



## **JISC Project Plan Template**

### ***Overview of Project***

#### **1. Background**

The development of new and effective learning experiences for lifelong and traditional learners in a distributed learning environment will require the extensive use of formative, self, and other assessment tools and objects. It should also be possible to integrate these tools and objects into intelligent sequences of content. This integration will allow direct feedback from the assessment to be incorporated into the learning process, giving learners the opportunity to test their knowledge and understanding in an appropriate space and at an appropriate time.

Assis as a consortium, builds directly on the experiences of its partners who have been involved in a number of JISC funded projects looking at providing tools and services for learners and teachers in the areas of assessment and sequencing. More specifically, Assis will build on the work of two current JISC e-Learning Framework projects, ISIS (University of Hull) and APIS (University of Strathclyde), and the work of Stanford University, one of the four core partners for the Mellon funded SAKAI project, on Samigo. In addition, the outputs of several other JISC funded projects will be integrated into Assis.

The tools and services to be developed by Assis address a number of issues found with existing solutions. Many of the current tools are not based on open standards whereas Assis will use the appropriate standards from the IMS, W3C and Java Community Process. Currently it is difficult to find tools that can support innovative practices for teachers due to a lack of standards conformance or the proprietary and often expensive nature of more sophisticated tools.

#### **2. Aims and Objectives**

Assis aims to give teachers the opportunity to design innovative learning activities and sequences of activities incorporating formative assessment and for learners to access these materials in the way that suits them best. The suite of open source services and tools that enable these activities will be standards and specifications conformant. The project aims to provide discrete tools and services that need not be used exclusively by the outcomes of Assis.

Assis will provide tools for a teacher to browse, search, preview and select assessment objects from question banks which can then be incorporated into sequences of content using the RELOAD editor. The assessment objects in the content package will contain pointers to an external rendering service, to be developed by Assis, removing the requirement for teachers to have any knowledge of the technical details of how the object is presented to the learner or how the learner's responses are captured. For learners, a player will be produced that will present material from content packages and integrate with the Assis external services for presenting assessment objects and the processing of sequencing rules.

#### **3. Overall Approach**

The work for Assis will be divided between the six partners drawing on their strengths and building on their previous experiences. Where possible dependencies between workpackages are limited, not only by sharing the work but also by the nature of the deliverables, discrete solutions that can be used individually. The project will address issues of interoperability by working to international standards and specifications described in this document. Working to standards will also contribute to the potentially wide uptake of the tools and services and their sustainability beyond the lifespan of this project.

The main focus of Assis is on the production of tools and services for teachers and learners detailed in the Project Outputs section. The scope of the project is broader and will include the documentation

of issues around the integration of Simple Sequencing with QTIv2 and the creation of learning templates to allow teachers to quickly and easily develop their own learning sequences. As detailed above, one critical success factor will be the effective integration of the assessment standard (QTI) and Simple Sequencing. Widening the availability of assessment objects is another factor, not only through the browsing and searching of question banks, but also with the development of a player to render the objects. The player itself is critical to the project to provide the learner with a well designed, accessible interface to the materials.

#### 4. Project Outputs

The tangible deliverables listed below are the discrete components that are the services and tools to be produced by Assis.

- QTIv2 Simple Sequencing Integration document
- QTISearch service
- QTIRun service
- Select QTI portlet
- Select QTI web app
- Sequence authoring interface demonstrator
- AssisPlayer service
- AssisPlayer portlet
- AssisPlayer web app
- Innovative learning templates

The experience gained by the project group through the practical implementation of assessment and sequencing standards will, where possible be fed back to the appropriate standard body via formal and informal routes. The wider experience of working with Web Services standards will be of use to each member institution and the community allowing the further exploration of Service Oriented Architectures.

#### 5. Project Outcomes

The tools and services provided will enable teachers to more easily and efficiently generate innovative learning materials incorporating sequences, enhancing their current teaching methodologies and also providing access to a potentially wider audience. Learners accessing these materials have the freedom to choose when and where they can study. Due to the expected ease of use of the tools it is also hoped that a range of QTI conformant question banks locally, nationally and internationally can be exploited by teachers as part of their creation of learning content.

#### 6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
Teachers	Tools and services to incorporate assessment objects and sequencing into their learning practices	High
Learners	Player to access innovative learning materials	Medium
Learning technologists/eLearning advisors	Understanding of the potential of the teachers and learners tools and services to promote innovation	Medium
Standards organisations	Practical implementation of QTIv2 and Simple Sequencing	Low

#### 7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
------	-------------------	----------------	---------------	-------------------------------

Staffing	1	1	1	All staff involved are on existing, continuing contracts
Legal	1	1	1	Include IPR Statement in consortium agreement at project outset.
JSR168 is a new specification with few documented exemplars and immature implementation.	2	2	4	An expected issue in ground breaking projects of this kind. A large community including JA-SIG and SAKAI are committed to solving this.
IMS Simple Sequencing and IMS Learning Design may have implicit memory intensive session state objects that may affect performance.	3	1	3	We plan to use several independent techniques in parallel to ensure optimal performance of the libraries.
IMS Simple Sequencing describes both state and behaviour and may be difficult to adapt implementations to specification changes in the behaviour model.	3	1	3	We plan to use high level API descriptions of behaviour so that version changes in implementation detail will be hidden from the users of libraries.
QTIv2 does not fully support the required functionality.	3	5	15	Close involvement of partners in the QTI specifications development process will ensure that the lessons of Assis are incorporated into revisions of the specification.
Difficulties coordinating the activities of a wide spread group of partners	1	2	2	Partners share strong common interests in this area and are experienced in working in distributed projects

## 8. Standards

### IMS

Question and Test Interoperabilityv2, Content Packaging v 1.3.1, IMS Simple Sequencing v1.0 with bug fixes and implementation fixes to Sequencing behaviour based on SCORM 2004 1.3.1

### W3C

WSDL, SOAP

### Oasis

WSRP

### Java Community Process

JSR168

## 9. Technical Development

Assis will use the existing development skills of the project partners to build the tools and services coupled with Web Services technology to enable communication between the components. Standard object oriented design and programming techniques will be used including UML where appropriate. Systematic programming and testing methods will be employed

QTIQuery	Java, WSDL, SOAP
QTIrun	Java, WSDL, SOAP
Select QTI portlet and web app	Java, Servlets, Portlets (JSR 168)
AssisPlayer service	Java, WSDL, SOAP

AssisPlayer portlet & web app

Java, Servlets, Portlets (JSR 168)

## 10. Intellectual Property Rights

All services and tools developed for Assis will be open-source using the GPL licence and available free of charge. Icodeon Ltd. retain the IPR for the Sequencing Engine APIs as agreed for the eLearning Framework project ISIS. These Sequencing Engine APIs remain the IP of Icodeon Ltd, but are available under an appropriate Open Source licence. They are freely available in source code form with a public API. The Sequencing Engine API Implementation Classes these remain the IP of Icodeon Ltd, but are available free of charge as a compiled library under separate, free, commercial licence to UK HE and FE.

## Project Resources

### 11. Project Partners

University of Hull (Robert Sherratt [r.sherratt@hull.ac.uk](mailto:r.sherratt@hull.ac.uk)) Overall project management, contribution to QTI/SS integration document, development of Select QTI service and assistance with Assis player tools.

University of Strathclyde (Niall Sclater [niall.sclater@strath.ac.uk](mailto:niall.sclater@strath.ac.uk)) – Development of QTI conformant software, contribution to QTI/SS integration document and liaison with QTI community. Will coordinate work with Excelsoft.

Icodeon Ltd. (Warwick Bailey [warwick@icodeon.com](mailto:warwick@icodeon.com)) - Development of Assis player tools and services and ,contribution to QTI/SS integration document.

Stanford University (Rachel Gollub [rgollub@stanford.edu](mailto:rgollub@stanford.edu)) - Development of integration with QTI question banks

Reload (Phil Beauvoir [p.beauvoir@bolton.ac.uk](mailto:p.beauvoir@bolton.ac.uk)) - Support for sequence authoring interface demonstrator

Loughborough University (Myles Danson [m.danson@lboro.ac.uk](mailto:m.danson@lboro.ac.uk)) Integration with HELM question bank

Newark & Sherwood College (Steve Jeyes [jeyesint@ntlworld.com](mailto:jeyesint@ntlworld.com)) - Project consultancy to be subcontracted by the University of Hull.

### 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.*

The University of Hull will coordinate the project centrally with individuals at each partner site liaising with as required. The project will use online communications to ensure clarity of requirements and purpose and the effective sharing of experiences and work.

#### University of Hull

Robert Sherratt – Project Manager 0.4 FTE (duration of project)

Steve Jeyes – Project consultant 0.2 FTE (duration of project)

Gary Thompson ([g.d.thompson@hull.ac.uk](mailto:g.d.thompson@hull.ac.uk)) – Developer 1.0 FTE (November – March)

Carl Barrow ([c.p.barrow@hull.ac.uk](mailto:c.p.barrow@hull.ac.uk)) - Developer 0.3 FTE (November – March)

#### University of Strathclyde

Niall Sclater – Project coordination 0.1 FTE (duration of project)

Niall Barr – Developer 1.0 FTE (duration of project)

**Icodeon Ltd.**

Warwick Bailey – Project coordination and development 0.2 FTE (September – October) 0.9 FTE (November – March)

**Stanford University**

Rachel Gollub - Project coordination 0.1 FTE (duration of project) and development 0.8 FTE (November – January)

**Reload**

Philip Beauvoir – Fixed budget – see plan

**Loughborough University**

Myles Danson – Fixed budget – see plan

### **13. Programme Support**

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

### **14. Budget**

The budget has been cut to reflect the reduced travel budget required for all the partners and the removal of the requested money for consumables. Some travel budget is still required to enable the major partners, with the exception of Stanford, to meet. These cuts will not affect the core staffing and will enable all the workpackages to be completed as intended.