

Project Acronym: VADS
 Version: 2
 Contact: Amy Robinson
 Date: November 2008



Project Document Cover Sheet

Project Information			
Project Acronym	VADS		
Project Title	Enhancing the VADS Image Collection		
Start Date	1 October 2008	End Date	30 September 2009
Lead Institution	University for the Creative Arts		
Project Director	Rosemary Lynch		
Project Manager & contact details	Amy Robinson University for the Creative Arts Falkner Road Farnham Surrey GU9 7DS Tel: 01252 892723 amy@vads.ac.uk		
Partner Institutions	N/A		
Project Web URL	http://www.vads.ac.uk		
Programme Name (and number)	Enriching Digital Resources – Digitisation Programme		
Programme Manager	Alastair Dunning		

Document Name			
Document Title	Project Plan		
Reporting Period			
Author(s) & project role	Amy Robinson Project Manager		
Date	October 2008	Filename	projectplan
URL			
Access	<input type="checkbox"/> Project and JISC internal		<input type="checkbox"/> General dissemination

Document History		
Version	Date	Comments
1	30 October 2008	First draft
2	17 November 2008	Second draft



JISC Project Plan

Overview of Project

1. Background

The VADS image collection (vads.ac.uk) has grown considerably over the eleven years of its existence. Some three hundred educational institutions, museums and individual artists have contributed images and metadata to the VADS image collection since its inception, and there are currently over 100,000 images ranging across fine art, architecture, media, applied arts and design. The collection is unique in UK terms, in that it has been contributed to by the UK Education Community itself for the purpose of bringing together in one place a range of image resources, available free at the point of use, to support research, learning and teaching. The images and metadata are of an extremely high quality. VADS holds high resolution copies of most of its images and the contextual and catalogue information that accompanies these is the product of extensive expert research.

While the visual arts are the focus of the VADS image collection, it has applicability across many other domains, including other areas of the arts, humanities, social sciences and culture, and covers a breadth of topics from 18th century politics, women's suffrage, war propaganda and haute couture to street life in 1970s East London. Some recent additions to the collection include the Parker Knoll Chair Collection, the Arts on Film Archive, the Tom Eckersley Collection and the Charles Rennie Mackintosh Northern Italian Sketchbook.

The VADS image collection is well used in teaching and research compared with many other digital resources in academia. The collection enjoys some 60000 unique user accesses per month, and VADS is always striving to improve the usefulness of the collection for these users and to encourage others. It has recently revamped the design of the web interface and introduced new features (such as 'image of the day' and 'popular searches this month'). This project will give VADS the funds to take much greater steps to fundamentally enhance the collection and its interface in key ways which would be impossible otherwise.

Why is this project necessary?

The JISC Images Working Group, among others, has recently identified a need for UK Education to be able to share and contribute image data to a 'virtual reservoir' of images.¹ To help address this need VADS will put in place the mechanisms to enable the sharing of VADS image metadata seamlessly amongst JISC services, institutional repositories and other complementary databases from within and outside HE.

Another key necessity of the academic image community and articulated in recent image user studies² is the ability to give academic users more flexibility in using image collections for teaching and research, and to work to find better ways of searching and retrieving relevant images from across

¹ *Digital Images in Education: realising the vision*, Leona Carpenter and Caren Milloy (ed.) London, 2007 Sharing image data is also a key subject from the repository perspective in, *Defining Image Access Final Report*, David Shotton et al., Oxford 2007, and the CLIC Report, Jonathan Miller et al., 2006

² Pre-Raphaelite Research Project: Audience Research Report, Anna Humphries, 2008

multiple collections. VADS will address this need by (a) developing the functionality to allow end users to curate, annotate and publish their own image sets from the collection, and (b) enhancing existing VADS image metadata to facilitate a more systematic and coherent cross searching of the collection.

2. Aims and Objectives

Taking the above into account, the aims of the proposed project are listed individually below alongside their objectives and a brief rationale for each.

Aim 1: To enable VADS images to be accessed more easily

Rationale:

To place VADS image resources at the heart of educational image provision and make VADS a key component of the JISC Information Environment, helping to fulfil the vision of the JISC Images Working Group and others. This will enable VADS to expose quality assured, standards compliant metadata to the growing Institutional Repository network, JISC funded aggregator services, and other OAI compliant institutional databases, and give VADS the capability of harvesting images from other sources to augment its collection.

Objectives:

- Develop OAI-PMH³ capabilities on the VADS database and provide at least one outgoing data mapping to Dublin Core
- Test the process of metadata harvesting by linking with one other OAI compliant archive
- Assess other mechanisms for data sharing ensuring VADS can be flexible in future initiatives, including OpenSearch and RSS

Aim 2: To enable greater academic use of the collection

Rationale:

VADS resources are relatively well used in UK teaching and research, however, more could be done in understanding exactly *how* these images are used and which images apply to specific courses and curricula. Here VADS will give users the ability to annotate and publish their own sets of images based around particular topics, themes, interests and course work. This will provide opportunities to use and re-use the collection in innovative and potentially rejuvenating ways and maximise the value of the collection to its core academic audience.

Objectives:

- Consolidate existing VADS user studies and analysis, and undertake remaining academic usage analysis
- Identify three academic end users and through controlled testing prove the concept of publishing and annotating image sets around specific course teaching

³ Open Archives Initiative Protocol for Metadata Harvesting, <http://www.openarchives.org/OAI/openarchivesprotocol.html>

Project Acronym: VADS
Version: 2
Contact: Amy Robinson
Date: November 2008

- Develop the functionality on the VADS website to enable these academic test users to annotate and publish their image sets
- Implement the annotate image sets tool functionality for other users

Aim 3: To enable more efficient image search and retrieval

Rationale:

The result of the tremendous breadth of material in the VADS collection, from a wide range of sources, is that searching across the collection in a systematic way becomes increasingly challenging as the collection grows. The image collections tend to make sense in isolation, and enhancements to existing metadata will be required to enable more systematic search and retrieval across multiple collections.

This aim is not about wholesale re-cataloguing of image metadata, but rather we will apply a simple two level classification scheme based on ADAM Subject Headings – a Dewey Decimal based classification scheme similar to that used by Intute, but Arts focussed – which will facilitate a systematic browsing of the collection as a whole. In tandem with this controlled approach to metadata enhancement, we will also look to apply some level of user tagging. We will implement this carefully on the site following a series of use tests of the generated metadata and interface design options.

Objectives:

- To apply a general top level hierarchical taxonomy to VADS collections
- To investigate further, through controlled user studies, the implementation of user tagging
- To implement a combination of controlled terms and free to edit user tags, enabling improved searching of the collection
- To design and develop the VADS interface in accordance with use testing findings to include the controlled taxonomy and user driven folksonomy, facilitating enhanced cross search and retrieval of VADS images

3. Overall Approach

3.1 Strategy and methodology

Overall direction of the project will be provided by the Head of Library and Learning Services at the University for the Creative Arts, who has taken interim responsibility for the strategic direction of VADS following the recent departure of the VADS Director. The day-to-day management of the project will be provided by the VADS Collections Manager, who will oversee all the work packages of the project and ensure that all the project outputs are delivered within the agreed deadlines and budget. The components of the project plan (objectives, risk management, budget etc) and the work packages will be regularly reviewed so that any problems can be flagged up and addressed at an early stage.

The work will be undertaken by existing staff at the University with the exception of the Information Management Officer post which will be filled by January 2009. The Collections Manager will be responsible for audience research, liaison with academics to develop the image sets, web interface design and dissemination. They will be assisted by the Information Management Officer who will take responsibility for the development of the VADS' taxonomy and folksonomy. The Software Developer will be responsible for all technical development including setting up the OAI-PMH services, enhancing the VADS database, and improving the search functionality.

Project Acronym: VADS
Version: 2
Contact: Amy Robinson
Date: November 2008

The Project Director, Project Manager, Software Developer and Information Management Officer will form the Project Management Group along with representatives from the University library, academic and research communities. The group will meet every two months for the duration of the project.

The project will bring together a formal Advisory Group with representatives from the wider academic, library and information communities. The role of the Advisory Group is to provide advice to inform project development, to provide another means of user testing during the course of the project, and to contribute to dissemination and promotion. This group will meet twice, in the first and last three months of the project, and will maintain contact as necessary by telephone conferencing and email.

3.2 Issues to be addressed

The project will address a number of issues highlighted in the Programme circular:

Interoperability

By developing VADS as an OAI-PMH service provider, the project will help to address the 'silo effect' whereby digital resources exist in separate silos, unconnected to other relevant content locked away elsewhere, leaving users at the mercy of the idiosyncrasies of search engines and their own patience in locating and exploiting relevant content.

Enhance existing collections - metadata quality

The project will enable the education community to cross-search VADS collections, browse and retrieve images in a more systematic way by improving the consistency of metadata between different collections.

Enhance existing collections - alignment with course teaching

Existing lightbox functionality will be developed further to enable researchers and teachers to select their own image sets from VADS collections, based around particular topics, themes, interests and course work, and to annotate and publish them on the VADS site.

3.3 Scope

Audience research and evaluation

A short user study will be conducted at the beginning of the project to consolidate previous VADS' user studies and provide an up-to-date user analysis. Evaluation will be ongoing throughout the project through user testing and feedback, and a final evaluation report will be produced at the end of the project to assess the impact and the effectiveness of the VADS website in reaching out to audiences both within HE and beyond and to identify future areas for development.

OAI-PMH implementation

The VADS database will be set up as an OAI-PMH service provider which is capable of serving image metadata to the growing Institutional Repository network, and will give VADS the capability of drawing images from OAI-compliant databases to augment the collection. This will be tested by linking with one OAI-compliant database.

Metadata enhancements

One of the principle objectives of the project is to enable the education community to cross-search VADS collections and retrieve images in a more systematic and coherent way by improving the consistency of the metadata between different collections. This is not about the comprehensive re-

cataloguing of the collections, but rather the application of a simple two level classification scheme, similar to that used by Intute, which will facilitate a systematic browsing of the collection as a whole. In tandem with this controlled approach to metadata enhancement, we will also look to apply some level of user tagging.

Establish themed image sets

Existing lightbox functionality will be developed to enable academics to create, annotate and publish themed image sets on the VADS site. This will provide opportunities to use and re-use the VADS collections in new and potentially rejuvenating ways and maximise the value of the collection to its core academic audience. Images from outside the VADS collections will not be included as there may be significant IPR issues. Three academics will be approached to test this new functionality and to select images which map to a particular area of the curriculum or their research interest.

Dissemination

The project will work with JISC in promoting the VADS Image Collection and other projects in the 'Enhancing Digital Resources' programme. Once VADS has developed OAI capabilities, we will also target reciprocal partnerships with other JISC services, image collections and repositories which will further serve to disseminate the project outcomes. More traditional dissemination of progress and evaluations will be through press releases, the project web page, marketing at relevant workshops and events, reports, and a targeted mail out to the academic and library communities.

3.4 Critical success factors

- The knowledge, skills and experience of the VADS team in developing digital resources that meet the needs of the UK education community and ensuring project outputs are delivered on time.
- The dissemination of project progress and outputs to the UK education community to maximise the value and usage of the collection by its core academic audience.
- VADS' new status as a Research Centre of the newly formed University for the Creative Arts. This new status will ensure VADS continues as a key resource for the Education sector in the longer term, thus ensuring enhancements made to the VADS Image Collection will be sustainable into the future.

4. Project Outputs

4.1 Tangible deliverables

- An open access OAI-PMH compliant database
- Enhanced interface and metadata for cross-searching VADS' collections
- Themed image sets which align VADS images with specific course teaching
- Project plan and reports to JISC
- Audience research and evaluation documents

4.2 Knowledge and experience

- Evidence of the impact of VADS' digital content, how the images are used, and which images apply to specific courses and curricula - shareable with the wider education community through the VADS website, project reports, papers etc
- Greater knowledge of controlled taxonomy and user driven folksonomy approaches - shareable with the library and education communities through the VADS website, project reports, papers

- Increased knowledge and skills within VADS - transferable to other projects within the University such as the JISC-funded Kultur Institutional Repositories Project

5. Project Outcomes

- Wider awareness and access to VADS image resources within the UK education community, encouraging greater use of the material in teaching, publications and research
- Metadata and interface enhancements that will make more efficient use of an already existing digital collection, maximising the resource's value both in monetary and in educational terms
- Wider awareness of VADS within the education, museum and library communities, bringing further opportunities for collaboration and expanding the content and coverage of the image collection
- Papers and research outputs that will contribute to VADS' development as a new Research Centre within the University Library

6. Stakeholder Analysis

Stakeholder	Interest / stake	Importance
University for the Creative Arts	Grant holder – development of the university's national/international profile	High
JISC	Funder – VADS' findings of use to future JISC projects	High
Collection depositors	Institutions and individuals who have contributed images to the VADS collections – Increase awareness and use of their content by the education community	High
Teachers	User group – Assist teaching	High
Researchers	User group – Assist research	High
Students	User group – Assist learning	High
Librarians	User group – Support the library and information service	High
Museums and Galleries	User group – Assist research Potential contributors to the VADS collection – Increase awareness and use of their content by the education community	High
General Public	User group – Access publicly funded research and digital content	Medium

Publishers	User group – Identify material	Medium
AHRC and other funding bodies	Funders of digitised content – Project increases visibility of publicly funded research, and thus accountability of funding bodies	High

7. Risk Analysis

Risk	Probability (1-5)	Severity (1-5)	Score (P x S)	Action to Prevent/Manage Risk
Staffing				
Retention	2	5	10	Integrate activity as far as possible into mainstream developments within the institution.
Skills	2	5	10	Ensure effective recruitment; put in place adequate training for project members; establish external links to buy in skills on a short-term basis if necessary
Organisational				
Project Management	2	5	10	Maintain strong team working; clear definition of responsibilities; forward monitoring of project plan; regular meetings of Project Management Group.
Budget/schedule overrun	2	3	6	Budget presentation based on realistic assessment of need. Clear breakdown of timescale for each workpackage.
Over-demanding agenda	2	3	6	Careful prioritisation.
Technical				
Technical viability	2	3	6	Utilising existing VADS team and experience; analyse technical options early on in the project; review technical infrastructure options regularly.
Legal				
Copyright issues	1	4	4	No significant IPR issues to tackle; seek advice from the JISC Web2Rights project in relation to the user-generated annotation tool.
Other				
User uptake fails	2	4	8	Ensure effective communication strategy; work from a user-led perspective; maintain close relations with intended audiences.
Sustainability	2	4	8	Ensure stakeholders are committed to sustainability.

8. Standards

The VADS image catalogue has been developed in line with standards and best practice. The metadata schema is based on the VRA Core 4.0, one of the major metadata standards currently being applied within the visual arts. Images on the website are presented as jpegs and VADS holds high resolution copies of most of the images in TIFF format.

Name of standard or specification	Version	Notes
OAI-PMH		For metadata harvesting
XHTML,CSS	XHTML 1.0 CSS Level 2	Website interface
Controlled subject headings		Simple two-level classification scheme based on ADAM subject headings – a Dewey decimal based classification scheme similar to that used by Intute
Web accessibility standards	W3C Web Content Accessibility Guidelines 1.0	Website interface

9. Technical Development

9.1 Software

The website currently runs on:

- UNIX Operating System (SunOS)
- Apache 2.2.4
- MySQL 4.1
- PHP 5.2.6
- Wordpress 2.5.1

The project will utilise other software where appropriate such as:

- Zoomifyer
 - steve-tagger-2.1
- OAI software:
- RapidVisualOAITool
 - dcmata toolkit-0.2.0
 - harvester-2.0.1

9.2 Digital preservation

Full backups of the website are taken once a month and incremental backups are taken nightly. Additional SQL backups are taken before uploading new metadata records and before any other significant changes are made to the database.

At present VADS holds high resolution copies of most of the images on archival quality CD and on the digital repository at the Centre for e-Research, King's College London. The University for the Creative Arts will be installing a dedicated repository for VADS image collections in 2009 (using Fedora software) which will be hosted, supported and maintained by UCA IT services.

10. Intellectual Property Rights

The VADS image collections come from a variety of institutions and individuals who either retain copyright on the images themselves or manage IPR for third parties. The VADS' image collections are licensed to the University for the Creative Arts, to make freely available for teaching, learning and research in UK Education. The technical platform on which these resources are delivered is authored and owned by the University for the Creative Arts. The project will seek advice from the JISC Web2Rights project regarding the development of user-generated annotation tools to ensure that any rights issues are addressed.

Project Resources

11. Project Partners

N/A

12. Project Management

Overall direction of the project will be provided by the Head of Library and Learning Services and the day to day management will be provided by the VADS Collections Manager, who will ensure deliverables and timescales are met.

The Collections Manager will also be responsible for audience research, liaison with academics to develop the image sets, web interface design and dissemination. They will be assisted by an Information Management Officer who will be appointed by January 2009 and will take responsibility for the development of the VADS' taxonomy and folksonomy. The Information Management Officer will require training on VADS' systems which will be provided by the Collections Manager, and any other training needs will be identified at the outset and will be met through attendance at relevant internal/external training courses.

The Software Developer will be responsible for all technical development including setting up the OAI-PMH services, enhancing the VADS database, and improving the search functionality.

The Project Team will form the Project Management Group along with representatives from the University's library, academic and research communities which will meet every two months for the duration of the project and will be chaired by the Head of Library and Learning Services.

The project will bring together a formal Advisory Group with representatives from the wider academic, library and information communities. The role of the Advisory Group is to provide advice to inform project development, to provide another means of user testing during the course of the project, and to contribute to dissemination and promotion. This group will meet twice, in the first and last three months of the project, and will maintain contact as necessary by telephone conferencing and email.

The core project team (Project Manager, Software Developer, Information Management Officer) will meet at least once a week to update on progress and to flag up any issues and ensure that any problems can be addressed at an early stage.

Project Team

Name	Project Role	Allocation of time	Contact Details
Rosemary Lynch	Project Director	0.1	Head of Library and Learning Services

			University for the Creative Arts Falkner Road Farnham Surrey GU9 7DS RLynch@ucreative.ac.uk 01252 892703
Amy Robinson	Project Manager	1.0	amy@vads.ac.uk 01252 892723
Carlos Silva	Software Developer	1.0	carlos@vads.ac.uk 01252 892807
To be appointed	Information Management Officer	0.8	info@vads.ac.uk 01252 892723

13. Programme Support

Feedback and advice from JISC on the progress and development of the project will be welcomed throughout the duration of the project. We would particularly welcome support in the following areas:

- A review of the draft project plan before finalisation
- Disseminating the project outputs to the UK education community and promoting the VADS' image collection via JISC

14. Budget

See Appendix A.

The budget for staff costs has altered due to recent staff changes at VADS. The VADS Director post is currently vacant and the Head of Library and Learning Services has taken interim responsibility for the strategic direction of VADS. The University will recruit a fixed-term Information Management Officer to support the VADS Collections Manager and Software Developer working on the project. This post will be part-funded by the University and part-funded through the project grant. The University will also contribute part-time Admin support to the project. These contributions will replace the university's financial contributions in relation to the VADS Director post (which was originally budgeted at 0.2 FTE). All other costs remain unchanged.

Detailed Project Planning

15. Workpackages

See Appendix B.

16. Evaluation Plan

Timing	Factor to Evaluate	Questions to Address	Method(s)	Measure of Success
Ongoing - formative	Overall implementation of the project	Have milestones been met on schedule and to budget? Is project management effective?	Assessed in bi-annual reports to JISC; monitoring of	Workpackages completed on time and to budget; approval of documentation by JISC

			progress at project meetings	
Ongoing	Outreach to stakeholders	Are dissemination and advocacy activities targeted appropriately?	Feedback; peer review	
Months 11 - 12	Impact of VADS' image collection within the teaching and research community	Has the academic use of the collection increased? Is VADS' data available through other sources? Has the project improved searching and retrieval?	Feedback; Monitoring academic usage through web stats analysis; number of academic image sets; number of external databases that harvest VADS' data	Positive user feedback; meeting quantitative targets
Months 11 - 12	Overall achievements of project and its usefulness to the wider community	Have the aims and objectives been met? Was the methodology effective? What lessons have we learnt? What are the implications for future work?	JISC final report	Approval of final report

17. Quality Plan

Output	An open access OAI-PMH compliant database				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Months 2 - 5	Establish VADS as an OAI-PMH data harvester and provider	Added to OAI registry; test by linking up with one other OAI compliant archive	Tests successful	Software Developer	

Output	Themed image sets				
Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
Months 6 - 8	Relevance to teaching and research	Audience research; liaison with 3 academics to test new functionality	Themed image sets map to specific course teaching and identified user needs; reporting	Project Manager; Information Management Officer	
	Usable	User testing and questionnaire	Positive feedback	Information Management	

		feedback		Officer; Project Manager	
	Accessible and standards compliant	Automated and manual testing	Code tested by project team	Information Management Officer; Software Developer	

Enhanced interface and metadata for cross-searching VADS' collections						
Output	Timing	Quality criteria	QA method(s)	Evidence of compliance	Quality responsibilities	Quality tools (if applicable)
	Months 6 - 10	Consistent use of subject terms	Adherence to classification scheme based on ADAM Subject Headings	Prescribed use of controlled subject headings	Information Management Officer	
		User-generated terms enrich existing VADS metadata	User testing to determine level of user-generated tagging and annotation; automatically filter tags which contain offensive or objectionable terms; ensure clear delineation between VADS metadata and user-generated terms	Reporting; develop facilities for VADS to manage and monitor user-generated terms	Project Manager; Software Developer	
		Usable	User testing and questionnaire feedback	Positive feedback	Information Management Officer; Project Manager	
		Accessible and standards compliant	Automated and manual testing	Code tested by project team	Information Management Officer; Software Developer	

18. Dissemination Plan

Timing	Dissemination Activity	Audience	Purpose	Key Message
Month 1	Press release	Various	Raise awareness	Funding secured for enhancing VADS image collection
Month 1 onwards	Institution newsletter	University for the Creative Arts	Raise awareness; provide news relating to the project	Funding secured for enhancing VADS image collection; progress of

				project
Month 1 onwards	VADS news page / RSS feed	Education community	Raise awareness; provide news relating to the project	Funding secured for enhancing VADS image collection; progress of project
Month 1 onwards	Project web page	Education community	Provide key information/documents relating to the project	Aims and progress of project
Month 1 onwards	Public JISCMail list (vads@jiscmail.ac.uk) and other relevant lists	Education community	Raise awareness and provide news relating to the project	Funding secured for enhancing VADS image collection; progress of project
Month 1 onwards	Dissemination via JISC Digitisation Programme – JISC press release, programme meetings, etc	JISC; JISC-funded digitisation projects; education community	Raise awareness; dissemination of project outputs	Dissemination of project outputs, raise awareness of VADS
Months 6 - 12	Target reciprocal partnerships for data sharing via OAI	Various	Raise awareness	Raise awareness of VADS
Months 6 - 12	Identify relevant conferences, workshops and other events for presentation	Various, depending on event – library, education, museum communities	Raise awareness and provide news relating to the project; dissemination of project outputs	Progress of project, dissemination of project outputs, raise awareness of VADS
Months 6 - 12	Publication in relevant journal	Education community	Dissemination of project outputs and findings	Dissemination of project outputs and findings, raise awareness of VADS
Months 9 - 12	Develop publicity materials for targeted mail-out to the academic and library communities	Education and library communities	Dissemination of project outputs	Dissemination of project outputs, raise awareness of VADS
Month 12	Press release	Various	Dissemination of project outputs	Dissemination of project outputs, raise awareness of VADS

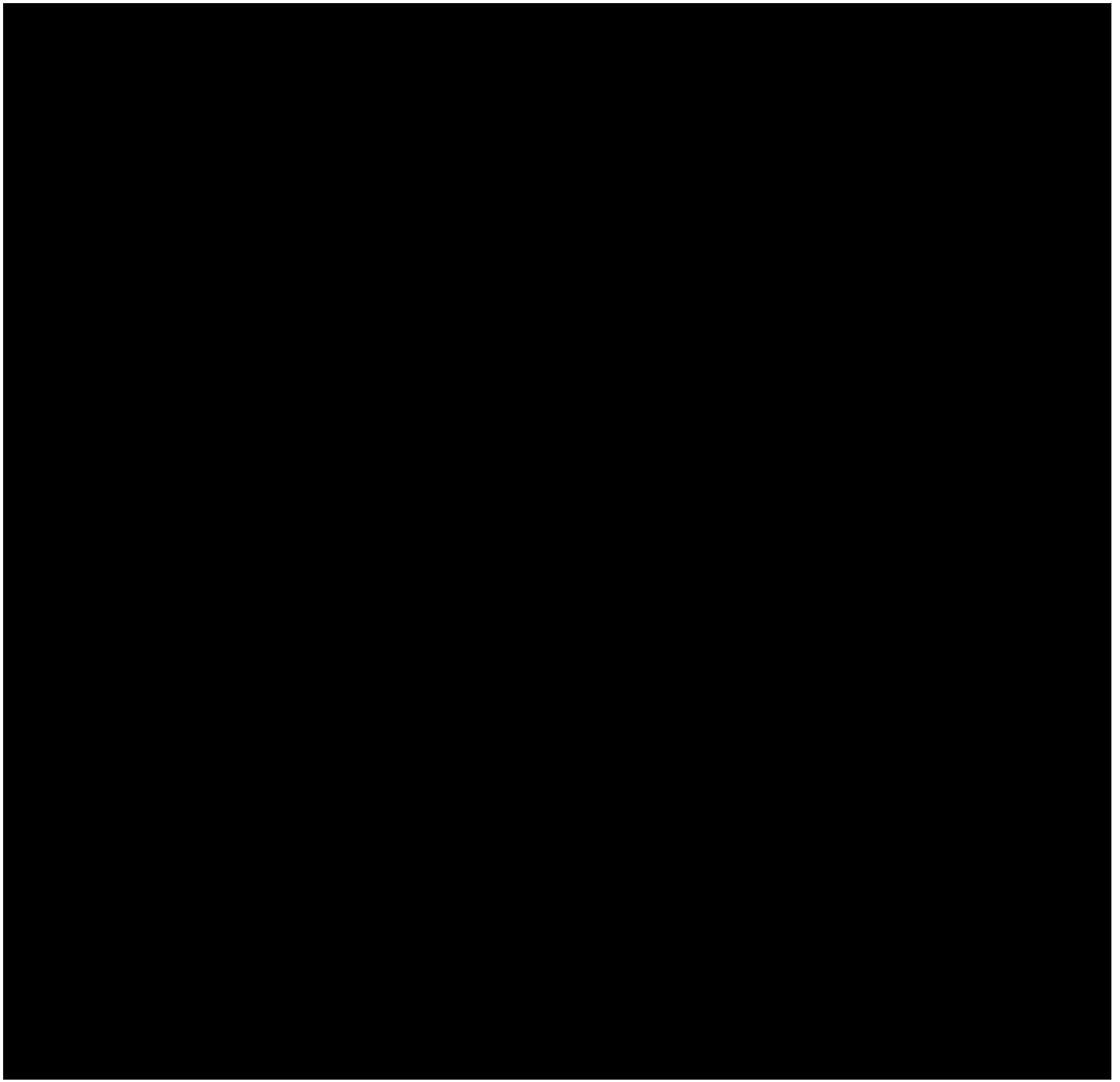
19. Exit and Sustainability Plans

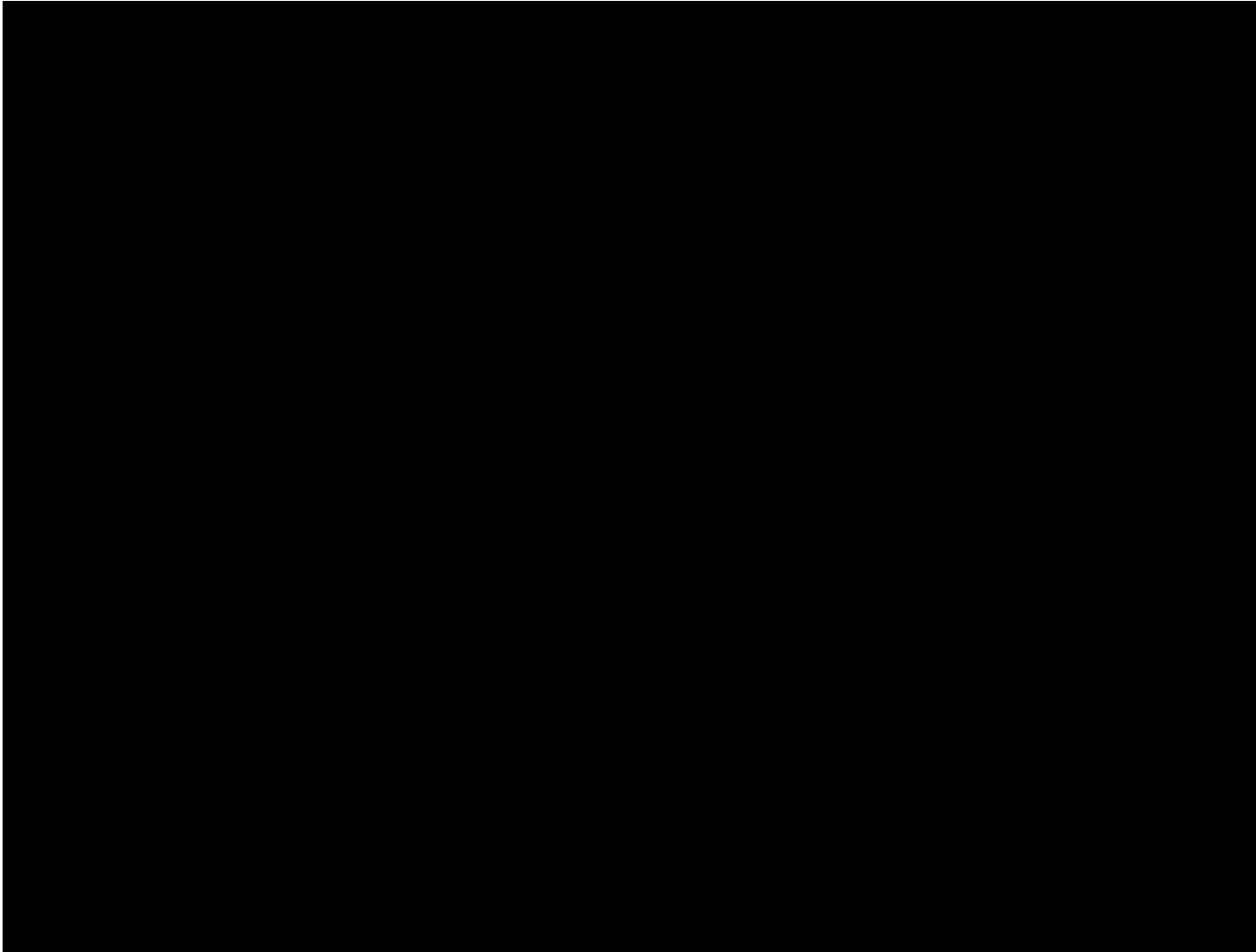
Project Outputs	Action for Take-up & Embedding	Action for Exit
Project management documentation	Core documents archived in JISC records management system. Some documents also made available on project web page.	Ensuring accessibility of documents and website maintenance. Documents retained on project website for 3 years after project completion.

Project Acronym: VADS
Version: 2
Contact: Amy Robinson
Date: November 2008

VADS image collection (vads.ac.uk) with enhanced functionality	Dissemination activities (see section 18); clear user documentation; technical documentation	Access and maintenance
Understanding of how VADS' images are used and greater knowledge of controlled taxonomy and user-driven folksonomy approaches	Findings disseminated through articles and/or papers	Preservation and access – articles/papers made available on project website and deposited in institutional repository

VADS has recently become integrated into the University for the Creative Arts as a Research Centre within the Library and Learning Services Department. This new status will ensure that the website and the enhancements made throughout this project will be maintained into the future. The University will be seeking to source additional funding in order to expand the content of the VADS image collection after the end of the project, and for any further significant enhancements to be made to the catalogue.





Appendix B. Workpackages