



**Project Document Cover Sheet**

Project Information			
<b>Project Acronym</b>	CRAMPON		
<b>Project Title</b>	Curriculum mapping Knowledgebase		
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<b>Lead Institution</b>	University of Manchester		
<b>Project Director</b>	Dr Ioan Davies		
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<b>Partner Institutions</b>	N/A		
<b>Project Web URL</b>			
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<b>Programme Manager</b>	David Kernohan		

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0.1	14 <sup>th</sup> June 2008	First Draft
0.2	20 <sup>th</sup> June 2008	Amended draft
1.0	20 <sup>th</sup> June 2008	Finalised version



# JISC Project Plan

CRAMPON: A curriculum mapping knowledgebase

## Overview of Project

### 1. Background

This project sets out to create a knowledgebase application (software) to manage and maintain the complex interrelationships between curriculum content, cases for enquiry based learning and their intended learning outcomes (ILOs), and assessment blueprinting based on the ILOs.

The application will be generic for any structured curriculum but will be tested on the Manchester MBChB curriculum, using Indexed Clinical Situations, module intended learning outcomes, Formative and Summative Assessment and PBL cases.

The principal users of the system will be academic curriculum development teams, students who will use appropriate search facilities to plan their learning and administrators who will use the tool to assist in resource planning and change management.

This project addresses the complexity of the interrelationships between the component parts of undergraduate enquiry based learning in medicine and other structured curricula such as Dentistry and Engineering. There are known difficulties in the transition from traditional instruction to a PBL approach<sup>12</sup> and curriculum design must address issues of preparing a syllabus, finding appropriate problems/ cases to address content, introducing students to group process and learning skills, etc. In addition, the curricula of degrees related to professional qualifications like Medicine have to undergo a continual process of review; either for purposes of development, modernization or review by a professional body, e.g. by the General Medical Council (GMC)<sup>3</sup>. Reviews are complex and have to be completed in relatively short time-frames. There are currently no tools available that support the design, development and maintenance of such curricula in a coherent manner, nor in any kind of teamwork environment.

The development for this project will comprise an underpinning formal model, an operational knowledgebase for all the necessary elements and their connections to each other and an intuitive interface suited to the patterns of use of both academics and students. The user interface will be embedded in a social software framework allowing teams of academics to work together on curriculum design. It is envisaged that the user interface will also enable students, either as individuals or groups to plan their learning. If the self-directed learning is supported by an e-portfolio, the students will be able to link between the curriculum knowledgebase and their own portfolios.

The project test case is the curriculum for undergraduate medical students at the Manchester Medical School (MMS) which is centred on a Problem Based Learning (PBL) approach to learning (PBL being a special case of enquiry based learning). The curriculum consists of a number of themed modules each having its own Intended Learning Outcomes and set of clinical skills. The students gain their required knowledge and skills through study and analysis of a set of themed cases derived from a core curriculum of Indexed Clinical Situations (ICS). Student learning is augmented by lectures, seminars and clinical placements and skills training. Each student is assessed throughout the five year programme, using a range of assessment techniques, to ensure they have acquired the relevant skills and knowledge and have achieved the standard required by the GMC to be fit to practice.

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<sup>1</sup> White III, HB, *Getting started in problem-based learning*, in *The power of problem-based learning: A practical "How to" for teaching undergraduate course in any discipline*, Duch, BJ, Groh, SE, and Allen, DE, Editors. 2001, Stylus Publishing, LLC: Sterling

<sup>2</sup> Sefton, A, *Overcoming obstacles*, in *Problem-Based Learning: Case studies, Experience and Practice*, Schwartz, PL, Mennin, S, and Webb, G, Editors. 2001, Kogan Page Ltd.: London. p. 52-59,

<sup>3</sup> (GMC: [http://www.gmc-uk.org/education/undergraduate/undergraduate\\_qa.asp](http://www.gmc-uk.org/education/undergraduate/undergraduate_qa.asp)).

The curriculum based on the ICSs, themed modules and ILOs, assessments and standards form a complex, multi-dimensional matrix of information elements which are linked through many-to-many relationships at multiple levels of granularity. This complexity presents problems on two fronts: for academics in preparation for quality reviews, and planning and executing changes to the curriculum; and for students making appropriate aspects of the curriculum intuitively visible to facilitate self-direction of his/her own learning. For example, updating any aspect of the curriculum in line with new guidelines from the QAA<sup>4</sup> or GMC involves identifying and tracking the related parts on which that aspect may impinge and agreeing the changes within the curriculum development team. The medical curriculum must remain dynamic and respond to changes in medical practice and legislation but its maintenance is becoming increasingly difficult and expensive.

In setting out to provide some solutions to the above issues, the project builds on previous work in modelling and specifying services for medical education at Manchester (Horus and HeLM), on designing a knowledgebase to support good practice (Pathfinder), on domain modelling and knowledge engineering in HE (HILDA and InnovationBase(IB)) and on embedding tools within social networking software (HeLMET).

## 2. Aims and Objectives

**Aim:** To create tool support for systematic design, review and maintenance of curricula. The tool is to facilitate maintenance of curriculum quality and currency and is to be designed for usability, extension and generalisability.

**Objectives:**

- A knowledgebase for curriculum content with its relationships to assessment and enquiry based learning;
- Lifecycle maintenance of curriculum content;
- Manipulation of knowledge elements to assess impact of change;
- Facilitation of consultation with all stakeholders;
- Facilitation of reporting and demonstration of quality and compliance to QA and standards bodies;
- A tool to plan training requirements for staff development.

## 3. Overall Approach

The Project will use the UIDM approach to achieve its objectives, using the tools and methods advocated in the UIDM templates and guidelines.

During Stages 1 & 2 of the UIDM, Interviews and workshops will be carried out with the three main domain experts representing Curriculum Development and Assessment. From this, an initial set of user requirements and user cases will be constructed together with an initial Domain Model on which to base the construction of the Crampon knowledgebase. This initial model will be tested and refined through additional workshops with wider domain experts such as learners and tutors together with validation by external partners Keele University and Peninsula Medical School (PMS). From this a more complete Curriculum Domain Model will emerge.

The project will then move on to UIDM Stages 3 & 4, through the development and evaluation of successive iterations of the knowledgebase. The initial knowledgebase will be constructed using the applications outlined in section 9, concentrating initially on the back-end repository, followed by an intuitive, browser based front-end. The initial repository will be tested with Domain experts in the University of Manchester, followed by necessary refinement and development and testing of the front-end. Once a relatively stable version of the knowledgebase is constructed and populated using

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<sup>4</sup> Quality Assurance Agency for Higher Education <http://www.qaa.ac.uk/aboutus/default.asp>

current curriculum elements the tool will be evaluated using three test cases within the University. These will represent three examples of realistic tool use across different groups of potential users:

1. The introduction of a new Indexed Clinical Situation (ICS). The tool will be used by the curriculum development team to introduce a new ICS, for example on AIDS, to assess how well the tool identifies impact on and duplication of existing curriculum elements.
2. The introduction of a new learner topic. An existing student group, HOMED, will use the tool to introduce the topic of homelessness into the curriculum using the tool. They will assess the success of the knowledgebase in identifying where the topic can be introduced into the curriculum, which ICS's it impinges on and which Intending Learning Outcomes it supports.
3. The resource implications of change. Any external changes or changes to the curriculum impacts on how and where the programme is delivered. The tool will therefore be tested by administrators to calculate resources and management issues around a given change e.g. the concentration of specialism within NHS Trusts may restrict the throughput of students within a given module and the tool should be able to help plan learning delivery to resolve such issues.

Following the successful testing of the initial software releases, the tool will be then be validated and evaluated for its generalisability through a series of planned workshops in Keele and PMS. The two external institutions will be consulted on the design of test cases which would be representative of their own institutional requirements in order to bring a genuine outside perspective to the tool, this would enable them to judge its usefulness and application. This will allow the project to devise a set of rules for generalisation of the knowledgebase and make any necessary refinements to the tool.

#### Critical Success Factors

- Accurate capture of the complex curriculum domain which can be represented by knowledgebase modelling.
- Integration and interoperability of the two major components of the proposed application: knowledgebase and social networking
- Scalability and usability of the completed application
- Accuracy and relevance of the knowledgebase in completing given test cases

## 4. Project Outputs

Month	WP1 Project Management	WP2 Systems Analysis	WP3 Knowledgebase Development	WP4 Implementation & User Evaluations	WP5 Project Evaluation & Dissemination
1. (July 2008)	<a href="#">Project web page</a>	Initial Interviews with major Stakeholders			
2. (August 2008)		Initial Domain Model for Curriculum			
3. (Sept 2008)	Project website  <a href="#">Progress Report - Brief</a>	Stakeholder workshops  Contact Sessions with Peninsula Medical School and Keele University			
4. (Oct. 2008)		Domain Model For Curriculum  Use Cases for			

Month	WP1 Project Management	WP2 Systems Analysis	WP3 Knowledgebase Development	WP4 Implementation & User Evaluations	WP5 Project Evaluation & Dissemination
		Curriculum Management			
5. (Nov. 2008)		Domain aligned with Innovation Base, P-SPEX and HILDA  Service Usage Models for Curriculum Management	Knowledgebase Application (Backend repository) v0.1	User Evaluation Report v0.1	
6. (Dec. 2008)	<a href="#">Progress Report - Full Budget report</a>				
7. (Jan. 2009)			Knowledgebase Application v0.2	User Evaluation Report v0.2	
9. (March 2009)	<a href="#">Progress Report - Brief</a>		Knowledgebase Application v0.3	User Test Cases – University of Manchester	
10. (April 2009)				Application Validation and evaluation at Peninsula Medical School and Keele University	
11. (May 2009)	<a href="#">Final report (draft)</a>		Knowledgebase Application – Final Release	User Documentation	Evaluation Report from Validation Trials
12. (Jun. 2009)	<a href="#">Final report (Final) Completion report</a>			Generalisation Specification	Project Effectiveness Report  Recommendation report/ Lessons Learnt  National Workshop “Curriculum Design and Maintenance with a Curriculum Knowledgebase”

In addition, knowledge and experience from the project on such topics as using the UIDM approach to constructing complex knowledgebases, will be shared through JISC events and Conferences.

## 5. Project Outcomes

The curriculum knowledgebase will be able to:

1. Support definition of a core curriculum that may be used to separate foundation material from later, more complex concepts;
2. Support mapping of external criteria onto the curriculum to ensure the programme is meeting performance quality criteria;
3. Link assessments to the curriculum as a form of blueprinting to ensure that the curriculum is examined appropriately and systematically;
4. Ensure that the curriculum is actually being delivered through the PBL cases in the themed semesters;
5. Allow curriculum content design and revision to be more systematic, rigorous and transparent, while simultaneously extending 'ownership' of the curriculum to a larger group of teachers who would otherwise never be consulted;
6. Manage the process of change in any of the curriculum components and its impact on the curriculum overall;
7. Allow focus on management of the curriculum in any professional qualification (for example, engineering, medicine, dentistry);
8. Allow students' planning of their learning to be better structured. For example, allowing identification of strands of activity in the programme for scaffolding learning;
9. Connection to an e-portfolio will provide learners with the ability to maintain learning logs in a far more systematic manner, enabling the construction of more focused action plans to remedy weaknesses in learning and skills;
10. Allow browsing of the curriculum according to routes tailored to a set of student, tutor and administrator required viewpoints;
11. Support research leading to greater student input into the curriculum;
12. Support research leading to improved assessment processes;
13. Allow search for particular elements of the curriculum by both students and curriculum designers. The ability to search the knowledgebase will to some extent alleviate the well known problems of uncertainty and anxiety among students in PBL programmes;
14. The embedding in social software supports widespread collaboration and consultation on curriculum expertise outside the institution.

## 6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
Project Team	Delivery of successful project/ Provide the main activities	HIGH
Users – Curriculum Development Team	Affordances from the project: The ability to ensure the curriculum is complete and holistic in providing the required skills and knowledge, maintenance of a complex electronic curriculum repository and the ability to control/regulate curriculum change	HIGH
Users - Learners	Affordances from the project: The ability to plan and manage self-directed learning in a complex environment, a scaffold for learning and inclusion in curriculum change and management	HIGH
Users – Tutors	Affordances from the project: The ability to track and manage the learning and assessment of students through a complex curriculum, the ability to focus support and content of learning in relevant areas, thereby reducing duplication and identifying deficiencies and support for a facilitation role	HIGH

University Senior Management (President/ Vice Chancellor)	Part of the e-learning strategy of the University, exploitation of the tool by other professional schools using PBL approach – e.g. engineering	HIGH
Manchester Medical School	Investment of resource/ Improvement of their teaching provision	HIGH
Funding body – JISC	Grant Investment/ Success of the Project, dissemination of outputs, use of UIDM model, integration of curriculum domain model into the e-framework	HIGH
Hospitals/ NHS Trusts	Realisation of affordances, sustainability of results in supporting tutors and future doctors	HIGH
Keele University and Peninsula Medical School	Interest in ensuring the scalability and sustainability of the tool in order to use for their own curriculum development and research	HIGH
HE/ FE Community	Transferability and sustainability of results, use of UIDM approach, a curriculum domain model	MEDIUM
Research Community	Analysis and interpretation of results	MEDIUM

## 7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Long term absence or departure of the project team members	2	4	8	<ul style="list-style-type: none"> <li>Tasks re-allocated within the unit, drawing on the wide skill base within the unit</li> <li>Employment of casual staff as temporary measure</li> </ul>
Unavailability of Domain Experts due to workload	3	3	9	<ul style="list-style-type: none"> <li>Identify substitute expert for each of the domains who can be used to clarify and advise in the absence of the primary domain expert</li> </ul>
Delay in recruiting developer	2	5	10	<ul style="list-style-type: none"> <li>Temporary redeployment of developer from an existing project</li> <li>Employment of casual staff as temporary measure</li> </ul>
Existing technologies are not flexible enough to deal with the complexity of the domain	2	4	8	<ul style="list-style-type: none"> <li>Use stable and tested applications to construct the knowledgebase</li> <li>Re-map the domain to simpler relationships that can be replicated using existing technologies</li> </ul>
Scalability and load issues	2	5	10	<ul style="list-style-type: none"> <li>Early negotiation with IT Services to prepare for migration of tool to the faculty server. University service level agreements then apply.</li> </ul>
Achieving adequate usability of the tool in the limited time of the project	3	4	12	<ul style="list-style-type: none"> <li>The project aims to deliver a prototype tool which can be enhanced and refined following successful proof of concept.</li> <li>Ensure the domain model and</li> </ul>

				data repository are correct in order to establish a sound base for future development beyond the project
Accessibility of complex application through existing user hardware	2	5	10	<ul style="list-style-type: none"><li>Development of browser based thin client system</li></ul>
N.B. Other risks were considered but only those scoring 8 or above were included				

## 8. Standards

Name of standard or specification	Version	Notes
XHTML	1.0	
CSS	2.1	
OWL	1.1	

## 9. Technical Development

The technical development of the CRAMPON Tool will follow the UIDM approach as advocated by JISC. The intention is therefore to develop the tool by involving the domain experts in its design and, allowing users to test and evaluate each iteration of the tool, whilst carefully controlling and monitoring changes to the tool using a defined Change Control Procedure. This will provide the project with a tool that can be ready quickly for release, whilst adding suitable cases to JISC's UIDM environment. The flow diagram below (Fig. 1) demonstrates the overall approach to be taken and how this relates to the relevant stages of the UIDM.

The technologies likely to be used in developing the knowledgebase are:

Ontology: OWL language, Protégé to create the schema  
Data entry and querying, browsing and visualisation: HP Labs API for OWL  
Interface: Flex and Google Web Toolkit  
Persistence: MySQL  
Development environment: Eclipse

The developed tool will be application server agnostic and all built to open standards to ensure generalisability and sustainability.

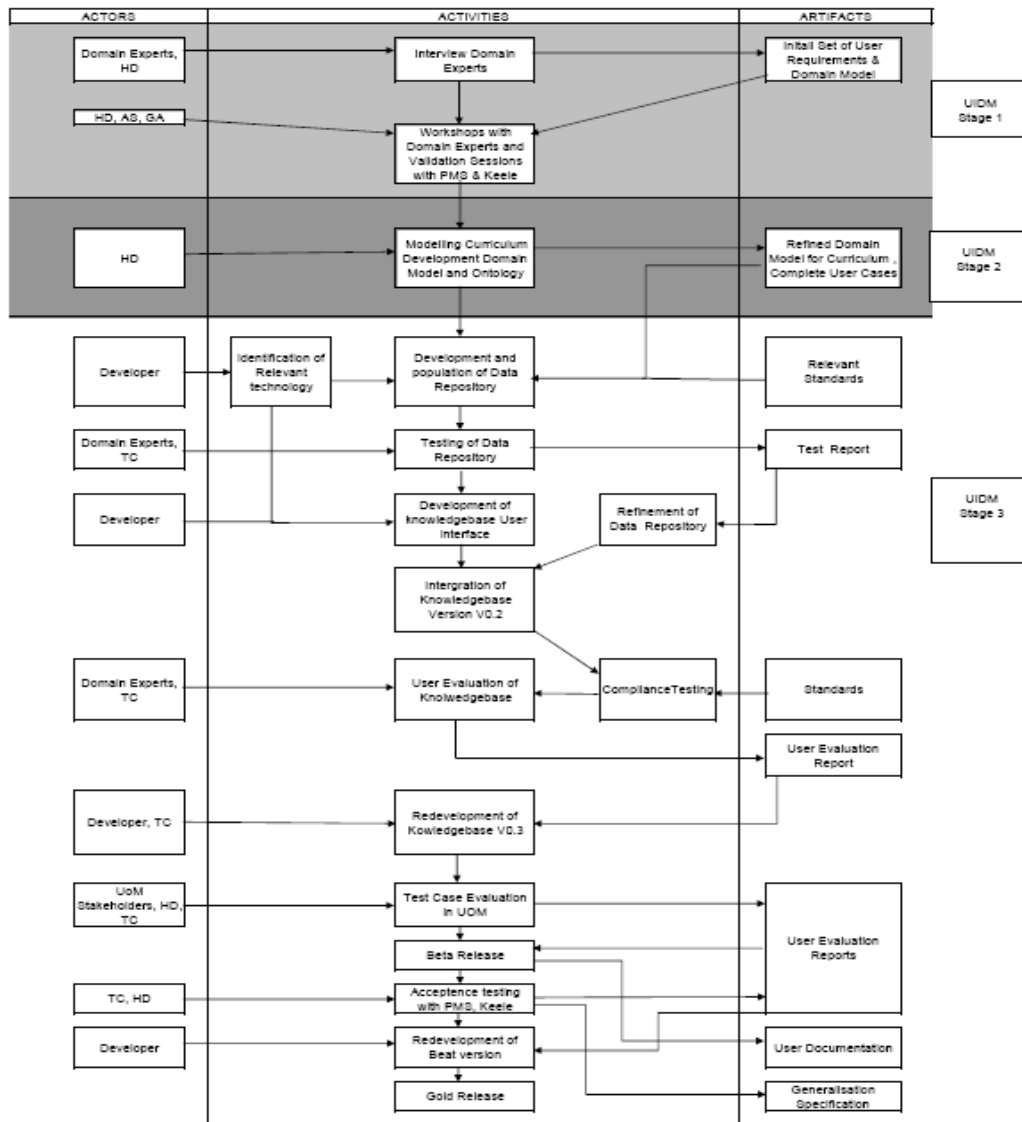


Figure 1 UIDM approach to Crampon

The approach will remain flexible enough to accommodate changes in development as required by user requirements or changes in project deadlines, etc.

## 10. Intellectual Property Rights

Any coding will be performed by the project's developers and The University of Manchester will own the intellectual property rights for the bespoke software, but will deem the software 'open source' which will be available for download both at the end of the project. Other software used will be open source.

## ***Project Resources***

### **11. Project Partners**

There will be no formal project partners on this project, but the University of Manchester will work with Peninsula Medical School and Keele University who will provide external advice and consultancy on the development of the tool and in so doing ensure the tool meets their own requirements and contribute to its usefulness to the sector as a whole.

### **12. Project Management**

The JISC Project Management Guidelines will be adhered to and the project management framework will be based on the PRINCE2 Office of Government standard project management framework.

There will be a Management Committee, which acts as a Project Advisory Board. The Management Committee is composed of the Workpackage Leads, including the Project Director, Project Manager and Domain Experts. The Management Committee will oversee operational aspects of the project, review project progress and provide advice. This Committee will meet every three months and be chaired by the Project Director, who will have the casting vote.

Day-to-day operational issues of the project will be dealt with informally by the project manager and through regular team meetings. There will be additional online meetings scheduled between the Project Team and the consulting universities (PMS and Keele).

Project Team

<b>Team Member</b>	<b>Role</b>	<b>Contact</b>
Dr Ioan Davies	Project Director/Senior User/Domain Expert	Tel: +44 (0)161 275 5252 Email: <a href="mailto:Ioan.Davies@manchester.ac.uk">Ioan.Davies@manchester.ac.uk</a>
Dr Caroline Boggis	User/ Domain Expert	Tel: +44 (0)161 275 7792 Email: <a href="mailto:caroline.boggis@manchester.ac.uk">caroline.boggis@manchester.ac.uk</a>
Dr. Chris Harrison	User/Domain Expert	Tel: +44(0)161 275 1854 Email: <a href="mailto:chris.j.harrison@manchester.ac.uk">chris.j.harrison@manchester.ac.uk</a>
Tim Cappelli	Project Manager (0.2 FTE)	Tel: +44 (0)161 275 2250 Email: <a href="mailto:Timothy.cappelli-2@manchester.ac.uk">Timothy.cappelli-2@manchester.ac.uk</a>
Dr. Hilary Dexter	Senior Systems Analyst (0.2 FTE)	Tel: +44 (0)161 275 8105 Email: <a href="mailto:hilary.dexter@manchester.ac.uk">hilary.dexter@manchester.ac.uk</a>
Developer (TBA)	Knowledge engineering, software development and testing	

### **13. Programme Support**

We may require some guidance and support on linking the project with relevant e-framework projects and, in a more general sense, in being kept informed regarding opportunities to disseminate the work of the project and to network at JISC events and other gatherings indirectly associated with the JISC community. The latter may include not only progress/dissemination events but also training opportunities offered by Netskills. In addition, guidance and direction on technical standards required or expected by JISC would be welcome.

## 14. Budget

The Project Budget remains as in the agreed Proposal. See Appendix A

## *Detailed Project Planning*

## 15. Workpackages

See Appendix B

## 16. Evaluation Plan

Timing	Factor to Evaluate	Relevant Stakeholder(s)	Questions to Address	Method(s)	Measure of Success
Staged Points	Effectiveness of the project in developing a useable knowledgebase for a range of users	Students, Curriculum Development Team, Tutors, Other HE Institutions	Can users use and navigate the application successfully?  Can users mine the relevant information using the application?  How satisfied are stakeholders with the utility of the system for resolving relevant test cases?	Communal blog  Questionnaires  Focus groups	75% of users feel the system is appropriate, useable and adds value to their task
Staged Points	Effectiveness of the project in producing a knowledgebase which has transferability to other curricula	Other HE Institutions, University of Manchester Faculties	Can the tool be easily adapted for other medical and non-medical curricula?  Does the curriculum Domain Model have resonance with other curricula?	Tool validation and authentication  Curriculum mapping and gap analysis	Other HEIs find the system largely or fully adequate in meeting their own requirements  One or more non-medical curricula can be successfully mapped to the Curriculum Domain model
Throughout	Effectiveness of the agile development processes in meeting stakeholder needs.	Students, Curriculum Development Team, Tutors, Other HE Institutions	Was the approach effective in achieving the intended outcomes?  Did stakeholders feel fully involved in the development process?	Lessons learned log  Questionnaires	75% of stakeholders felt involved in the process  75% of intended outcomes are achieved

## 17. Quality Plan

Output Timing	CRAMPON Knowledgebase				
	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Initial Release	Fitness for Purpose	Domain expert Evaluation – Acceptance Testing	User (Domain Experts) Evaluation Reports	Systems Analyst (HD)	
Each Iteration	Standards Compliance (See Section 8)	Compliance Testing of each iteration	Iteration Test Results	Developer	
Each Iteration	Interoperability with the front end	Integration Testing	Iteration Test Results	Developer	
Each Iteration	Accessibility	Compatability testing and User issue log	User Evaluation Reports	Project Manager (TC)	
Beta Release	Stability/ Performance	Load Testing	Test results	Project Manager (TC)	JMeter

Output Timing	CRAMPON user interface				
	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Each Iteration	Interoperability with the knowledgebase	Integration Testing	Iteration Test Results	Developer (RU)	
Each Iteration	Accessibility	Compatability testing and User issue log	User Evaluation Reports	Project Manager (TC)	
	Support	Feedback  OSMM Support Template  eMM	Positive feedback from users Appropriate OSMM score  Improved practices in the domain of User support.	Project Manager (TC)	eMM

Output Timing	Training and User Guide				
	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
	Fitness for purpose	User Feedback  User Issue Log	Positive Feedback and reducing issues (as training is implemented/ improved)	Project Manager (TC)	
	Sustainability	OSMM Training Template	Relevant OSMM score	Project Manager (TC)	

## 18. Dissemination Plan

<b>Timing</b>	<b>Dissemination Activity</b>	<b>Audience</b>	<b>Purpose</b>	<b>Key Message</b>
Throughout the project	Email, Skype & Telephone communications	Project Team members, Management Committee members, members of the HE Community	Dissemination of information, requests for information, organisation of project events	As required by the audience
Month 1	Publish webpage for JISC	Global	Provide overview and link to the project for the JISC community and beyond	Display basic project information on JISC website
Month 3 onwards	Publish and update project website	Global	Provide Information and updates on project activities as well as links to relevant project documents	Display project information to academic community and beyond
Months 3 & 7	University based workshops	University users	To raise awareness of the project internally and gather user requirements	This is a JISC Funded project to develop a Curriculum development tool
Months 9 & 10	External workshops	External Stakeholders	To raise awareness of the project across the stakeholders and gather user requirements	This is a JISC Funded project to develop a Curriculum development tool
Months 1 – 15 as they occur	JISC Events	JISC projects and other programmes	Share results, inform and engage with the community	Overview of the project. Project progress, demonstration of the tool
Month 5 onwards	Conference Presentations	HE Community, International community	Disseminate results, inform community, engage with community	Promotion of results/ work in progress, sustainability of the tool, building complex data tools
Month 7 onwards	Journal Articles	HE Community, International community	Disseminate results, inform community	Promotion of results/ work in progress, sustainability of the tool, building complex data tools

## 19. Exit and Sustainability Plans

Project Outputs	Action for Take-up & Embedding	Action for Exit
Domain map/model for 'curriculum'	Integrate into JISC InnovationBase (IB:Map)	Agree integration with InnovationBase support/experts team.  Resource data entry through JISC if it does not fall within funded work by IB team.
Alignment of the 'curriculum' domain map/model with the P-SPEX and HILDA domain models	Integrate into P-SPEX final report.	Agree integration and format with P-SPEX team.  The HILDA domain model is now represented by InnovationBase requiring only the above action relating to IB.
Knowledgebase application;	Submit application 'code to Sourceforge with its documentation.	Ensure documentation for users and for maintenance of the underlying ontology.  Maintain link to working example of the knowledgebase through the project website.
Curriculum ontology	Link to appropriate ontology collections.	Establish ontology maintenance policy. Identify collection sites.

Project Outputs	Why Sustainable	Scenarios for Taking Forward	Issues to Address
Crampon knowledgebase Application	Required for immediate use in Manchester Medical School (MMS)	Initial workshops in the medical school followed by use in current proposed revisions to the curriculum.  The first team to use the tool would be the domain experts involved in its development.	User support.  Resources for data entry.  Curriculum knowledgebase hosting.
Crampon as core service the medical school education management services suite	MMS is moving towards an SOA solution for management of education and this would be a core service	Architecture design for integration of service with current managed learning environment.  Initial use by administrators for planning the resource requirements for proposed curriculum changes.	Integration with the current managed learning environment.  Resources for the migration to a 'next generation' services suite.  Creating support for dispersed teams.
Crampon application to Peninsula Medical School	Requirement for curriculum maintenance	Workshop with the curriculum team followed by local effort to populate their knowledgebase.  Local independent use of Crampon for curriculum revision and maintenance.	Requirement for significant changes to the underlying ontology. This requires expert support.  Technical support must be available from PMS.

<b>Project Outputs</b>	<b>Why Sustainable</b>	<b>Scenarios for Taking Forward</b>	<b>Issues to Address</b>
Crampon application to Keele Medical School	Research tool requirement	Workshop with the research team followed by local effort to populate their knowledgebase.  Local independent use of Crampon for research.	Requirement for significant changes to the underlying ontology. This requires expert support.  Technical support must be available from Keele.
Curriculum ontology	Of interest to the knowledge engineering in medical education community	Discussion with the Manchester medical education research group and the bioinformatics research team.	Establishment of the appropriate forums and sites for publishing and revising the ontology.

## Appendixes

### Appendix A. Project Budget

Directly Incurred Staff	April 08– March 09	April 09– March 10	TOTAL £
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<b>Total Directly Incurred Staff (A)</b>	<b>£ 30,654</b>	<b>£ 10,239</b>	<b>£ 40,893</b>
Non-Staff	April 08– March 09	April 09– March 10	TOTAL £
<b>Travel and expenses:</b> - Attendance at JISC programme meetings, cluster groups, SIGs: 3 meetings @ £120 = £ 360 - Travel between project sites: 2 journeys to Exeter @ £150 per trip + accommodation @ £100/night per person = £ 900 2 journeys to Keele 100 miles @40p/mile (3 people) = £240	£ 1000	£ 500	£1,500
<b>Hardware/software:</b>	£ 0	£ 0	£ 0
<b>Dissemination:</b> - 2 x Attendance at national conferences @ £250 = £500 - 1x Attendance at an international conference = £1,000 - 4x posters @ £50 = £200	£ 1,000	£ 700	£1,700
<b>Evaluation:</b> Focus groups 5 @ £100 = £500	£ 200	£ 300	£ 500
<b>Other:</b> Consumables, etc	£ 800	£ 200	£ 1,000
<b>Total Directly Incurred Non-Staff (B)</b>	<b>£ 3,000</b>	<b>£ 1,700</b>	<b>£ 4,700</b>
<b>Directly Incurred Total (C)</b>	<b>£ 33,654</b>	<b>£11,939</b>	<b>£45,593</b>
Directly Allocated	April 08– March 09	April 09– March 10	TOTAL £
<b>Staff:</b> [REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<b>Estates</b>	£ 6,660	£ 2,220	£ 8,880
<b>Other</b>	£ 0	£ 0	£ 0
<b>Directly Allocated Total (D)</b>	<b>£ 22,445</b>	<b>£ 7,481</b>	<b>£ 29,926</b>
<b>Indirect Costs (E)</b> - directly incurred and directly allocated staff	<b>£ 37,688</b>	<b>£ 12,562</b>	<b>£ 50,250</b>
<b>Total Project Cost (C+D+E)</b>	<b>£ 93,787</b>	<b>£ 31,982</b>	<b>£ 125,769</b>
<b>Amount Requested from JISC</b>	<b>£ 55,663</b>	<b>£ 19,337</b>	<b>£ 75,000</b>
<b>% Funding</b>	<b>JISC 60%</b>	<b>University of Manchester 40%</b>	

Project Acronym: Crampon  
 Version: 1.0  
 Contact: Tim Cappelli  
 Date: 20<sup>th</sup> June 2008

## Appendix B. Workpackages



### JISC WORK PACKAGE

WORKPACKAGES	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1: Project Management		■	■	■	■	■	■	■	■	■	■	■	■												
2: Systems Analysis		■	■																						
3: Knowledgebase Development				■	■	■	■	■	■	■	■	■	■												
4: Implementation & User Evaluation						■	■	■	■	■	■	■	■												
5: Project Evaluation & Dissemination		■	■	■	■	■	■	■	■	■	■	■	■												

Project start date: 1<sup>st</sup> July 2008

Project completion date: 30<sup>th</sup> June 2009

Duration: <12> months

				Milestone	Responsibility
<b>YEAR 1</b>					
<b>WORKPACKAGE 1:</b> <b>Project Management</b> <i>Objective:</i> To ensure the successful delivery of project outputs and achievement of project outcomes through managing and monitoring project activity	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009			Tim Cappelli
1. Produce 'Core Project Documents' as specified in the JISC Project Management Guidelines	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Project Web Page Progress Reports Budgets Final Report Completion Reports	PR1 (3m) PR2 (6m) PR3 (9m) FR (12m)	TC
2. Assign and manage project tasks	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Task Lists Highlight Reports		TC
3. Monitor Project progress and compile reports	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Summary Reports		TC
4. Service Project Management Committee	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Progress Reports Management Committee minutes/actions		TC
5. Manage project risk	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Risk Analysis Issue Log		TC
6. Capture and produce project deliverables	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Agile Development Process		TC

<b>WORKPACKAGE 2: Systems Analysis</b> <u>Objective:</u> To capture and analyse user requirements in order to facilitate the development of the knowledgebase (UIDM Stage 1)	1 <sup>st</sup> July 2008	30 <sup>th</sup> November 2009			Hilary Dexter
7. Design, Plan and organise a series of events to capture user requirements	1 <sup>st</sup> July 2008	30 <sup>th</sup> November 2009	User Workshops/interviews		HD
8. Capture and analyse user requirements	1 <sup>st</sup> July 2008	30 <sup>th</sup> November 2009	User Requirements User cases		HD
9. Map and Refine Domain Model for Curriculum	1 <sup>st</sup> July 2008	30 <sup>th</sup> November 2009	Curriculum Domain Model	<b>DM1 (4m)</b>	HD
10. Prepare submission for the e-Framework	1 <sup>st</sup> July 2008	30 <sup>th</sup> November 2009	Service Usage Models for Curriculum Management Inclusion in P-SPEX final report		HD
<b>WORKPACKAGE 3: Software Development</b> <u>Objective:</u> To design, develop and refine the HeLMET Tool based on the User requirements from WP2 and User Evaluations from WP4 in line with UIDM Stage 3 guidelines (UIDM Stages 2 & 3)	1 <sup>st</sup> September 2008	30 <sup>th</sup> June 2009			Tim Cappelli
11. Creation of data repository solution	1 <sup>st</sup> September 2008	30 <sup>th</sup> November 2008	Repository architecture Data repository Domain Expert Testing	<b>KB1 (5m)</b>	TC
12. Creation and integration of intuitive user interface	1 <sup>st</sup> September 2008	1 <sup>st</sup> February 2009	Software Release 2	<b>KB2 (7m)</b>	TC
13. Develop further release(s) to reflect revised user requirements following evaluation of initial release	1 <sup>st</sup> February 2009	31 <sup>st</sup> May 2009	Software Releases 3 onwards Change Control reports Compliance Tests	<b>KB3 (9m)</b>	RU

			User reports	BetaR (11m) GoldR (12m)	
<b>WORKPACKAGE 4:</b> User Evaluation, Roll Out and Change Management <b>Objective:</b> To schedule, implement and capture user evaluations of the developing Tool (UIDM Stages 3 & 4)	1 <sup>st</sup> November 2008	30 <sup>th</sup> June 2009			Hilary Dexter
14. Plan and coordinate Domain Expert user testing, user evaluations - all releases	1 <sup>st</sup> November 2008	31 <sup>st</sup> June 2009	User Group Focus groups/Workshops User Evaluation Reports		HD
15. Prepare and implement Test Cases	1 <sup>st</sup> November 2008	31 <sup>st</sup> June 2009	<b>Test Case Reports</b>		HD
16. External validation, authentication and requirements gathering	1 <sup>st</sup> March 2009	31 <sup>st</sup> June 2009	External User reports Generalisation Specification	<b>GS1 (11m)</b>	HD
17. User documentation and support	1 <sup>st</sup> December 2008	31 <sup>st</sup> June 2009	User Documentation	<b>UD1 (11m)</b>	HD
<b>WORKPACKAGE 5:</b> Project Evaluation and Dissemination <b>Objective:</b> To plan, implement and monitor a realistic Evaluation of the project, its outcomes and impact. To ensure the project and its results are widely and appropriately disseminated to all stakeholders	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009			Tim Cappelli
18. Evaluate the effectiveness of the project in developing a useable knowledgebase.	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Evaluation report for JISC		TC
19. Evaluate the stakeholder satisfaction with the	1 <sup>st</sup> July	30 <sup>th</sup> June	Evaluation report for JISC		TC

system for development of the curriculum within a complex environment.	2008	2009			
20. Evaluate the effectiveness of the agile development processes in meeting stakeholder needs.	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	Evaluation report for JISC		TC
21. Implement the Dissemination Plan.	1 <sup>st</sup> July 2008	30 <sup>th</sup> June 2009	External reports and presentations as detailed in the Dissemination Plan		TC
22.					
23.					