfaces	30
7	Design Aggregator Interface and write test scripts	8
8	Build and test Aggregator Interface	15
9	Design UDDI interface and write test scripts	15
10	Build and test prototype UDDI interface	15
12	Design Resource List Interface with Export options and write test scripts	4
13	Build and test Resource List Interface with Export options	20
14	Documentation and dissemination	25
	<b>Total</b>	<b>153</b>

## 16. Evaluation Plan

Indicate how you will evaluate the quality of the project outputs and the success of the project. List the factors you plan to evaluate, questions the evaluation will answer, methods you will use, and how success will be measured. Expand as appropriate on how you will conduct the evaluation.

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success

## 17. Quality Assurance Plan

Explain the quality assurance procedures you will put in place to ensure that project outputs comply with JISC technical standards and best practice, and what will constitute evidence of compliance.

Timing	Compliance With	QA Method(s)	Evidence of Compliance
	Fitness for purpose		
	Best practice for processes		
	Adherence to specifications		
	Adherence to standards		
	Accessibility legislation		

## 18. Dissemination Plan

Explain how the project will share outcomes and learning with stakeholders and the community. List important dissemination activities planned throughout the project, indicating purpose, target audience, timing, and key message.

Timing	Dissemination Activity	Audience	Purpose	Key Message


## 19. Exit/Sustainability Plan

*Explain what will happen to project outputs at the end of the project (including knowledge and learning). Focus on the work needed to ensure they are taken up by the community and any work needed for project closedown, e.g. preservation, maintenance, documentation.*

Project Outputs	Action for Take-up & Embedding	Action for Exit
See deliverables	Communicate with interested parties (see above)	Released on Sourceforge

*List any project outputs that may have potential to live on after the project ends, why, how they might be taken forward, and any issues involved in making them sustainable in the long term.*

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address

## Appendixes

### Appendix A. Project Budget

### Appendix B. Workpackages

JISC Project Management Framework  
22 December 2003