

Joint Information Systems Committee (JISC)

INVITATION TO TENDER

Synthesis and Evaluation of Reference Models

Summary

1. This invitation to tender invites proposals to undertake, on behalf of the Joint Information Systems Committee (JISC), a summary, review and evaluation of six Reference Model projects funded through the [Distributed e-Learning Programme](#).
2. Funding of between £30,000 and £40,000 is available for this work (including VAT, overheads and related travel and subsistence).
3. The deadline for proposals is **12 noon on Monday 19th March 2007**. The survey is expected to take six months to complete. The successful bidder should expect to commence work by 1st May 2007 at the latest and complete work by 31st October 2007.

Background

4. The Joint Information Systems Committee (JISC (<http://www.jisc.ac.uk>)) supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology to support teaching, learning, research and administration. JISC is funded by all the UK post-16 and higher education funding councils.
5. A key technical approach adopted by JISC to realise its strategic goals has been to fund activity in the further and higher education sector around the concept of *service-oriented architecture* (SOA).
6. Service-oriented architecture is an approach to factoring software functionality in to discrete services. The individual services can then be combined and reused in flexible ways to meet the diverse and constantly changing requirements of educational institutions. In 2004 a [paper by Rehak, Wilson Blinco](#) articulated how the benefits of web services within a service-oriented architecture would be applied to the requirements of learning in higher education.
7. Initially work by JISC in the area of service-oriented architecture was managed through the [e-Learning Framework](#) programme which began in 2003. However, by 2005 it was clear that the initial conception of an e-Learning Framework managed by JISC was restricting in geographical reach, in organizational structure and in domain scope.
8. The e-Learning Framework was geographically enlarged to include international partners and a new organizational and governance structure was added. Scope was similarly expanded into the domains of academic administration (e-Admin) and research (e-Science). The new approach dropped the label of e-Learning Framework, was re-branded as the [e-Framework](#) and internationalised as a joint activity between the UK JISC and the Australian Department for Education, Science and Training (DEST).
9. As technical work on the e-Framework progressed, it became clear that attention needed to be focussed to bridge the gap between the underlying technical services and the world of users: to articulate *both* the machine context *and* the human context. In 2004 [JISC Circular 10/04](#) called for the specification of *Reference Models* to address this need.
10. Following response to the circular, [six projects](#) were funded for a period of about 18 months to explore ways of bridging this gap between web service provision and the world of user requirements. Recent work within the e-Framework was exploring the concept of [Service Usage Models](#) (SUMs). SUMs articulate the way in which services are combined to perform a specific function, which in turn may be used to meet a particular user requirement.

11. Following the [conclusion of the six reference model](#) projects it was decided to fund further work that drew on the project outputs and the evolving understanding of SUMs. This new work is being funded through JISC Circular 4/06: Capital Programme and the term “Reference Models” as a label for the approach has been broken down into the more appropriate “Domain Maps”, “Practices”, “Process Models” and “Service Usage Models”.
12. The intention of this invitation to tender is to (a) collate the existing work, (b) generate in a coherent, accessible whole that can be used to provide materials for dissemination to the wider community, a synthesis and evaluation of the work on Reference Model projects, (c) from the projects extract any SUMs that can be contributed to the e-Framework and (d) use that synthesis and evaluation to inform future JISC activity in service-oriented architectures generally and Domain Maps work in particular.

Terms of Reference

13. It is expected that the work undertaken with the funding will fall into four phases:
 - o Phase 1: a review, collation and preservation of existing work;
 - o Phase 2: a synthesis of the work into a coherent and accessible whole;
 - o Phase 3: contribution of approved Services and Service Usage Models to the e-Framework
 - o Phase 4: identification of key outcomes and recommendations.

In more detail:

14. Phase 1: Collate and Preserve
 - o Collate and record approaches/outputs from the six Reference Model projects work on bridging the gap between technical and human perspectives.
 - o Collation at the technical level will involve comparing/contrasting the different technical approaches used and identifying common services, workflows and SUMs.
 - o Collation at the human level will involve comparing/contrasting the methodologies used for scenarios and case studies.
 - o Collation at the tool level will involve identifying the tools used, and more importantly developed by the projects.
 - o Collation will also involve preservation. Currently, the outputs of the six reference model projects are dispersed over a number of institutional websites and archives. The collation phase will ensure that project outputs are maintained with a high degree of preservation through, for example, using CD-ROM or a section of the JISC website.
15. Phase 2: Synthesis and Ease of Access
 - o Synthesize the work into a coherent accessible whole.
 - o Analysis of the approaches, methods and tools in relation to what they were used for and where (domains, practices, processes, services) they were applied.
 - o Synthesise the connections identified in each project to other areas and projects as a contribution to a higher level domain map of learning as a whole, where possible indicating any missing elements that require further elaboration.
 - o Evaluate the programme outcomes against the programme aims, objectives and assumptions. The emphasis here is to evaluate the programme as whole, rather than the individual projects that it funded.
 - o Work with key stakeholders and the community to identify most useful outputs from the six projects. Key stakeholders and community include:
 - a. JISC (through Programme Manager)
 - b. The [e-Framework](#)
 - c. Original Reference Model Projects
 - d. New Domain Model Projects
 - e. Appropriate CETIS SIGs
 - f. Interested commercial parties

16. Phase 3: Contribute SUMs to the e-Framework

Working in collaboration with the e-Framework Editor:

- from the collated Services and SUMs, select those that are appropriate for inclusion in the e-Framework
- enter the relevant Service and SUM information into the e-Framework, with cross-links back to the project web sites.

17. Phase 4: Identify and Recommend

- Identify and document recommendations for future Domain Maps activity and other projects building on the work of the six projects.
- Identify gaps, pinch-points, bottle necks and problem areas that are amenable to Domain Maps type analysis and a service-oriented architectural solution.
- Identify areas that are candidates for developing technical interoperability specifications.

Deliverables

18. Expected outputs to include:

- Collation of the approaches and outputs from the six DeL Reference Model Projects into a preserved collection that can be browsed with high degree of openness and ease of access. This could be through a section of the JISC website.
- Feedback recommendations on approaches used by Reference Models to current set of Domain Maps projects.
- Advice and Guidance document aimed at institutions and stakeholders on how to use Domain Maps to support the design, development and implementation of an ICT system to support the delivery of Learning & Teaching.
- Synthesis of work undertaken to date into a coherent accessible whole for wider dissemination, including an integrated contribution, drawn from the projects, to a higher level domain map for learning and which can also be used as a navigation tool to the projects in the preservation web site.
- Evaluation of the outcome of the programme against its aims, objectives and assumptions.
- Recommendations to JISC
 - Value of Domain model approach
 - On further development activity

Intellectual Property

19. Any information gathered during the course of the survey and not already in the public domain is deemed to be the property of HEFCE on behalf of JISC. The information provided in the report, and the rights to all other output, shall become HEFCE property.

Timescale

20. It is intended that the contract for the survey will be awarded to allow for a start date of 1st May 2007. A draft of the final report should be submitted to the JISC Executive for comment by 3 October 2007. The final report should be delivered by 12 noon on 31st October 2007, at the latest.

Funding Available

21. Between £30,000 and £40,000 is available for this work. This funding includes any applicable VAT and related travel and subsistence.

Evaluation Criteria for Bids

22. Proposals will be evaluated against the following criteria:

- Relevant knowledge and experience of service-oriented architecture, as well as an understanding of institutional IT requirements in UK further and higher education (25%).

- Availability to carry out the work within the required time and an evaluation of the risks to successful completion of the work (15%).
- Quality and feasibility of work plan including a breakdown of how resources are to be used against project outcomes/activities and a project time line for main project actions/deliverables (20%).
- Experience in fluent, concise, readable report writing for senior managers in further and higher education (25%).
- Value for money (15%)

Bidding Guidance

23. A guide to bidding for JISC projects can be found at: <http://www.jisc.ac.uk/bidguide.html>.

Project Management

24. Projects will be expected to follow JISC's Project Management Guidelines (http://www.jisc.ac.uk/proj_manguide.html), including adherence to good project management practices, regular reporting and participation of projects in steering committees.

Submission Details

25. The tender proposals should clearly identify:
- Previous relevant experience;
 - Analysis of risks to successful completion of the consultancy;
 - The proposed methodology/methodologies to be used;
 - A work plan with milestones and deliverables;
 - The basis on which the fee would be calculated;
 - The staff to be used in the main areas of work and where management responsibility for the project will rest;
 - A single point of contact for all correspondence relating to the project should be provided with full contact details.
26. Proposals of no more than 5 single-sided A4 sheets, typeset in Arial or a similar font at no less than 10pt size, should be emailed, with the header 'Synthesis and Evaluation of Reference Models' in Word or Rich Text format to Georgia Slade (g.slade@jisc.ac.uk) no later than 12 noon on Monday 19 March 2007. It is the responsibility of the bidder to ensure that the email has arrived by the deadline. Proposals should also be accompanied by a completed cover sheet (see appendix A) in addition to the 5 page limit. CVs may be attached as appendices to the 5 page proposal and should be no longer than 2 sides of A4 each.
27. Electronic copies MUST be received by the deadline which will be strictly adhered to. Faxed or late proposals in hard copy format will NOT be accepted.
28. If the bid exceeds the page limit guidance, evaluators will be advised to disregard information provided beyond the indicated page limit.
29. The JISC reserves the right not to select any bids.

Further Information

30. All enquiries regarding this invitation to tender should be sent to Heather Williamson, Programme Manager (email: h.williamson@jisc.ac.uk).

Appendix A

Cover sheet for proposals *(All sections must be completed)*

JISC ITT: Synthesis and Evaluation of Reference Models

Name of institution/organisation
Project partners (if applicable)
Full contact details for primary contact Name: Position: Email: Address: Tel: Fax:
Length of Project
Project Start & End Dates
Total Funding Requested from JISC