



Project Document Cover Sheet

Project Information			
Project Acronym	SAMSON		
Project Title	Shared Architecture for eEmployer, Student and Organisational Networking		
Start Date	1 April 2009	End Date	31 March 2011
Lead Institution	University of Nottingham		
Project Director	Dr Angela Smallwood		
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Partner Institutions	Nottingham Trent University		
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	5 May 2009	Plan for discussion with Programme Manager



JISC Project Plan

Overview of Project

1. Background

This project is designed to build on the Centre's recent JISC work on distributed architectures, web services and thin eportfolios for learning and transitions (epf4LLL reference model; JOSEPH), work on interoperability, data transfer and standards (RIPPLL, XCRI and LEAP2A) and our experience of supporting work-based learners through developing the technology strand of the Derbyshire-Nottinghamshire LLN, LEAP AHEAD. The Centre's pilots for the EU FP7 TAS3 consortium will inform this project's developments on data security, coupled with the experience of Nottingham Trent University (NTU) in working with Shibboleth on federated data access. The project will also complement strongly the existing consortium partnerships between the two Nottingham universities within the field of employer engagement, involving the Ingenuity programme and Graduate Schools (ERDF project), providing technology to underpin initiatives in student employability and regional workforce development. The recent UoN project for the JISC BCE programme, CRM Self Analysis Tools and Process Mapping, provides important groundwork and tools. We also expect to draw upon NTU's WiMAX Forest project, designed to improve learning for disadvantaged areas of Nottingham, including for SMEs, as well as recent work on evidencing competences, such as the iCoper project and JISC eAPEL projects.

The SAMSON project is needed because of the nature of the current culture of employer engagement arrangements in many HEIs. At present, fragmented local arrangements based on personal relationships tend to predominate, both where research is the focus and where the need is to build understanding with SMEs to encourage take-up of CPD opportunities. Currently effective and seen as essential, this emphasis on personal treatment also reveals weaknesses:

- high-risk dependence on the continuance in post of individual staff members
- limited visibility for the activities, equating to untapped opportunities for the University
- protectiveness of company contacts inhibiting the sharing of information and efficiency gains across the institution, and restricting potential benefits to businesses
- lack of scalability, although the potential market for significant scaling-up of employer engagement has been established.

Broadly, the processes which this project will seek to integrate are currently supported across both HEIs in numerous, separate pockets of activity, mostly with low levels of use of technology.

To address these needs, the project will support data-sharing and communications within universities and also between universities, employers and learners in SMEs, for relationship-building and workforce development, focused on two-way exchanges: work experience/placement for students and CPD for employees. Student placements are already recognised as one of the most practical ways in which the world of HE is made accessible to SMEs and therefore a key lever in extending the reach of HEIs into the SME community.

Our proposal includes a specific focus at the postgraduate level and is both cross-institutional and inter-institutional. The development work will be informed by, and add value to, the planned expansion of work placements in SMEs for postgraduates in both Nottingham universities, especially through their partnership in the ERDF project starting March 2009 to place over 300 postgraduates in regional SMEs over three years. This work will help implement the Leitch and Roberts agendas for the recognition and transfer of higher level skills, extending institution-wide through the Graduate Schools and including some in-depth work on competency matching between academia and business in one area, probably the UoN Engineering Faculty, with its Graduate Centre and major resource of active SME contacts.

The main business advantages are the following:

- The project will enable HEIs to scale up their engagement with SMEs and achieve appreciable efficiency gains for employers as well as themselves, through enhanced access to better and fuller information, e.g. about (a) work-related learning and (b) opportunities for upskilling and knowledge transfer.
- As CRM systems are currently perceived by staff at UoN as under trial and probably limited in their usefulness, this project will provide more flexible and confidential means of achieving data sharing and specific data integrations with legacy systems by developing lightweight services to extract existing information, allowing staff to retain their working practices.
- Use of dynamic services to present and integrate applications will change the current business models associated with the distribution of learning data in HE and also impact on the management of learning data in SMEs. Compared to technologies like CRM, the reduced need for on-site infrastructure will reduce costs and provide better value for money.
- Both the application-specific web services developed and the technology to support integration and security will be transferable across the JISC community.

2. Aims and Objectives

Main aims

- To support data-sharing and communications between learners/employees, businesses and different departments in HEIs involved in employer engagement
- By developing and implementing a scalable, modular web services infrastructure to support relationship-building between universities and businesses, and learning for students and employees
- To contribute to partnership building and the expansion of HEIs' capacity to support lifelong learning and workforce development.

Objectives

- To develop a modular web services infrastructure to support workplace learning and enable flexible exchanges of data between HEIs and employers
- To focus on a comparison of learning experiences and processes for students and employees moving between HEIs and employers: work placements for postgraduate students and CPD for employees

- To deliver an implementation of a reusable model of portal architecture, a generic, scalable system, enabling sharing of data with services (including services provided by third parties) and providing demonstrations of transferability and scalability
- To explore the learning from the EU TAS3 project and integrate a framework for more secure services for increased trust in data sharing
- To carry out collaborative work on ontologies in one area (e.g. Engineering), to mediate an accessible language of competences between HE and employers and providing an automated way of integrating data between systems using ontologies in semantic web services
- To develop portals (including learner eportfolios) to enable different groups to aggregate information on learning and, iteratively, to provide services underpinning these and accessed through them, to ensure information is interoperable and available to all types of learners within the scope of the project, enhancing progress tracking, feedback, communications and relationship-building between employer, learner and HE-based tutor.
- To integrate institutional records of interactions with employers for CPD offerings and postgraduate work placements between hitherto unconnected data stores; e.g. in the Graduate Schools, the Ingenuity programme and Engineering Schools.

Quantified targets

- We will engage at least 100 learners in using the infrastructure in the course of the project. Starting with a small pilot group of 10-15 students at UoN, we will expand activities to at least 30 at each HEI, representing at least 3 different disciplines/sectors and including students involved in the ERDF project, and finally offer roll-out to at least 3 major academic units at each HEI (Schools/Faculties).
- Initial employer work will be carried out with at least 2 businesses, aiming for at least 10 by the end of the project, including SMEs in at least 3 sectors and 1 larger employer.
- At least 1 sector prioritised by the RDA (emda) will be represented amongst both business and HEI participants.

3. Overall Approach

This project does not set out to recreate or rebuild systems which already exist as functioning entities within the contexts we have identified. Rather, the ethos behind the technical development prioritises re-using working systems and transforming data in real time into open standards, moving via web services. Where new builds occur (for instance, with the portal interfaces), these will be web services-enabled to support re-using existing data as far as possible.

Building a 'system' as such is out of scope for the project; rather, lightweight applications and services and integrations of existing applications or services will be developed.

We will use open standards to facilitate interoperability between services, and will further test and develop these for the placement and CPD contexts. Recommendations will be made to

JISC-CETIS (and advice sought) as to practical use of these standards, to build on previous standards work undertaken by the ClePD and more widely.

Development of technology will be phased ensuring stability and suitability for the pilot phases through to full implementation. Qualitative and quantitative evaluation material will be collected from users and iterations of development will occur in close proximity to key stakeholders and users, who will be actively engaged in the project through workshop and user group meetings, developing use cases, providing feedback and piloting training processes and materials. Useful documentation and specification of services and applications will be submitted to the JISC knowledge base.

Ontology work will be confined to a discrete investigation to support one area of service offered by the project.

Success factors:

- The interfaces will be accessible and usable for all parties involved
- Availability of IT systems and equipment to run services
- The SAMSON architecture will be used by the main stakeholders and users beyond the life of the project
- Partners embed and develop the infrastructure into their core practice and systems
- Continued institutional support

4. Project Outputs

Project Deliverables:

- PD 1: Public website
- PD 2: Community website for internal partner use: file sharing, community forum
- PD 3: Baseline report documenting 'as is' situation for UoN practice, covering systems in place, learning processes and an initial assessment of internal training requirements (including ePortfolio training)
- PD 4: 'State of the Art' report on work in this area by other projects, including those funded by JISC, EU FP7 and other funding sources
- PD 5: Stakeholder analysis, including user requirements
- PD 6: Initial architecture design, tested and discussed with all stakeholder groups
- PD 7: Internal training workshops and materials, workgroups and user support.
- PD 8: Scoping report and outline specification ('to be')
- PD 9: Two phases of use cases: V1 internal integration, V2 including external partners, providing four major scenarios
- PD 10: Application-specific services specification
- PD 11: Learning process and ontology use document
- PD 12: Legacy system integration and requirements report
- PD 13: Infrastructure modelled and tested on local systems. Staged series of demonstrations of working systems for incorporating skeleton services to test integration with portal applications. Two phased pilots; then full implementation
- PD 14: Models of existing and new processes as either workflows or ontologies
- PD 15: Submission of modelling activity to the IB
- PD 16: Code for services developed, including supporting documentation and training materials. Delivery of infrastructure and application-specific services.
- PD 17: Evaluation reports (interim and final)
- PD 18: Dissemination: programme of institutional, regional, sectoral engagement events

- PD 19: Regular reporting to JISC: a. June 09; b. interim Sept 09; c. Dec 09; d. interim Mar 10; e. June 10; f. interim Sept 10; g. Dec 10; h. Final & Completion March 11
PD 20: Minutes and notes of regular cross-partner team meetings and steering group.
Reviews of outcomes and progress

We hope to build understanding not only of how technology can be used to enhance employer engagement activities in HE but also of how to support the cultural changes needed in HEIs alongside technological innovations in order to achieve a step change in the levels of collaboration possible between different departments within them and between HEIs and partner companies. Case studies and conferences may be the best ways of sharing this experience with the wider community.

5. Project Outcomes

The infrastructure model will be generic and scalable and will support the continued evolution and multiplication of processes and services. It will be capable of drawing in an ever-widening range of stakeholders across institutions and generating increasingly rich information and connections, enabling full communication between currently disparate employer engagement initiatives within individual HEIs and between learners, HEIs and the employers they are partnering in workforce development.

This project should help to maximise both employability for learners and the development of further types of collaboration between HEIs and businesses. Beyond placements and CPD, individuals should be enabled to identify more substantive higher study possibilities. For both employers and HEIs there should be enhanced, comprehensive information about engagement activities around learning, capable of raising awareness of new avenues of interaction, which might lead to new knowledge transfer partnerships and research collaborations.

By enabling the sharing of protocols for matching learners to skills and competency requirements in both sectors, the project should help to bridge the cultures of academia and employment. Learners should be enabled to identify more suitable opportunities more easily and to benefit from three-way data sharing between learner, employer and tutor by engaging in enhanced communications and feedback.

The infrastructure should transfer to a range of other application areas in both universities and in the HE sector generally, given the impetus for the wide expansion of work experience programmes for undergraduates supported by university careers services, the new widening participation Access agreements in preparation, which may well link with employer engagement and CPD, Active Communities and employability initiatives such as student award schemes for extra-curricular learning which are being offered widely to undergraduates across the sector.

The project should provide a mechanism to support skills development which would be of direct use to regional development agencies through its capacity to benefit regional economies.

6. Stakeholder Analysis

Stakeholders - internal	Interest / stake	Importance
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HE learners – students and employees	Better information on and easier access to work-placement and CPD opportunities Better skills matching Feedback/communication with employer/mentor Need for more holistic view of employment, training and career development records, activities and opportunities	H
HEIs: Teachers	Identifying suitable work placements /employers Feedback/communication with student /employer Reporting service (CPD requirements, student progress) Retaining control of own data on employers	H
HEIs: Business Engagement departments	Ability to track and co-ordinate employer engagement activities across the HEI Tool to support development of partnership working and employer awareness of what HE has to offer	H
Employers	Match student to placement project Feedback/communication with student /HEI Reporting (CPD requirements, student progress) Ease of finding appropriate CPD opportunities in HE for staff Track projects Need for overview of all of an individual employee's interactions with external providers of education and training Talent management	H
HEIs: Information Services Managers	Ease of integrating disparate data sources Enhanced, seamless services for users	M
Stakeholders - external		
Regional development agencies	Value added to related parallel projects using RDA funding Capacity of system to evolve to include further sharable services supporting a wider range of knowledge transfer and upskilling needs in the region	M
JISC	Impact in terms of benefits realisation Impact in each area of the programme Vision: learning, standards, policy Productive interaction with other projects in the programme	M
Standards bodies	Testing out existing standards recommended by JISC–CETIS in new contexts and making recommendations	L
Professional and occupational national bodies	Increased efficiency and effectiveness of CPD processes for SMEs Development of shared language around learning outcomes, skills, competences Scalable system	L

7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Loss of key staff	2	3	6	Regular project team meetings and communications to minimise impact; clear documentation throughout
Lack of communication between project partners	1	3	3	Regular team meetings reviewing progress against plan; prompt sharing/distribution of outcomes and documentation, stored in online facility available to all partners; project manager copied into all correspondence
Excessive diversity of practice between HEIs	2	3	6	Modular, SOA approach; early and regular dialogue to ensure specifications take diversity into account
Project creep	2	4	8	Clear statement of intentions at outset; regular progress meetings; clear communication
Project slippage	2	4	8	Regular review of outputs against timeline; clear, regular communication between partners, with project manager and with JISC programme manager
Closed systems encountered	1	4	4	Development staff are in communication with IS systems at both HEIs
Poor community engagement	3	4	12	Work to engage community interest from the outset; involve internal, regional and national networks, events and publications; regularly maintain and update website; regular communication with JISC
SMEs not technologically ready	4	4	16	Project staff have experience working with private sector; staff will work in situ to provide training and support for in-house development
Unavailability of 'ePortfolio ready' pilot groups	1	5	5	Target pilot groups to be set up and trained in ePortfolio use early in the project so that cohorts will be ready to take part once piloting phase begins
Budget overspend	1	2	2	Maintain effective records of spending and correlate regularly with budget
Lack of understanding of standards and their application	1	2	1	Project team are experienced in use of standards and in communication with standards bodies and communities of practice, so able to seek early support and advice

8. Standards

Name of standard or specification	Version	Notes
XCRI	1.1	Exchange of CPD/WP opportunities
LEAP2A	1.1	ePortfolio items to portal aggregation
SAML/ XACML	Current	Security policies
Shibboleth	Current	Federated security
OWL-S	Current	Ontologies
RDF	Current	Ontologies
BPEL4PEOPLE	Current	Specify business processes
HR-XML	2 (3 if stable)	Investigate for competencies

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.>

Approach

Re-using working systems and transforming data in real time into open standards, moving via web services, will be the core technical method employed. Where new builds are required (for instance, with the portal interfaces), these will be web services-enabled to support re-using existing data as far as possible.

Using technology and learning from the most current projects in the area of security, working closely with NTU developers, the project will seek to build on existing best practice.

Methods

Planning

During the initial planning period, the technical team will carry out a detailed audit of existing systems to identify where services and applications are to be incorporated or created. Integration will follow the Service Oriented Architecture (SOA) model. The security framework will use existing federation techniques from Shibboleth and web service security standards, informed by TAS³ project outcomes.

Documentation and project management

Detailed technical documentation to include UML process diagrams will ensure that the project work is sustainable and scalable within the institutions involved, as well as reusable by the wider community. Processes used within the infrastructure will be captured using a workflow language such as BPEL or ontology-based web service.

Requirements gathering and user analysis will output use cases, summary documentation and business processes models. Code and processes will be commented and documented using common programming languages and platforms with UML models to express the architecture and service diagrams. Documentation will be versioned using track changes or Visual SourceSafe where multiple developers are working together. Project management of the technical process will ensure that releases will be stable for pilots and full implementation.

Integration/implementation and testing

Beginning with joining up 2-3 internal systems, the architecture will be developed from the bottom up with responsiveness to user needs as the core driver. A skeleton architecture developed on UoN systems, with gradually integrated services from NTU and employer systems, will provide a robust test bed for service and security development. Phased pilots and release will ensure that stakeholders can engage with and buy in to the infrastructure early on, thereby influencing its development and communicating the scope and nature of the complex technical picture.

Data will be linked to services provided via specific gateways/portal services. The ePortfolio solution most suitable for integrating data seamlessly with other services will also be identified following an initial investigation of systems and practices. Learners will be linked to the system via the ePortfolio which will use the 'thin service-based ePortfolio' approach to operate as a learner-controlled portal.

External user testing will be iterative and scalable with feedback taking place in a controlled environment initially with recording instruments produced in line with a pre-defined testing plan.

Development method

Technical developments will be agile, with regular small-scale communications between technical developers using an iterative model for user testing and requirements analysis right through to the full implementation. Internal testing will also be iterative and thorough to minimise errors. A centralised logging system will be in place to record errors and performance monitoring software will also be employed. Standard conventions for coding, commenting and reusability will be used.

Standards

Data transfer and standards work will draw on ClePD JISC and EU project expertise. The project will use international standards and draw upon high-granularity web service policy development, using emerging standards such as XACML, to provide learners with secure control of permission levels for granting access to personal achievement data to employers and admissions staff.

Portals developed to enable different groups to aggregate information on learning opportunities, and to provide services underpinning these, will use XCRI to ensure information will be interoperable and available to all types of learners within the scope of the project. This project will thus further explore the range and application of the standard.

10. Intellectual Property Rights

We do not anticipate any IPR issues directly connected with the project. Any web services created will be licensed as open source and use cases will belong to the community. IPR for any bespoke code contributed by private vendors in order to integrate systems will sit with the vendors; however, technical methods and documentation for these integrations will be open source. This will be made clear at the outset of such work.

Project Resources

11. Project Partners

University of Nottingham departments:

- PVC Professor Alan Dodson, institutional 'champion' for this project
- Centre for International ePortfolio Development, leading the project
- Graduate School – institution-wide programmes of postgraduate work placements in SMEs, partly through ERDF project shared with Nottingham Trent University, partly through faculty-based Graduate Centres. Main contact: Dr Matt Donaghy, providing liaison with the ERDF project and contributing experience from the JISC 'CRM Self Analysis Tools and Process Mapping' project
- Business School Ingenuity Centre – CPD programme for SMEs across all sectors; shared project with Nottingham Trent University. Main contact: Steve Upcraft, providing access to and facilitation for working relationships with SME partners
- Engineering Faculty – extensive employer-engagement programme including both large corporates and SMEs; Main contact: Prof Nick Miles, brokering collaboration of academics and employer liaison staff in the faculty
- Research Innovation Services – Main contact: Roger Brooks, brokering partnerships with major corporates; also dissemination contacts with Business Development Officers in every School
- Information Services – Main contact: David Ford, advising on cross-institutional data integration issues and co-ordination of developments
- Directorate of Learning and Teaching – Main contact: Dr Wyn Morgan, facilitation of internal dissemination through university committee structure, eLearning community and CETLs and of external dissemination through national networking

Nottingham Trent University departments:

- Ian Griffiths, Director of Strategic Partnerships, institutional 'champion' for this project
- Information Systems – Manager for planning purposes: Jacqui Tyler; main contact: Francis Lowry, NTU project team lead
- Libraries and Knowledge Resources – David Morris, educational developer in eLearning, facilitating learner and teacher input
- Business Innovation and Creation – Gail Dixon, broker for employer partnerships
- Graduate School – Main contact: Jeremy Haig, liaison with ERDF project

Memorandum of agreement with NTU to be signed by the end of June 09.

Employer partners –

30 April 2009 position statement:

SMEs: Progress is being made to negotiate collaborations initially with 2 Ss and 2 Ms, with the assistance of business engagement departments in both universities. The Ss may well be small IT companies; we are in contact with four such companies at this point. The 'M's will be companies with motivation to partner in this project, either through having more than one interaction with one or both HEIs, or because they anticipate an ongoing collaborative relationship over time, requiring effective management. Companies meeting this description are currently being shortlisted. We hope to identify these partners by the end of May and to sign letters of agreement by the end of July.

The corporate partner with a supply chain of SMEs, targeted for the ontology work, should be identified by the end of July – the strategic brokering process managed by the UoN Research and Innovation Services department is under way and there are four companies currently in the frame: these are in the areas of aerospace and transport engineering, pharmaceuticals manufacturing and market research data. We hope to finalise letters of agreement by the end of September.

12. Project Management

Project progress will be overseen by the existing ClePD Advisory Board (Chair: PVC Professor Alan Dodson) which steers a rolling programme of projects. A strategic body, meeting three times a year, its membership includes:

- representatives of national bodies including JISC, Becta, JISC-CETIS, and BSI
- NTU's Director of Strategic Partnerships
- senior managers from UoN Information Services, Research and Innovation Services and Centre for Career Development
- ClePD team members
- Two employer representatives, nominated by companies partnering in the project

Meeting monthly, an operational management group will bring together representatives of both universities' teams and the further staff named in the project budget, as appropriate for each phase of the project work. Its members will be drawn from the 'main contacts' listed in Section 11 above. Core members will be Angela Smallwood (convenor), Kirstie Coolin, Sandra Winfield, Ian Griffiths and Francis Lowry.

Given the complex nature of the cultural changes underlying this project, maintenance of working relationships and good communications will be crucially important. Three staff members will contribute clearly distinguished and articulated roles to deliver robust project management:

- Project Director Angela Smallwood - establishing and sustaining buy-in from strategic partners, both internal and external; set-up process, baselining, and planning (project months 1-3); ongoing progress reviews, chairing operational meetings, maximising roll-out and dissemination.
Proportion of time allocated to project management = 0.4 FTE for months 1-3; thereafter, 0.1 FTE
- Project Manager Sandra Winfield – consortium agreements, monitoring all progress and spending, evaluation, quality systems and reports, main JISC contact.
Proportion of time allocated to project management = 0.2 FTE

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- eBusiness Analyst Kirstie Coolin – management of technical development programme across partners, convening working groups, driving training and roll-out for full implementation.
Proportion of time allocated to project management = 0.1 FTE to December 2009; thereafter 0.2 FTE

Team members

Angela Smallwood - establishing and sustaining buy-in from strategic partners, both internal and external; also baselining, ongoing progress monitoring, maximising roll-out and dissemination.

Email: angela.smallwood@nottingham.ac.uk

Tel: 0115 846 7301

Kirstie Coolin: - System integration consultation, establishment of working groups, analysis of user requirements, co-ordination of work shared across project partners, and driving the training and roll-out for full implementation.

Email: kirstie.coolin@nottingham.ac.uk

Tel: 0115 951 6976

Sandra Winfield - project management and JISC liaison

Email: Sandra.winfield@nottingham.ac.uk

Tel: 0115 846 7300

Stuart Wood Applications Developer for the ClePD - user needs analysis, application and interface development, testing, data integration and technical support for project partners, technical documentation and involvement in roll-out.

Tom Kirkham (PhD) Applications Developer for the EU FP7 project TAS³ - His role will be to develop the baseline infrastructure and integration of services, particularly with regard to the security and trust elements of the project, testing and technical documentation.

Matt Donaghy is Researcher Development Manager at the UoN Graduate School. Project manager for the ERDF project, he will be responsible for liaison between that work and this project.

Steve Upcraft is Head of Business Development at the UoN Ingenuity Centre - He will be advising on and supporting employer partnerships for the project, especially with SMEs.

Professor Nick Miles is Associate Dean for External Relations and Internationalisation in the UoN Faculty of Engineering. He will direct the faculty's collaborative work with the project.

Ian Griffiths is Director of Strategic Partnerships at NTU and will champion and co-ordinate NTU involvement in the project.

Email: ian.griffiths@ntu.ac.uk

Tel: 0115 848 8534

Francis Lowry is Strategic Architect, Information Systems at NTU. He will manage the work of the NTU development team

Email: francis.lowry@ntu.ac.uk

The NTU development team will consist of: **Wayne Vaughan** and **John Spence** (Senior Software Engineers, Information Systems); **Paul Ashton** (Software Engineer, Information

Systems), **Gail Dixon** (Head of the NTU Rural Knowledge and Enterprise Centre) and **David Morris** (Senior Educational Developer, Library and Knowledge Resources)

All team members will be involved in the initial scoping and user requirements.

13. Programme Support

Programme approach to enhancing skills among HEI staff to communicate effectively with employers

14. Budget – attached as Appendix A

Detailed Project Planning

15. Workpackages – attached as Appendix B

16. Evaluation Plan

Evaluation will take place throughout the project. User and stakeholder feedback will be sought informally through regular meetings and formally through dedicated focus groups (including a learner focus group at each HEI), to inform ongoing technical developments. Draft use cases will be circulated by email for comment and the pedagogic usergroup will advise on and evaluate the learning-capture processes, the competence evidencing and matching and the impact of the ontology work. The operational group will discuss evaluation results at monthly meetings and use half-day meetings two or three times each year to assess the formative impact of interim evaluation outcomes on the project's trajectory, with the guidance of an external evaluator/critical friend, reporting progress and issues to meetings of the ClePD Advisory Board.

Baseline, midway and end of project questionnaires will help to assess project impact. Measures of success are expected to include:

- active use of the system by the groups targeted
- evidence of improved communication, and increased understanding by employers of what HE can offer
- evidence of benefits to both institutional employer engagement practices and SMEs' staff development processes from ease of access to the integrated services
- learner perceptions of improved information and greater sense of control of own data and development
- IS departments using the technology and/or incorporating it in future planning
- buy-in from the ERDF project participants to continue use in 2011-12 and to seek support for continuation beyond that
- wider awareness and take-up of the development in HEIs beyond the departments directly active in the project and in regional and national HE and business networks.

17. Quality Plan

Output	Websites (public and internal use) PD1, PD2				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Start of project	Suits purpose	Design around requirements (both JISC and project partners)	Websites fulfil useful purpose	KC/SW	
	Accessible	Accessibility testing takes place	Website is accessible (w3C best practice)	KC/SW	W3C guidelines
Throughout project	Updated	Team briefed to share material via websites		KC/SW	Email

Output	Baseline report (PD3, PD4, PD7)				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
June 09	Thorough analysis, valid representative messages consistent with partners' experiences	Conduct planned phase of research. Consult with stakeholders, peer review	Acceptance by JISC and colleagues on programme	AS	

Output	Stakeholder analysis / legacy systems integration + requirements / Use cases (PD5, PD11, PD8)				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
June 09	Stakeholder analysis takes place	Ensure early set up of stakeholder meetings	Completion of successful meetings and materials	AS/KC	Bespoke defined templates
	Suitable analysis instruments used	Production of clear analysis criteria	Broad range of requirements gathered to inform system design	AS/KC	Bespoke defined templates
April 10	Identification of relevant legacy systems	Identify those with systems overview, and key stakeholders, use template to ensure consistent data gathered	Clear consistent picture of which systems to work with	AS/KC/SW	Bespoke defined templates

Output	Training materials/workshops (PD6)				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Jan 10	Materials produced ready for	Schedule production well in time	Materials are available and suitable in time for	KC/SW/NTU	

	user pilots		users		
	Materials are fit for purpose	Engage trusted early parties in feedback and evaluation, flexible changes where necessary	Positive feedback from users	KC/SW/NTU	
	Materials are accessible to users	Host on website, produce hard copy	Materials are easily available to users	KC/SW/NTU	

Output <i>Staged series of demonstrations / full implementation (PD12)</i>					
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
June 09	Internal systems aggregated	Engagement with UoN stakeholders, establish open standards to be used and suitability of data sources	Systems aggregated and available on initial portal developments	KC/SW/TK	
Oct 09	Skeleton architecture developed	Integrate services gradually, testing continually	Architecture robust and well designed/documentated	KC/SW/TK	Performance monitoring s/w, W3C
	External services integrated	Gradual integration of external services with Other partners		KC/SW/TK/NTU	
March 11	Pilots undertaken	User groups identified early, briefed. Undertake feedback and evaluation activity	Groups in place, full support of mentors. Use the system for its purpose.	KC/SW/TK/NTU	Bespoke evaluation materials
March 11	Full implementation	Partners trained, user groups supported. Materials in place	Use of system services by all partners/stakeholders	ALL	Bespoke evaluation materials, feedback /review mechanisms

Output <i>Ontology use document (PD10)</i>					
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
May 10	Ontology area identified, use document	Workshops, consultations. Fit for purpose	Ontology area identified and relevant to stakeholders. Document	TK/SW	

			accepted by JISC and other partners		
Mar 10	Tools identified	Evaluation of existing. Draw on community knowledge	Tool fit for purpose	TK/SW	
Sep 10	Ontology integrated	Integration of service, standards compliant	Service integrated and useful to parties	TK/SW	

Output <i>Service models/Specs, Code, documentation, SUM (now Knowledge-base) (PD9, PD13, PD14, PD15)</i>					
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Sep 09 – Aug 10	Use cases and models	Version control, usability, consultation with stakeholders	Useable and acceptable to partners and JISC project partners	ALL	
Oct 09 – March 11	Technical documentation available, Information for KB	Peer review, version control	Useable and acceptable to partners and JISC project partners	KC/SW/TK	

Output <i>Evaluation reports / JISC reporting (PD16, PD18)</i>					
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
March 11	Interim/final reports produced on time	Peer review, consultation on usability, version control	Acceptance by JISC	AS/SW	

Output <i>Dissemination (PD17)</i>					
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
As appropriate	Fit for purpose (workshops, presentations, written materials)	Peer review	coherent messages, acceptance by community	ALL	Bespoke evaluation tools

18. Dissemination Plan

An internal institutional dissemination programme will begin early and raise awareness through newsletters, showcases and an online community. The active engagement of potential further partner units will be fostered by customised workshops based on needs analyses. To assist both institutional implementation and sustainability we will provide a lifelong learning services portal and encourage our initial project partners - and increasingly further partners from the wider community - to present further learning services into the infrastructure. We will engage these users through our showcases and workshops and aim to identify and support a sustainable development group.

For regional dissemination events, considerable value will be added by working jointly with ERDF project colleagues whose remit includes awareness-raising and roll-out primarily on a regional basis - to both HEIs and businesses. Regional bodies already primed include the Nottingham Business Club, iNets, BioCity, Nottinghamshire and Derbyshire Chamber of Commerce and Business Link, as well as the East Midlands Universities Association (EMUA - UoN and NTU are both members). Both projects will feed into the emerging EMUA Employment Engagement Strategy, which will be under development 2009-11.

The national dissemination programme will target policy makers, technologists and learning and teaching communities. There will be 3 national consultative seminars/ workshops (1 in 2009, 2 in 2010) for discussion of, and feedback on, the evolving systems, processes and implementations; these will be invitation events, to ensure that experts have input and all key constituencies connect into the project. Groups involved would include related HE Academy subject centres, UKGrad, the national body for HE careers services (AGCAS), ASET (The Work-Based and Placement Learning Association), JISC-CETIS and appropriate professional sector bodies. In addition, there would be the project website, active take-up of opportunities to present at others' conferences and networking, exchange and collaboration with other JISC projects in the programme, as well as with the Centre for Recording Achievement HEFCE project, *Developing sectoral policy in eportfolio practice to support employer engagement and workforce development*.

19. Exit and Sustainability Plans

In making the project outputs available beyond the end of the project, the website will contain all appropriate deliverables and will be sustained by the UoN for at least three years, or as JISC requires.

Within both HEIs, the many practitioner contexts where the technology is needed will be engaged from an early stage through the internal dissemination and implementation programme and, given the close liaison between the project and central IS in both HEIs, the likelihood of institutional take-up, mainstreaming and ongoing maintenance/development is high.

Sustainability for this project will be a regular agenda item for the ClePD's strategic Advisory Board, which gives regular direct consideration to sustainability and continuation strategies for a range of projects, with some members well-placed to leverage ways forward with regional and national bodies. Examples of these include the following:

- Both the Graduate Schools' ERDF project and this project will feed into the emerging EMUA Employment Engagement Strategy which will be under development 2009-2011 by a high-level working group including the Dean of the UoN Graduate School, an active supporter of our project.
- Another such opportunity reachable through the project's networks and ambassadors is the East Midlands Metropolitan Area Network (EMMAN) shared services project on information security services which has recently received HEFCE funding for work supported by all its members, the eight East Midlands HEIs.

Project Acronym: SAMSON
Contact: Angela Smallwood
Date: 5 May 2009

the project	68 %	32%		100%
No. FTEs used to calculate indirect and estates charges, and staff included	No FTEs	Which Staff Angela Smallwood		

Appendix B. Workpackages