JISC

JISC Final Report

Project Document Cover Sheet

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1. Executive Summary

1.1 The Kultur project has developed a model for repository start-up that addresses the needs of the UK Higher Education Arts Sector. Institutional repositories have traditionally been tailored towards text-based outputs and have been less proficient at accommodating the more complex multimedia outputs associated with practice-led research. The project has addressed the need for IRs to expand their capacity to manage non-text outputs effectively. At the same time, it has also responded to a disciplinary need for a more robust information infrastructure for practice-led research, which is particularly important for art and design as a relatively new but expanding research discipline.

1.2 The project partners combined specialist knowledge of the arts sector with technical expertise and experience of managing an established institutional repository. The approach was user-led. A detailed user analysis established that the arts community needed a repository that could manage complex objects, capture processes as well as outputs, provide a flexible metadata schema/workflow, and offer a range of options for protecting the copyright of visual and time-based works, all through a highly visual user interface. The added value of a repository for this community resided in its potential to assist researchers in mediating between academic and professional art environments.

1.3 Using EPrints software, the project developed a demonstrator repository tailored to these needs. The demo was populated with over 300 records of events and artefacts, and was continually refined in response to community feedback. This formed the basis of two new institutional repositories for University of the Arts London and University for the Creative Arts, and enhanced the University of Southampton's existing institutional repository. The project also investigated policy for the effective management and population of a repository specialising in creative material, with particular attention to rights issues. As well as local benefits to the project partners, the outcomes of the project have a broader application for other institutions seeking a framework for the management of practice-led research outputs.

2. Background

2.1 Digital repositories have established a significant profile in the scholarly information environment, and are increasingly being used at an institutional level as a means of managing and promoting research and learning assets. However, there are still very different levels of repository take-up and expertise in HE, and issues surrounding populating repositories still need to be addressed. There is a clear imbalance in repository engagement across disciplines, with rates of deposit in science, technology and medicine higher than in the arts and humanities. Part of the problem is that repositories are technically limited in their provision for non-text research outputs. There are also additional cultural barriers to overcome in order to increase take-up.

2.2 The motivation of the Kultur project is to address these issues within a discipline area particularly underdeveloped for repositories: research output in the creative and applied arts. None of the UK's specialist arts institutions currently have their own repositories, and repositories associated with other HEIs tended to have relatively low levels of content from their Schools of Art. The Kultur consortium has been established to address this gap, and to

assist the arts community in developing a much needed framework of practice for capturing and managing their research activity in digital form.

2.3 The Kultur project draws on the experience of developing and embedding the research repository at Southampton.[1] It also builds on previous projects that have investigated the current and potential uses of repositories for managing visual and multimedia content. Focusing on providers of multimedia digital collections within HE, the JISC-funded MIDESS project (Management of Images in a Distributed Environment with Shared Services) produced user requirements, IPR requirements, recommendation for good practice and some valuable case studies covering the art sector.[2] The CLiC study (Community-Led Image Collections) reviewed the barriers preventing sharing between image collections, and suggested that the most significant obstacles were social and cultural rather than technical.[3]

2.4 Kultur acknowledges research on the various cultural issues surrounding repository take up. Strategies for increasing deposit rates need to be founded on a clear understanding of research cultures, and the working practices and motivations of academics.[4] This premise is central to Kultur's user-led methodology. In mapping out the user needs of the arts community, the project builds on studies which have investigated variations in the uses of ICT and repositories across different academic disciplines[5] as well as valuable studies that focus more specifically on the requirements of visual arts researchers.[6] Kultur also takes into account important work that has been done on the need to improve the usability and the visibility of repositories.[7]

2.5 Kultur coincides with a suite of JISC repository projects developing working models for visual and/or multimedia content, ranging from practice-led research and audio visual collections to learning objects. These include PRIMO, LIROLEM, SAFIR and Storage Space.[8]

For a fuller discussion of the projects and studies that the Kultur project builds on, please see the *Research and Project Review* completed as part of the Kultur environmental assessment.[9]

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[1] see Hey, Jessie M N, White, Wendy, Simpson, Pauline, Brown, Mark and Lucas, Natasha (2006) Fast flows the stream: tackling the workflow challenge with the University of Southampton Research Repository. At, *Open Scholarship 2006: New Challenges for Open Access Repositories*, Glasgow, UK, 18-20 October 2006. http://.soton.ac.uk/41913/.

[2] MIDESS Project Website, http://ludos.leeds.ac.uk/midess/. Outputs include a user requirements specification based on the interviews with multimedia collection providers, MIDESS, WP3 (undated) 'Project User Requirements Analysis Executive Summary'. Available from: http://ludos.leeds.ac.uk/midess/MIDESS%20workpackage%203%20User%20Requirements%20Specification.pdf, and a report on *Intellectual property issues in institutional and cross-institutional multimedia repositories*, http://ludos.leeds.ac.uk/midess/IPRreport_finalversion.pdf

[3] CLiC Project Report, http://www.jisc.ac.uk/uploaded_documents/CLIC_Report.pdf

[4] See for example Day, Michael (2003), *Prospects for institutional e-print repositories in the United Kingdom.* http://eprints-uk.rdn.ac.uk/project/docs/studies/impact/

[5] Luftschein, Sue (2005), 'The Use of Digital Art Images in Teaching and Learning in Universities', *VRA Bulletin*, 31 (3), 7-19; ACLS (2006), *Our Cultural Commonwealth: The report of the American Council of Learned Societies Commission on Cyberinfrastructure for the Humanities and Social Sciences.* http://www.acls.org/cyberinfrastructure/; Swan, Alma and Sheridan Brown (2005), *Open Access Self-Archiving: An Author Study*. http://cogprints.org/4385

[6] Cooke, Jacqueline, 'A visual arts perspective on open access institutional repositories' (Author's final draft of a paper presented at CHArt conference, 2007), http://eprints.goldsmiths.ac.uk/284; Gollifer, Sue (2006), *Overview of seminar findings for the e-science scoping study in the visual arts*. http://ahds.ac.uk/e-science/documents/Gollifer-report.pdf

[7] Recent research is summarised in McKay, Dana (2007), 'Institutional repositories and their 'other' users: usability beyond authors', *Ariadne* 52, http://www.ariadne.ac.uk/issue52/mckay/

[8] PRIMO (Practice-as-Research in Music Online) http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/primo.aspx; LIROLEM (Lincoln Repository of Learning Materials), http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/lirolem.aspx; SAFIR (Sound Archive and Film Institutional Repository), http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/safir.aspx; Storage Space, http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/falmouthstoragespace.aspx

[9] *Kultur Project Environmental Assessment: Research and Project Review* http://kultur.eprints.org/docs/Environmental%20assessment%20VS%20Feb%2008.pdf

3. Aims and Objectives

3.1 The aims and objectives agreed at the start of the project were to:

i. Establish a model of shared practice across the sector between a mature repository in the research sector and other HE institutions.

ii. Use EPrints software to set up two pilot multimedia, multifunctional repositories for the University of the Arts, London, and the University College for the Creative Arts, and make them available early on in the project to aid advocacy and provide the basis for metadata analysis.

iii. Establish an acceptable use model for rights issues related to artistic and cultural outputs which can be included in institutional repositories.

iv. Investigate a metadata, preservation, curation and access framework as an exemplar for managing material in the visual and creative arts compatible with evolving international standard and the work of a national datacentre (the Visual Arts Data Service).

v. Ensure that the repository is effective in reaching out to audiences both within Higher Education and to potential cross-domain users and assess author behaviours in order to develop policies suitable to the management, promotion and populating of the repository.

3.2 The aims and objectives changed very little during the project, with two exceptions. Instead of two pilot repositories being set up for UCA and UAL, a single joint demonstrator repository was established which was later split into separate repositories. The joint repository model had the advantage of enabling the project to focus initially on disciplinary rather than institutional requirements. It concentrated a bigger critical mass of material in one place, assisting in the advocacy process and enabling more effective testing of the repository model.

3.3 There was a slight change in the objective concerning audience engagement. As the primary user group, the focus has been on getting the repositories promoted within each of the host institutions. Consequently, less has been done to actively promote it to potential cross-domain users, such as the gallery and museum sector. This will be a key area for future development once the repositories have been launched at the institutions. However, through their representation on the steering group, cross-domain users have played an important role in the development of the repository model. Representatives from the V&A, video art archives, and cultural industries all had input on the repository's user interface and metadata workflow.

4. Methodology

4.1 Kultur has been a community response project and this methodology has been supported by a model of shared practice. Southampton has contributed technical expertise and the experience of developing and embedding its own institutional repository, while UAL, UCA and WSA have represented the needs of the arts community, with their combined strengths indicative of a very broad spectrum of creative and applied arts research activity. Through its experience of curating digital art collections for use in research and education, VADS has provided expertise in image data and metadata standards, user interfaces and IPR issues for the visual arts sector. All of the project partners have collaborated in undertaking an extensive user analysis which has informed the technical, advocacy and policy development of this project.

4.2 On the technical side, the project has extended the EPrints digital repository platform to develop a flexible arts repository structure, based on expert input from the disciplines. Southampton has acted as a development and testing hub, hosting a common demonstrator repository for the partner art institutions and WSA. This has allowed work locally to focus on advocacy and the populating process. The common demonstrator model has been populated with records of exhibitions, installations, videos, performances and artefacts, and the use of real research outputs

has enabled the project team to continually test and refine the repository model through an iterative process. From an early stage in the project, the demonstrator has been used to elicit community feedback so that various stakeholders – individual researchers, research groups, students, librarians, teaching and learning staff, research managers – have all had some input into the repository's structure and its specialist metadata.

4.3 The project addressed interoperability issues by developing a shared demonstrator repository. This was split into separate institutional repositories once the metadata and workflows were developed. The project worked with core standards, such as Dublin Core for metadata and JACS for its subject classification, but its user-driven approach meant that standards were developed and adapted in line with user needs (see the *Kultur Metadata Report*[10]). Engaging with the requirements of a cross section of the UK HE arts community was essential to the development of a scalable working model of a repository for use by this discipline. But this 'ground up' approach to standards is also due to necessity, and is indicative of the broader difficulties this community faces in addressing appropriate standards and workflows, which remain at an early stage. At the outset of the project, application profiles for non-text work were still very much under development, and the timescale of the project meant that it had to consider what was currently available. Although the Images Application Profile was completed part way through the Kultur project, work on a Moving Images Application Profile is still underway.[11]

4.4 At a cultural and policy level, user engagement and shared practice have again been central. In order to create working repositories as exemplars for the discipline area, the project has investigated the ways in which institutions, research groups and individual academics within this sector can be encouraged to deposit their work. The user analysis and usability tests identified a number of barriers and incentives for academics to deposit their material. Solutions for dealing with many of these issues have been formulated through the collaborative efforts of the specialist arts institutions and a mature repository with a history of successful advocacy, combined with technical innovations. Policy to support the management of the institutional repositories was initially developed through the project consortium, before being customised to suit the requirements of each institution, in conjunction with individual repository advisory groups.

5. Implementation

5.1 The core project team comprised a project manager and a technical EPrints officer based at Southampton, and two project officers, one based at each of the arts institutions. All project staff were in post by November 2007. The team met fortnightly, and progress was overseen by the Project Management Group, who met every 2-3 months. While the core team were responsible for technical development, advocacy, and user analysis, the larger project management group (which included representatives from VADS, the School of Electronics and Computer Science at Southampton and Library liaison staff from all institutions) played a key role in developing policy and establishing institutional infrastructures. At Southampton, fortnightly e-Prints Steering Group meetings provided the opportunity to situate the project within a broader landscape of repository development, and to exchange experience with staff involved in other projects.

5.2 Early project activity focused on an environmental assessment. Institutional profiles of UAL and UCA were written by the project officers, which scoped the range of research activity carried out at each institution, outlined the research and management structures and considered any existing provision for the management and/or promotion of digital outputs. The project manager wrote a research and projects review to identify useful outputs and lessons from previous repository and arts digitisation projects that Kultur could build upon. Although the original aim had been to incorporate user case studies into the environmental assessment, it was decided that, given their importance in leading the design of the repository, case studies should instead form part of a separate, more substantial user analysis.

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[10]*Kultur Metadata Report* (2009), http://kultur.eprints.org/documents.htm
[11] Images Application Profile, http://www.ukoln.ac.uk/repositories/digirep/index/Images_Application_Profile

5.3 While the environmental assessment was in progress, the technical officer set up an EPrints 3.1 demonstrator repository. This initially had the standard Eprints 3.1 metadata fields, with the addition of two new fields to describe the material and dimensions of artefacts. The aim was to populate the demo with as broad a range of research outputs as possible, so that a clearer picture of the format and metadata requirements for this sector could be built up, allowing the repository model to be continually tested and enhanced. The project team contacted researchers individually to request material for the demo. One 'quick win' for populating the demo was to contact individuals who already had some work available online – whether on university, on personal or gallery websites, or in the case of WSA, in Southampton's IR – to request permission to add it to the repository. The depositing was all done by the project team. Advocacy events were also used as a means of requesting material for the demo.

5.4 This early stage of populating the demo raised a number of issues. One problem concerned the scope of the project and highlighted the need to define an inclusion policy for the repository. Some researchers/research groups saw the repository as a useful service for storing large collections of material, such as special collections or research data. Although this could well be a future use of the repository, the aim of the project was to develop an IR model tailored primarily to accommodate research outputs, although it was acknowledged that the boundaries between processes, data and outputs in practice-led research are not always straightforward to define. Another issue concerning scope was that researchers did not always have digital records of exhibitions and artefacts, and some hoped that the project was going to assist in capturing outputs. This suggested that in order for an arts repository to be successfully embedded within an institution, some extra provision would have to be made to support researchers in digitising their work.

5.5 At this initial stage of the demo development, there was also a tension between the need to secure content, and the development work itself. The immediate priorities for the technical development strand of work had been the functionality and the metadata model of the repository, but it soon became clear that the aesthetics of the user interface needed some work in order to engage arts researchers early on in the project, and to encourage them to contribute material. The aesthetics proved to be a much bigger concern than originally anticipated, something continually reiterated by feedback from the user community (the steering group, user analysis and individual feedback from depositors). In response to this, early enhancements to the demo focused on developing a much more visual abstract page for end users, which offered a range of viewing options, and which prioritised previews of the work over the metadata. The project team investigated the usability of websites and arts databases familiar to the arts community and drew on these in enhancing the demo interface. For example, the list-like layout of repository pages was replaced with a grid model, and a new lightbox preview feature was incorporated into the abstract page.

5.6 During the first few months of the project, advocacy focused largely on internal audiences within the partner institutions. In November 2007 an advocacy workshop was organised to formulate strategies for engaging researchers in this sector. This brought the project team together with other representatives of the arts sector. One of the recurring themes of this event was the importance of addressing users' reservations directly and also of tailoring advocacy effectively through preliminary research into the user group and research culture.[12] This was taken on board in the decision to extend the user analysis strand of project activity. In the early stages of the project, it was publicised to various stakeholders through presentations at relevant meetings. Target audiences included Research Co-ordinators, IT and Web Teams, Libraries, Research Policy and Development Committees, and Teaching and Learning teams. A series of printed materials were also developed introducing the project to different audiences.[13]

5.7 In early 2008, a user survey was sent out to academic staff at UAL, UCA and WSA as the first stage of the user analysis. It was designed to gather information on researchers' working

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[12] For account of advocacy workshop, see
http://kultur.eprints.org/docs/workshop%20summary%2021%20nov.pdf
[13] Some of these are available in the 'Advocacy and Dissemination' section of the project website,
http://kultur.eprints.org/documents.htm

practices, the formats of their work, uses of IT and web services, and attitudes towards open access. A social surveys researcher at Southampton was commissioned to assist with the design of the questionnaire, and to advise on the methodology and analysis. Hard copies of the survey were put in staff pigeonholes and made available at all library sites, while an online version (created using Survey Monkey software) was emailed out on the relevant staff email lists (a copy of the paper survey is included in the appendices). The surveys were anonymous but respondents were invited to leave contact details if they were willing to be contacted for a follow-up one-to-one interview, which several did. The project received 199 responses, from which three broad user groups could be distinguished, as discussed in the *Kultur User Survey Analysis* (2008).[14]

5.8   Follow-up one-to-one interviews were conducted which enabled the project team to draw out more detailed case studies of individual researchers, to map the processes involved in creating and publicising research outputs, and to gain an overview of the research culture. They also provided an opportunity to elicit more detailed thoughts on the perceived uses of a creative arts institutional repository, and to gather some valuable feedback on the Kultur demonstrator repository. The interviews also turned out to be an effective means of advocating the project to individuals and of demonstrating that the project was keen to listen to and respond to user needs. An unexpected but beneficial outcome of the interviews was that many of the interviewees subsequently contributed material for the demo, and also went onto publicise the project to others. The project team interviewed 15 artists and researchers from UCA, UAL and WSA. The interviews lasted for an hour and followed a semi-structured format, as outlined in the *User Analysis Interviews Report* (2008).[15] The results enabled the project team to build up a detailed picture of the barriers and incentives for encouraging take-up of the repository, and to develop 5 use case scenarios to inform the direction of the repository development.

5.9   The user analysis highlighted that IPR was one of the most prominent concerns and potential barriers to encouraging deposit in a repository. Because of their experience in the arts digital environment, VADS were commissioned to take on additional responsibility for the IPR work package. VADS surveyed existing IP processes at each institution and investigated the application of 'fair use' for arts in a repository setting. Based on this they made a series of recommendations for a common IPR policy, including the establishment of a diligence process. At the same time, as part of the repository enhancement activity, technical solutions for protecting the copyright of a deposited work were investigated. An option for presenting non-downloadable/preview-only images and film was developed, and the automatic generation of low resolution versions of images was explored. There is a tension here between the open access drive of repositories and the development of mechanisms to limit re-use of material. However, based on community feedback, it was felt it was important to at least have least have options for such mechanisms in order to encourage take up.

5.10   Feedback on the demo during the second half of the project led to a final stage of enhancement work. Sources included a second round of feedback from the Steering Group, comments from the Repositories Support Programme, and from Research Centres. The evolving metadata schema was presented to Research Policy Groups/Research Offices for comment (see *Kultur Metadata Report*), and the demo was also presented and commented on at a number of external events targeting different audiences. These included the Open Repository 08 Conference (Apr 08), the JISC Innovation Forum (Jul 08), the ARLIS Conference (Jul 08), the Repositories Fringe Event (Aug 08), Art Libraries Conference on Art Documentation (Aug 08), and the DCC 4th International Digital Curation Conference (Dec 08). In October 2008, usability tests were conducted with a small number of testers. Candidates were selected from the three partner institutions and were all practice-based arts researchers and/or working in an Arts Library environment. They were observed carrying out tasks to locate information and depositing a

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[14] Kultur Project User Survey Report (2008),
http://kultur.eprints.org/docs/Survey%20report%20final%20Aug%2008.pdf

[15] Kultur Project User Analysis Interviews Report (2008),
http://kultur.eprints.org/docs/Interview%20analysis%20final%20Nov%2008.pdf

complex object to create a record. Advice on the methodology of the tests was drawn from a variety of sources, including the RSP, Southampton's School of Electronic and Computer Science, literature on usability and reports of previous VADS usability projects.[16] The usability script is included in the appendices. The results of the usability tests led to a redesign of the "browse" facility – a means of exploring the work of a particular artist or category of artwork. Randomly generated images representing the different categories and for the creator names were felt to be misleading, and also difficult to scan, so the layout was redesigned, with a rolling slideshow of images replacing the browse thumbnails. The usability tests also led to a series of recommendations for changing the metadata and help text phrases, as outlined in the *Kultur Metadata Report* (2009).

5.11   In the final phase of the project in early 2009, the demo repository was split into separate IRs for UCA and UAL, and responsibility for hosting them moved across to the institutions. At Southampton, resources were allocated to incorporate the new Kultur features into existing IT plans for upgrading its IR. Throughout the project, UCA and UAL had been gradually building up their institutional infrastructure for supporting the repository. In the final months, as policy increasingly needed formalising, UAL set up an Institutional Repository Advisory Group (IRAG) whose role is to sign off policy statements, including those on IPR, submission, data, metadata and content. At UCA these decisions were taken to the Research Policy and Development Committee. At Southampton, responses to IPR recommendations were decided in liaison with the e-Prints Steering Group and Legal Services. The common IPR policy recommended by VADS was tailored according to each institution's needs. At this stage, VADS also completed a series of guidance documents to be made available in the 'help' section of the repository, advising depositors on copyright issues. These were designed to present advice in a visually engaging and relevant manner. Finally, EPrints delivered training to the nominated IT staff at UAL and UCA, to enable them to customise and to provide technical support for the institutional repositories beyond the end of the project.

6. Outputs and Results

6.1 A model of a multimedia repository tailored towards research outputs in the creative and applied arts. The joint demonstrator contains 331 full-content records of exhibitions, performances, projects, websites, artefacts, installations, videos and audio works from UCA, UAL and WSA researchers. The demonstrator showcases a range of new repository features including a lightbox preview for visual and multimedia works, a rolling slideshow offering viewers a snapshot of the content, tabbed abstract pages, visual search results, extra sound and video formats, and a specialist metadata schema tailored towards creative material. For full details of these features, see the *Kultur Technical Report* (2009) (Appendix 3).

6.2 New institutional repositories for UAL – http://kultur.arts.ac.uk, and UCA – http://kultur.ucreative.arts.uk. Both are branded and integrated into the institution's user authentication system. The records from the Kultur demonstrator have been migrated to the relevant institutional repository (207 for UAL, 71 for UCA).

6.3 Software enhancements for art items will be incorporated back into Southampton's repository, e-Prints Soton, when it is upgraded to the latest version of EPrints in April 2009. In addition to enhancing the presentation of visual work from Southampton's School of Art, this will also benefit other disciplines who have produced visual and/or multimedia forms of research.

6.4 A user analysis which identifies likely barriers and incentives for encouraging repository take up in this discipline, and which outlines common use case scenarios, based on survey and interview

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[16] Steve Krug, *Don't make me think! a common sense approach to web usability* (Indianapolis: New Riders, 2000); Usability Foundation Study and Investigation of Usability in JISC Services project website, managed by the Centre for HCI Design, with various reports on usability studies tools and methodologies, http://www.jisc.ac.uk/whatwedo/programmes/presentation/usability.aspx ; AHDS Visual Arts (2005), *Online Historical Population Reports: Considerations for the User* http://www.histpop.org/project_docs/OHPR_Usability_Report.pdf; AHDS Visual Arts (2003), CIE Archeo Browser Demonstrator: Taking the User's Perspective

research. Although some of the issues identified are common across disciplines, the user analysis found that there were certain differences in the ways the arts community may use a repository. For example, their records are more likely to involve complex objects and there is demand to use the repository as a storage solution for sharing large files and works-in-progress with collaborators; a repository would also be valued as an alternative to a personal/artist's website, playing an agency role in representing creators both within the HE and the professional art environment; users seem more likely to browse related works in a visual arts rather than a text-based repository; depositors are interested in using the repository to identify opportunities for collaboration, and the shared, cross-institutional context provided by the demonstrator was valued. For more detail on the user analysis results, see *Kultur Project User Survey Report* (2008) and *Kultur Project User Interviews Report* (2008).

6.5 A metadata schema and workflow developed in response to different user needs, which strikes a balance between the institution's requirements for research management and the individual creator's need for flexibility in describing their practice. The decision-making processes behind this development are captured in the *Kultur Metadata Report* (2009)*.

6.6 A series of papers and recommendations which provide a framework for managing intellectual property of arts-based research outputs in an institutional repository setting. The first of these papers reviews the current state of IP processes at each of the partner institutions and recommends that a common IP process should be adopted across the institutions. The second paper highlighted the limitations of 'fair dealing' in a repository setting, particularly with regard to sound recording and film. The third paper makes recommendations for a establishing a diligence process as part of the institution's rights management framework. For more detail, see *IPR Work Package stage 1* (2008), *Fair Dealing in an Institutional Repository: a Report for Kultur* (2008), and *Diligence and Proposed Intellectual Property Guidelines: a Report for Kultur* (2008)[17]

6.7 A set of user-friendly guidance documents advising depositors on copyright clearance. These include a series of scenarios involving content familiar to arts based academics, and a copyright factsheet and decision-making flowchart that are widely transferable across disciplines.

7. Outcomes

7.1 Outcomes for the project partners

The creation of two new repositories for UAL and UCA will enable these institutions to retain, manage and promote their research outputs, increasing visibility and impact. The repositories will also facilitate the re-use of deposited materials for new teaching and learning. Enhancements to Southampton's institutional repository have increased WSA's engagement with the repository. Beyond this, the project has also promoted the potential of the repository to manage a much broader range of non-text research outputs which will benefit those working in other disciplines.

7.2 Outcomes for EPrints

The changes made to EPrints to implement Kultur have been developed as an "add-on" package. This approach has been adopted to avoid problems with the upgrade path in EPrints. These add-ons have been documented as part of a separate technical document (see Appendices) and will be released on files.eprints.org (the add-on repository for EPrints). The user interface development done during Kultur will also inform the future appearance of EPrints, particularly in relation to the possible use of a lightbox mechanism and display of documents.

7.3 Broader outcomes for the creative arts community

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[17] *IPR Work Package stage 1* (2008), *Fair Dealing in an Institutional Repository: a Report for Kultur* (2008), and *Diligence and Proposed Intellectual Property Guidelines: a Report for Kultur* (2008)
http://kultur.eprints.org/documents.htm

The longer term impact of the project on the research community will only become clear once the repositories have been launched and their use by researchers has been observed. If the repository model is successfully transferred to further creative arts institutions, then it will have made important steps in developing the information infrastructure for practice-based research. The processes involved in developing repositories for this community has led to certain advances in knowledge. It has generated a greater understanding of what actually constitutes a "research output" within this community of practice, and how they are used and re-used. It has explored the rights issues that apply to creative arts research within a digital environment and developed a framework for managing these issues. It has led to a greater understanding of the application of metadata to digital objects in art and design, and how this metadata may be re-purposed for the needs of the institution. The project has encouraged the institutions to consider their responsibilities towards the preservation of research outputs, and to make steps towards a preservation policy that would be relevant to other arts institutions.

8 Conclusions

8.1 Researchers in creative arts disciplines have distinctive requirements. In order to support the sharing, promotion and re-use of their work or representations of their work, critical success factors are:

   i.   A highly visual look and feel to a repository;

   ii.   A trusted environment with clear institutional policies and frameworks to manage complex non-textual copyright and IPR issues;

   iii. Development of standards based metadata that has the capacity to support the flexible ways in which researchers need to describe their work and link related works.

8.2 The repositories can play a role in supporting networking within the creative arts community. The project had strong feedback that researchers liked the shared demonstrator and were more inclined to browse within the shared repository environment.

8.3 As repositories encompass a broader range of media and IPR and copyright issues become more complex, it is important to take a whole institution approach to managing these issues. Links between academic and support services are essential including institutional lawyers and research support activity. There is a need for IPR and copyright support to develop from internal monitoring models to outward facing services for academic staff and students.

8.4 Metadata development to support the full range of creative arts activity is at an early stage. It was clear that engagement of researchers with the metadata development was critical. The approach needed to be relevant to a range of creative arts and not pigeon-hole works inappropriately, thus alienating the creators. There is a tension between flexibility and the need for metadata to conform to standards. There are also complex relationships between object level descriptors and collection level descriptors as well as relationships between related objects. This is an area for ongoing development.

8.5 Creative arts students produce original work at an early stage of their studies and work for final degree shows may well coincide with a need to promote this work to prospective employers in the arts community and other sectors. The project engaged with students and there is potential to further explore how arts repositories can develop to support the student and research communities.

9. Implications

9.1 Institutions with existing institutional repositories will be able to build in the features developed during the project to enhance their repositories, using the information in the technical report and

the code released on http://files.eprints.org The features outlined in the report are also relevant and transferable to the non-EPrints repository communities.

9.2 The outputs made available by the project will also be usable to institutions thinking about setting up a repository. The various project reports capture the stages and decision making processes involved in setting up a creative arts repository, from the metadata design to decisions about hardware.

9.3 Further technical developments could usefully include:

- Integrating the model with other JISC projects, for example with SNEEP, to develop the tagging capability of an arts repository.

- Development of artist identification and profiles in order to enhance the capacity of the repository as a tool for portfolio-style representation.

- Development of file management– the collection of large size content from non-expert users.

- There is scope for investigating the relationship between IR and institutional reporting needs (both in REF terms and for general institutional research management)

9.4 In order to carry the project work further from a cultural perspective, work could usefully focus on establishing a community of practice with the aim of increasing repository engagement and deposit rates across the UK arts sector. This would build on the successful shared practice methodology of the Kultur project, and also develop researcher enthusiasm for cross-institutional links uncovered as part of the project user analysis. Future cultural development of the project could also build upon the initial links made with museum, gallery and other cross-domain users.

10. References

ACLS (2006), *Our Cultural Commonwealth: The report of the American Council of Learned Societies Commission on Cyberinfrastructure for the Humanities and Social Sciences.*
http://www.acls.org/cyberinfrastructure/

AHDS Visual Arts (2005), *Online Historical Population Reports: Considerations for the User*,
http://www.histpop.org/project_docs/OHPR_Usability_Report.pdf

AHDS Visual Arts (2005), CIE Archeo Browser Demonstrator: Taking the User's Perspective.

Day, Michael (2003), *Prospects for Institutional E-print Repositories in the United Kingdom.*
http://eprints-uk.rdn.ac.uk/project/docs/studies/impact/

Usability Foundation Study and Investigation of Usability in JISC Services Project Website, managed by the Centre for HCI Design, with various reports on usability studies tools and methodologies
http://www.jisc.ac.uk/whatwedo/programmes/presentation/usability.aspx

CLiC Project Report, http://www.jisc.ac.uk/uploaded_documents/CLIC_Report.pdf

Cooke, Jacqueline, 'A visual arts perspective on open access institutional repositories' (Author's final draft of a paper presented at CHArt conference, 2007), http://eprints.goldsmiths.ac.uk/284

Gollifer, Sue (2006), *Overview of Seminar Findings for the E-science Scoping Study in the Visual Arts*.
http://ahds.ac.uk/e-science/documents/Gollifer-report.pdf

Hey, Jessie M N, White, Wendy, Simpson, Pauline, Brown, Mark and Lucas, Natasha (2006) Fast flows the stream: tackling the workflow challenge with the University of Southampton Research Repository. At, *Open Scholarship 2006: New Challenges for Open Access Repositories*, Glasgow, UK, 18-20 October 2006. http://.soton.ac.uk/41913/

Images Application Profile Website,
http://www.ukoln.ac.uk/repositories/digirep/index/Images_Application_Profile

Steve Krug (2000), *Don't Make me Think! A Common Sense Approach to Web Usability,* Indianapolis: New Riders.

Kultur Project Website, reports and documents
http://kultur.eprints.org/documents.htm

LIROLEM (Lincoln Repository of Learning Materials) Project,
http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/lirolem.aspx;

Luftschein, Sue (2005), 'The Use of Digital Art Images in Teaching and Learning in Universities', *VRA Bulletin*, 31 (3), 7-19.

McKay, Dana (2007), 'Institutional repositories and their 'other' users: usability beyond authors', *Ariadne,* 52, http://www.ariadne.ac.uk/issue52/mckay/

MIDESS Project Website, http://ludos.leeds.ac.uk/midess/.

PRIMO (Practice-as-Research in Music Online) Project,
http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/primo.aspx

SAFIR (Sound Archive and Film Institutional Repository) Project,
http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/safir.aspx

Storage Space Project,
http://www.jisc.ac.uk/whatwedo/programmes/reppres/sue/falmouthstoragespace.aspx

Swan, Alma and Sheridan Brown (2005), *Open Access Self-Archiving: An Author Study*.
http://cogprints.org/4385

12. Appendices

Appendix 1: User Survey Questionnaire

University of Southampton

university college for the creative arts at canterbury, epsom, farnham maidstone and rochester

University of the Arts London

YOUR VIEWS ON ARCHIVING CREATIVE ARTS MATERIAL

SECTION B: ABOUT YOUR RESEARCH

A1 **In your current position, are you involved in the production of original art, or is your work entirely theory-led?**

please tick one box only

I am involved in producing original art ☐ 1   PLEASE GO TO A2

My work is entirely theory-led ☐ 2   PLEASE GO TO A3

A2 **WHAT KIND(S) OF WORK DO YOU PRODUCE?** (PLEASE TICK ALL THAT APPLY)

a) Animation ☐ 1		k) Painting ☐ 11	
b) Book art ☐ 2		l) Performance ☐ 12	
c) Ceramics ☐ 3		m) Photography ☐ 13	
d) Conservation work ☐ 4		n) Printmaking ☐ 14	
e) Design ☐ 5		o) Public art ☐ 15	
f) Digital art ☐ 6		p) Sculpture ☐ 16	
g) Fashion ☐ 7		q) Site-specific works ☐ 17	
h) Film ☐ 8		r) Sound art ☐ 18	
i) Illustration ☐ 9		s) Textiles ☐ 19	
j) Installations ☐ 10		t) Video ☐ 20	

u) Other (PLEASE WRITE IN)

A3 **Is your work produced…**

… collaboratively, ☐ 1

independently, or ☐ 2

a combination of both? ☐ 3

A4 **i) In the first column below, please tick all the means that you have <u>ever</u> used to make your work public.**

ii) For each means that you have ticked at part (i), please tick one box to indicate how many times you have used it in the last 12 months.

	(i) Ever used	(ii) How many times in last 12 months?				
		Once (1)	Twice (2)	3 times (3)	4 + times (4)	Not at all (5)
a) I have never made work public	☐ 1 → PLEASE GO TO A6					
b) Exhibitions or shows	☐ 2	☐	☐	☐	☐	☐
c) Performances	☐ 3	☐	☐	☐	☐	☐
d) Conferences or workshops	☐ 4	☐	☐	☐	☐	☐
e) Publication	☐ 5	☐	☐	☐	☐	☐
f) Internet	☐ 6	☐	☐	☐	☐	☐
g) Other (PLEASE WRITE IN THE BOX)	☐ 7	☐	☐	☐	☐	☐

A5 **How often, if ever, do you …**

please tick one box only for each question

	Always (1)	Sometimes (2)	Never (3)
a) … keep records of where and how your work has been made public?	☐	☐	☐
b) …keep records of others' responses to your work?	☐	☐	☐

A6   **Where is your work stored?**

PLEASE TICK ALL THAT APPLY

a) At home ..... ☐ 1

b) At work ..... ☐ 2

c) In a gallery ..... ☐ 3

d) On computer ..... ☐ 4

e) Other (PLEASE WRITE IN THE BOX)

A7   **How would you rate your level of knowledge of copyright policy, and its relation to the work you are involved in producing?**

please tick one box only

Very high	High	Moderate	Low
☐ 1	☐ 2	☐ 3	☐ 4

SECTION B: your use of i.t.

B1   **How do you feel about working with the following media?**

PLEASE TICK one box for each medium

	I use it, and feel comfortable with it (1)	I use it, but do not feel comfortable with it (2)	I don't use it, but I would like to (3)	I am not interested in it / never heard of it (4)
a) Email	☐	☐	☐	☐
b) Uploading / downloading files from the Internet	☐	☐	☐	☐
c) Internet search engines	☐	☐	☐	☐
d) Online databases, e.g. JSTOR, ARTbibliographies modern	☐	☐	☐	☐
e) Podcasts	☐	☐	☐	☐
f) Library catalogues	☐	☐	☐	☐
g) Blackboard	☐	☐	☐	☐

B2 **Which, if any, online sources do you use to find out about the work of other creative practitioners?**

PLEASE TICK ALL THAT APPLY

a ☐ 1

b ☐ 2

c ☐ 3

d ☐ 4

Other (PLEASE WRITE IN THE BOX)

B3 **ARE YOU INVOLVED IN CREATING ANY DIGITAL ARTWORKS (EITHER 'BORN DIGITAL' OR IN CREATING DIGITAL VERSIONS OF NON-DIGITAL WORK)?**

Yes....... ☐ 1   PLEASE GO TO B4

No....... ☐ 2   PLEASE GO TO SECTION C

B4 **What type of computer do you use in the creation of digital work?**

PLEASE TICK ALL THAT APPLY

a) Mac   b) PC

☐ 1   ☐ 2

B5 **Which software do you use in the creation of digital work?**

PLEASE TICK ALL THAT APPLY

a) Adobe Audition ☐ 1		i) Corel Photo-Paint ☐ 9	
b) Adobe Illustrator ☐ 2		j) Dreamweaver ☐ 10	
c) Adobe Photoshop ☐ 3		k) iMovie ☐ 11	
d) Apple Final Cut Pro ☐ 4		l) Microsoft Office (incl PowerPoint) ☐ 12	
e) Audacity ☐ 5		m) QarkXpress ☐ 13	
f) Avid Media Composer ☐ 6		n) Sony Sound Forge ☐ 14	
g) Avid Xpress Pro ☐ 7		o) Windows Movie Maker ☐ 15	

h) Computer Aided Design (CAD) ☐ 8

p) Other (PLEASE WRITE IN) _____

B6 **And which file formats do you use in the creation of digital work?**
PLEASE TICK ALL THAT APPLY

a) AIFF ☐ 1   f) MOV ☐ 6   j) RAW ☐ 10

b) BMP ☐ 2   g) MP3 ☐ 7   k) TIFF ☐ 11

c) GIF ☐ 3   h) MPEG ☐ 8   l) WAV ☐ 12

d) HTML ☐ 4   i) PDF ☐ 9   m) WMV ☐ 13

e) JPEG ☐ 5   n) Other (WRITE IN) _____

B7 **How do you store your digital work?**
PLEASE TICK ALL THAT APPLY

a) Hard drive (personal computer) ☐ 1

b) Hard drive (institutional computer) ☐ 2

c) External hard drive or USB device ☐ 3

d) Burn onto CD/DVD ☐ 4

Other ☐ 5

B8 **At what point would you normally create digital versions of non-digital works?**
please tick one box only

When work is complete .... ☐ 1

Throughout working process .... ☐ 2

Other (PLEASE WRITE IN THE BOX) .....

_____

SECTION C: online access to arts material

This section is about your thoughts on making your work publicly available via a repository. A repository is an open-access archive, which collects, preserves, and manages digital material.

C1 **Have you ever used a digital repository to access creative and applied arts material?**

Yes ☐ 1

No ☐ 2

Don't know ☐ 3

C2 **Is any of your own work currently available online? If so, where?**

PLEASE TICK ALL THAT APPLY

a) None of my work is available online ☐ 1

b) On gallery website(s) ☐ 2

c) On personal website(s) ☐ 3

d) On university website(s) ☐ 4

e) On social networking site(s), e.g. Facebook ☐ 5

f) In online journal(s) ☐ 6

g) In subject repository/ies, e.g. AHDS ☐ 7

h) Southampton's institutional repository (e-Prints Soton) ☐ 8

i) Other (PLEASE WRITE IN THE BOX)

If you ticked 'h) Southampton's institutional repository (e-Prints Soton)' at C2, please answer questions C3 – C5.
Others please go to question C6.

C3 **What problems, if any, have you experienced when depositing work in e-Prints Soton?**

PLEASE TICK ALL THAT APPLY

a) No problems ☐ 1

b) Too time consuming ☐ 2

c) Not sure what all the metadata / catalogue fields referred to ☐ 3

d) I didn't have all the information it asked for ☐ 4

e) Understanding copyright policies ☐ 5

f) Uploading files was difficult ☐ 6

g) Other (PLEASE WRITE IN THE BOX)

h) Don't know – someone else did it for me ☐ 7

i) Can't remember ☐ 8

C4 **In what way(s), if at all, could e-Prints be improved to make you happier with the way your work is displayed?**

please write in the box

C5 **What additional fields, if any, would you like to see in e-Prints that would help you to describe your work more effectively?**

please write in the box

Everyone please answer question C6 onwards.

C6 **What reservations, if any, do you have about putting your work online?**

PLEASE TICK ALL THAT APPLY

a) No reservations ☐ 1

b) Uncertainties about copyright ownership ☐ 2

c) Uncertainty about how my work might be used by others ☐ 3

d) Lack of control over the design and content of the rest of the website ☐ 4

e) I don't have the technical skills to do it ☐ 5

f) I don't have digital versions of my work ☐ 6

g) Other (PLEASE WRITE IN THE BOX)

C7 **Here is a list of potential benefits of having your work in an online repository. For each one, please indicate how important it is to you personally.**

PLEASE TICK one box for each potential benefit

	Very important (1)	Fairly important (2)	Not very important (3)	Not at all important (4)
a) Making individual works more visible to a wider audience	☐	☐	☐	☐
b) Raising my research profile	☐	☐	☐	☐
c) Enabling me to track my own research development	☐	☐	☐	☐
d) Developing/strengthening links with other practitioners and communities	☐	☐	☐	☐
e) Helping me to re-use my research for teaching purposes	☐	☐	☐	☐
f) Good way to store/preserve my work	☐	☐	☐	☐

C8 **Apart from those listed in the previous question, what other potential benefits, if any, can you see to having your work online?**

please write in the box

C9 **Here is a list of 'export' functions and additional features that could be built into an institutional repository. Which, if any, would you like an online repository to be able to offer you?**

PLEASE TICK ALL THAT APPLY

a) A direct link to your online staff profile ☐ 1

b) Statistics showing you how many times your work has been viewed ☐ 2

c) Co-ordination with your teaching materials in Blackboard ☐ 3

d) Links between different versions, installations or performances of a work ☐ 4

e) The ability to track the different exhibitions of which an artwork has been part ☐ 5

f) Links to critical responses to your work (articles, reviews etc) ☐ 6

g) None of these ☐ 7

h) Don't know ☐ 8

C10 **Apart from those listed in the previous question, what other 'export' functions or features, if any, would you like an online repository to be able to offer you?**

please write in the box

SECTION D: ABOUT YOU

D1 **Where are you currently based?**

please tick one box only

University of the Arts, London:	University College for the Creative Arts:	
Camberwell College ☐ 1	Canterbury ☐ 7	**Winchester School of Art** ☐ 12
Central St Martins College ☐ 2	Epsom ☐ 8	
Chelsea College ☐ 3	Farnham ☐ 9	
London College of Communication ☐ 4	Maidstone ☐ 10	
London College of Fashion ☐ 5	Rochester ☐ 11	
Wimbledon College ☐ 6		

D2 **Which School or Department are you part of?**

please write in the box

D3 **Which research centres, units or clusters (if any) are you a member of?**

please write in the box. If none, please write in 'none'.

D4 **Which of the following best describes your role?**

PLEASE TICK one box only

Professor / reader / senior lecturer ☐ 1	Teaching Assistant ☐ 4	
Lecturer ☐ 2	Research Assistant ☐ 5	
Research Fellow ☐ 3	Postgraduate ☐ 6	
	Other ☐ 7	

D5   **THANK YOU FOR YOUR TIME. WE WOULD LIKE TO HEAR MORE ABOUT HOW WE COULD DESIGN THE REPOSITORY IN A WAY THAT IS MOST BENEFICIAL TO YOU AND YOUR RESEARCH. WOULD YOU BE WILLING FOR SOMEONE FROM THE PROJECT TO FOLLOW UP THIS QUESTIONNAIRE WITH A FACE-TO-FACE OR TELEPHONE INTERVIEW?**

No   Yes

☐ 1   ☐ 2

⬇

Name: _____

Telephone number: _____

Email address: _____

D6   **AND FINALLY, MAY WE HAVE YOUR PERMISSION FOR THE KULTUR PROJECT TO USE YOUR RESPONSES ANONYMOUSLY FOR A USER PROFILE REPORT?**

No   ☐ 1

Yes   ☐ 2

THANK YOU FOR TAKING PART IN THIS SURVEY

Return instructions here

Appendix 2: Usability Scripts

Usability Test: Kultur Demo Repository

Part 1: Using the repository to access items

The first section of the test focuses on the processes for finding and viewing creative arts material in the Kultur demonstrator repository

Homepage

On your screen is the homepage of the Kultur repository. In the middle of the homepage is a changing display of samples from the collection, and to the right of the screen there are various options for browsing the collection. Underneath these options are thumbnails of the last three works that were added to the repository.

1. Click on any one of the sample works. Who is it by?

2. Return to the homepage.

Is it clear from the homepage what the repository is about?

Abstract pages

3. Click on 'browse collection by … creator' (this is in the column on the right hand side of the homepage). You will see a list of all the creators who have work in the repository. Click on the creator 'Steven Ball', and then click on the title of his work 'Direct Language Project', to take you to the record for this work. This page is called the abstract page.

4. What other information about the work can you find on this page?

5. View one of the videos.

6. Move to the next preview

7. Maximise the preview to watch it in 'full screen' mode

8. Return to the homepage.

Browsing and searching

9. From the homepage, click on each of the 'browse collection by…' options in turn (the options are: year, KULTUR partner, category, creator, projects).

Is it clear what each of the browse options refers to? Do you find any of the browse views easier to use than others?

10. Look again at the 'browse collection by… category'.
Are these the kind of categories that you would expect to find in a resource for creative and applied arts material? Is the terminology accurate and current?

11. In the top right hand corner of the screen you will see a search box. Type in a theme or keyword of your choice and click 'search'. How many results are returned? If your search brings up no results, try another theme or keyword.
On the search results page, is it clear how the results are ordered?

12. Change the order of the results so that they are listed in alphabetical order of title.

13. Use the search box to find works related to the theme of "security". You should see four results. Click on the top record, entitled "Bike off secure bike parking stands".
Is it clear how you would access all of the documents here, included those under 'restricted access'?

14. Click on 'advanced search', which you can find just below the simple search box. Use this function to find all of the works completed in 2008 which were funded by the AHRC. You should see 5 records listed.

15. Based on your knowledge of the system so far, find a record of a 2006 installation by Emmanuelle Waeckerle entitled 'Hole Story'.

General impressions

Part 2: Depositing work in the repository

This aim of this section is to test the process for depositing works in the repository. The information below and the documents on the USB stick provided all relate to an event called 'Sound as Language'. Use these sources to create a record for this event.

1. To start the process, you first need to click on 'login' at the top left of the screen. Use 'visitor' as your username and 'kultur' as the password.

2. Click on 'New item', and select 'Art/design item'.

3. Upload the documents provided, filling in any information you have about each one in the 'Title and/or description' field. When you have finished click 'next'

4. Under the 'Art/design categories', select 'Exhibition/show' and 'Sound Art' and click next

5. Use the 'Background information' provided below to fill in the rest of the fields asked for. Use the help text if you are unsure what any of the fields refer to, and leave any fields blank that you do not have information for. When you complete each screen, click on 'next' to take you to the next screen.

6. When you get to the final screen (depositing screen), click on 'Deposit item now'. If you click on the "summary" tab, you will be able to see how the record looks in the repository.

Background information for test record

Henri Chopin – **Sound As Language,** ICA London, 2005, 15th Jan – 15th Feb

An exhibition exploring the sound and visual poems of Henri Chopin. The works exhibited represent the apex of Chopin's activities spanning over a period of forty years, bringing together his influential research in the fields of voice recording techniques, sound spatialisation and publishing.

Sound as Language was funded by Institut de Francais and curated by Tina Brickstaff. Other exhibitors included Bob Cobbing, Jaap Blonk, Dylan Nyoukis, William S Burroughs.

Files to upload
(these can be found in the folder 'Test item to deposit'):

Images:
1. Henri Chopin in Performance (photograph, 1989)
2. Henri Chopin, 'Typewriter Poem' (1977)

Audio:
'Extreme' (1975)

Video:
'Henri Chopin at Home' (2004)

Text:
Chopin, 'Why I Am The Author Of Sound Poetry and Free Poetry' (1967)

Website: http://ubu.com/sound/chopin.html

Appendix 3: *Kultur Technical Report*

Kultur Technical Report

This report describes the enhancements that have been made to the EPrints digital repository platform to support the requirements and goals of the Kultur project and the wider creative arts community.

Each enhancement is briefly described, with technical details provided for repository developers.

Technical details:

For EPrints technical documentation visit http://wiki.eprints.org/w/Documentation

1   Repository homepage

Problem: The default repository homepage is very plain and not in keeping with a creative arts institution.

Solution: Take advantage of the wealth of visual material in the repository to enhance the homepage.

Figure 1: UAL Research Online front page, with slide show and latest items

1.1   Slide Show

Showcase previews of selected repository content (Figure 1). The preview image changes automatically every 10 seconds, cycling through the selected content. A

thumbnail strip allows visitors to go back to a previously displayed image or navigate through the slide show manually. Clicking on the preview image takes the visitor directly to the record page for that item.

> **Technical details:**
>
> To add a slideshow to a page:
> ```
> <div id="slideshow"></div>
> <epc:print expr="random_documents('list','preview',6)" />
> ```
>
> This chooses 6 previews at random each time the frontpage is regenerated. Schedule `bin/generate_static` hourly to generate a new slide show every hour.
>
> **Configuration files:**
>
> `cfg/cfg.d/random_documents.pl` - implements `random_documents( TYPE, SIZE, COLS, ROWS )` where TYPE is one of "list" or "table" and SIZE is one of "small", "medium", "preview" or "lightbox".
>
> `cfg/static/javascript/auto/90_local.js` - converts slideshow div into rolling slideshow (uses scriptaculous library)

1.2   Latest Items

Displays information about the 3 most recent deposits, including 3 thumbnails (Figure 1).

> **Technical details:**
>
> To add latest items to a page:
> ```
> <epc:print expr="kultur_latest(3)" />
> ```
>
> This inserts the 3 most recent items each time the frontpage is regenerated. Schedule `bin/generate_static` hourly to update the list every hour.
>
> **Configuration files:**
>
> `cfg/cfg.d/random_documents.pl` - implements `kultur_latest( MAX )` where MAX is the maximum number of items to show.

2   Searching

Problem: Search results include thumbnail previews for all files. Many deposits have a large number of multimedia files attached so the search results page is swamped with thumbnails.
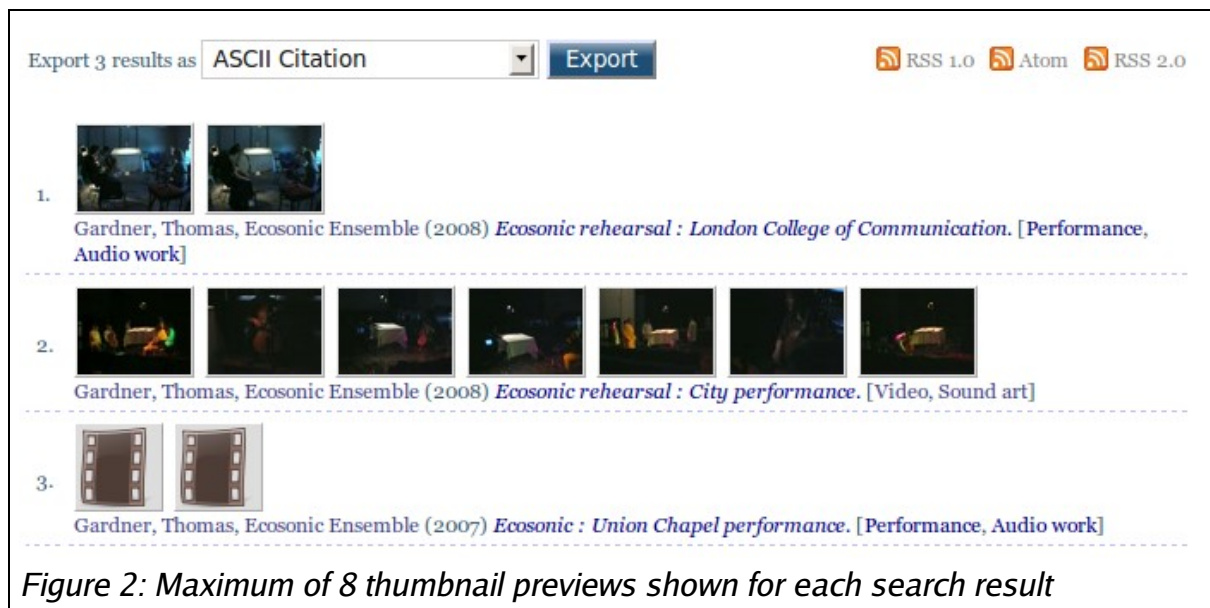
Solution: Limit the number of thumbnails shown.

Figure 2: Maximum of 8 thumbnail previews shown for each search result

Limit number of thumbnails displayed to 8 (Figure 2). If there are more thumbnails than can be shown, this is indicated, eg. "+ 10 others".

Configuration files:

`cfg/cfg.d/eprint_fields.pl` - overrides the default thumbnail rendering method.

---

3   Browsing

Problem: Navigating the browse view menus and sub-menus can be tricky.

Solution: Provide a "bread crumb" trail to aid orientation.

Configuration files:

`cfg/lang/en/phrases/zz-kultur.xml` - overrides default view titles
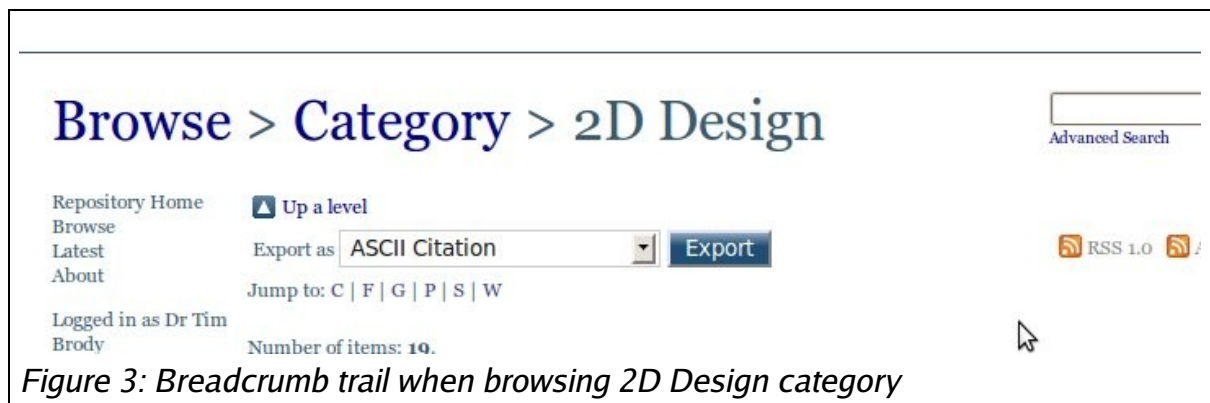

Figure 3: Breadcrumb trail when browsing 2D Design category
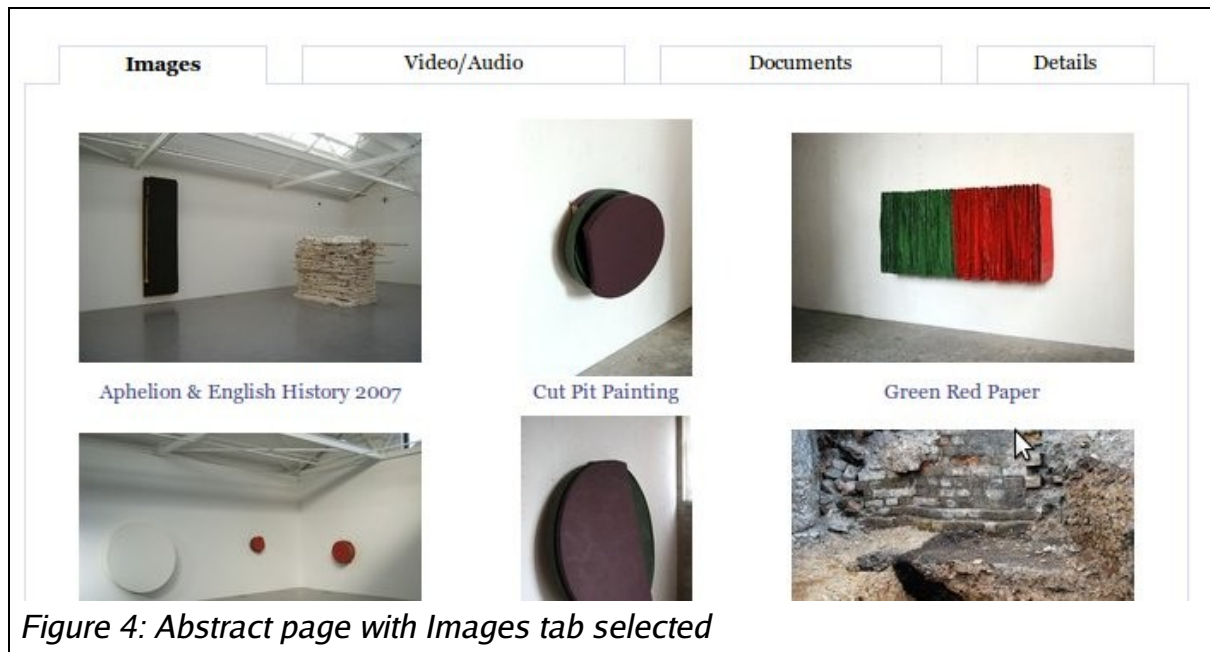
4   Abstract pages

Problem: The default abstract page focuses on metadata rather than content. In a creative arts repository the content should be the focus.

Solution: Focus on content first, using previews whenever possible.

4.1   Tabs

Split the abstract page into a series of "tabs":

- Images - shows thumbnail previews of image files (Figure 4)

- Video/Audio - shows thumbnail previews of video files (Figure 6), and lists audio files

- Documents - shows thumbnail previews of text files

- Restricted - lists restricted (non Open Access) files

- Details - lists metadata (Figure 5)

Figure 4: Abstract page with Images tab selected

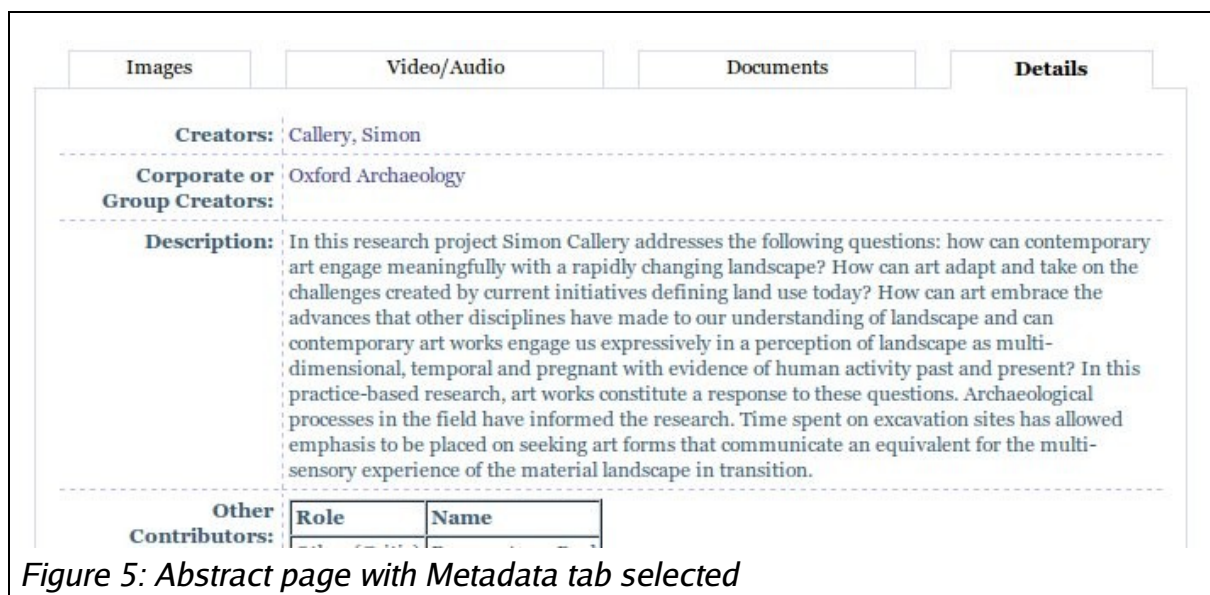**Technical details:**

The core EPrints API provides methods for rendering tabs, with tab switching handled by Javascript libraries.

Configuration files:

`cfg/cfg.d/eprint_render.pl` - generates tabbed abstract pages

Figure 5: Abstract page with Metadata tab selected

4.2   Video Thumbnails

Generate thumbnails of video files instead of using a generic video icon (Figure 6).

> **Technical details:**
>
> ffmpeg is used to extract a single JPEG frame from a video. First try grabbing a frame 5 seconds into the video; if that fails grab the first frame.
>
> **Configuration files:**
>
> `cfg/plugins/EPrints/Plugin/Convert/Local/ThumbnailVideos.pm` - **generate still images from videos.**

Figure 6: Abstract page with Video/Audio tab selected, showing 2 video thumbnails
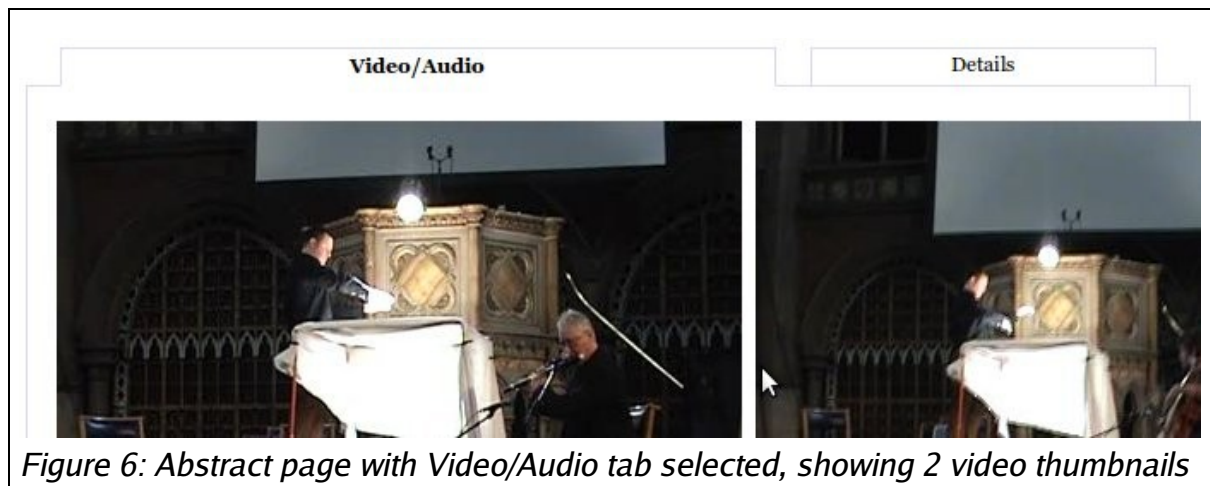
4.3   Variable size thumbnails

Vary the size of the preview thumbnail according to the number of files. Items with a single file will have a large preview (Figure 7). Items with several files will have smaller previews (Figure 8). The caption shown beneath each thumbnail will also be reduced in length according - hovering over the thumbnail will show the full caption.
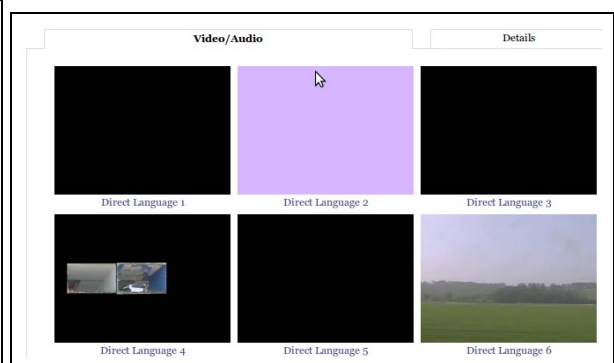
Figure 7: Large preview for single image
file

Figure 8: Smaller previews for several
video files

Technical details:

There are four thumbnail sizes available: small, medium, preview and lightbox (Table 1).
These are rendered 7, 3, 2 and 1 images per row respectively.

Configuration files:

`cfg/cfg.d/eprint_render.pl` - select appropriate thumbnail size

Name	Width	Height
small	66	50
medium	200	150
preview	400	300
lightbox	640	480

Table 1: Thumbnail preview sizes (pixels)

4.4 Thumbnail cropping

Provide a consistent thumbnail layout by resizing thumbnails to the same dimensions
(Table 2).

Original	Medium (padded)	Small (cropped)

Table 2: Using padding and cropping to generate thumbnails of a consistent size

Technical details:

The Image Magick "convert" command is used to generate small (cropped) thumbnails:
```
system($convert, "-strip", "-colorspace", "RGB",
"-thumbnail","$geom^", "-gravity", "center", "-extent", $geom,
$src."[0]", $dir . '/' . $fn);
```

And medium (padded) thumbnails:
```
system($convert, "-strip", "-colorspace", "RGB", "-bordercolor",
"white", "-border", "1x1", "-trim", "+repage", "-size", "$geom",
"-thumbnail","$geom>", "-background", "white", "-gravity", "center",
"-extent", $geom, $src."[0]", $dir . '/' . $fn);
```

Configuration files:

`cfg/plugins/EPrints/Plugin/Convert/Local/*` - generate thumbnails

4.5 PDF Images

A PDF file may contain visual content (such as a poster) or textual content (such as a journal article). By default PDF files are treated as text. A *PDF Image* format was added to identify PDF files with visual content so that they will be treated as an image and listed on the Images tab.

5   Viewing

Problem: Large multimedia files can be difficult to display and/or download. Images open full size in the browser window, and a special player may be required to play audio/video files.

Solution: Lightbox-style previews for all multimedia files.

Figure 9: Lightbox preview of an image file

Clicking on the thumbnail of a multimedia file activates the lightbox preview. The page content is dimmed and a larger preview of the file is displayed in the center of the page (Figure 9). The visitor can navigate through the lightbox previews using next/back links. The caption, license, copyright statement and link to download the original file are displayed beneath the preview.

In the case of video and audio files, a low resolution version can be played directly from the lightbox preview (Figure 10).

Technical details:

Lightbox implementation is based on the Lightbox2 library http://www.lokeshdhakar.com/

ffmpeg is used to generate Flash previews of video files and mp3 previews of audio files. Schedule `bin/generate_video_previews` nightly to generate video and audio previews.
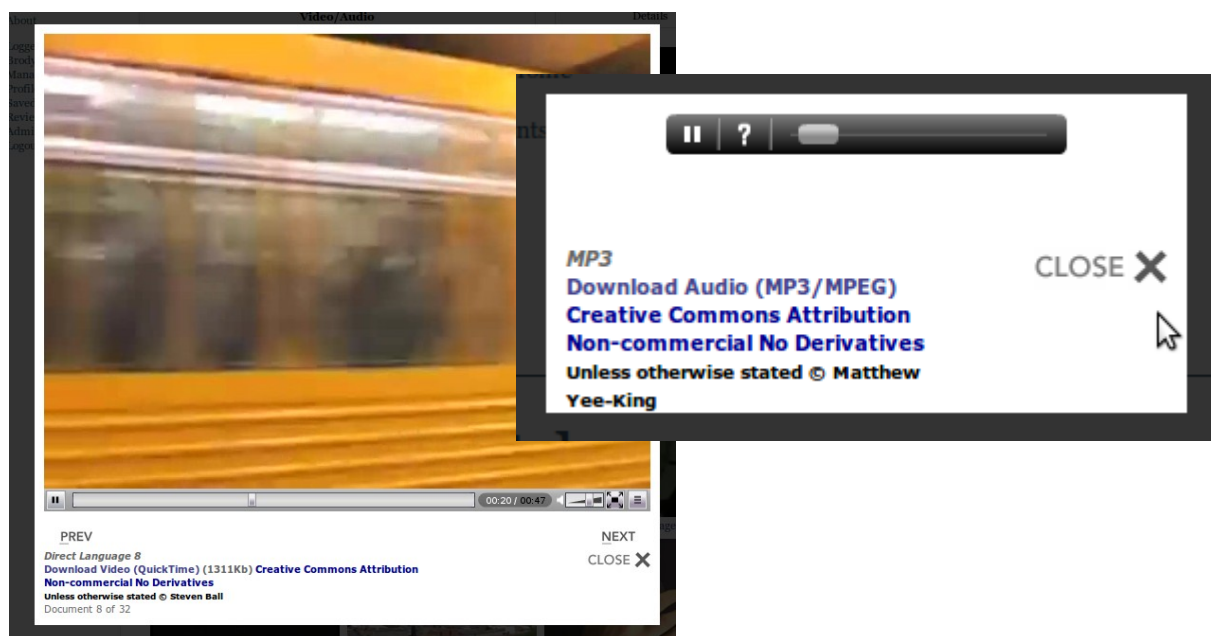
Flash video previews are played back in FlowPlayer http://flowplayer.org/

MP3 previews are played back using MP3 Player http://flash-mp3-player.net/

Configuration files:

`cfg/static/javascript/auto/lightbox.js` - Javascript library

`cfg/static/style/images/lightbox/` - images used by lightbox

`cfg/static/FlowPlayerClassic.swf`,`cfg/static/player_mp3.swf` - players

---

Figure 10: Playing video (left) and audio (right) previews

6   Depositing

Problem: The default deposit workflow is geared towards text-based research outputs such as journal articles and books.

Solution: Adjust the workflow to suit creative arts deposits.

6.1   Preview of uploaded files

Figure 11: Thumbnail preview of uploaded documents shown on all deposit workflow stages
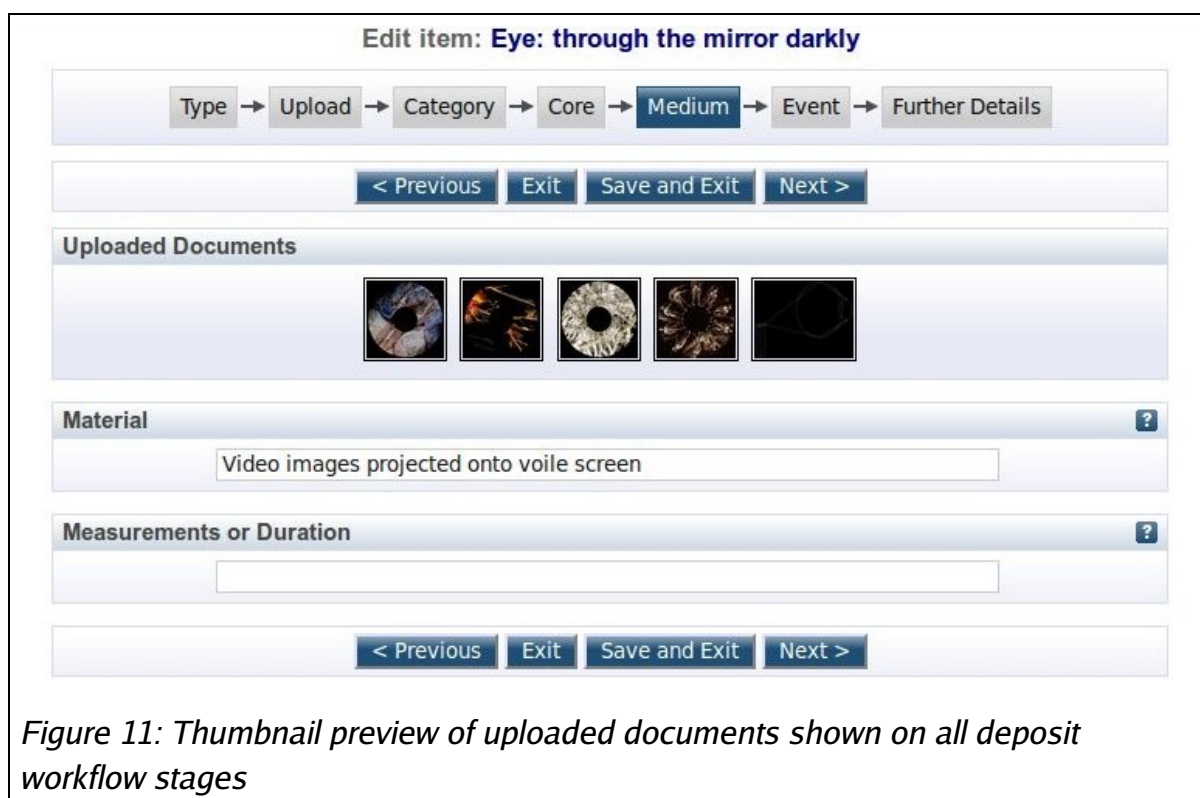
Show preview of the uploaded files on each stage of the deposit workflow (Figure 11). This provides an *aide-memoir* to the depositor as they enter metadata about the files.

Technical details:

To add the preview to a workflow stage:

```
<stage name="category">
    <component type="KulturRenderDocuments"></component>
    ...
</stage>
```

Configuration files:

`cfg/workflows/eprint/default.xml` - deposit workflow

`cfg/plugins/EPrints/Plugin/InputForm/Component/KulturRenderDocuments.pm`

6.2   Metadata

See separate Metadata Report.

6.3   Additional audio and video formats

Support additional audio and video files (Tables 3 and 4).

MIME Type	Description	File Extension(s)
audio/ac3	Audio (AC3)	*.ac3
audio/mpeg	Audio (MP3/MPEG)	*.mp3, *.m4a
audio/x-wav	Audio (Wav)	*.wav
image/vnd.adobe.photoshop	Image (Photoshop)	*.psd
video/ogg	Video (Theora/Ogg)	*.ogv
video/x-ms-wmv	Video (Windows Media)	*.wmv
video/x-flv	Video (Flash)	*.flv

Table 3: Additional audio and video formats

Technical details:

To add a new format:

Add the mime-type to `cfg/namedsets/document`

Add a phrase for the format to `cfg/lang/en/phrases/document_formats.xml`

Add a file-extension match to the `guess_doc_type()` method in `cfg/cfg.d/document_upload.pl`

Add support for the new format to thumbnailing plugins (ffmpeg for videos, ImageMagick for photoshop).

Add icon for new format to `cfg/static/style/images/fileicons/`
(Note that `perl_lib/EPrints/Document.pm` is tweaked to fall back to a generic icon if the specific icon is not present. For example if audio_ac3.png is not available, audio.png will be used instead).

MIME Type	Number of documents
image/jpeg	644
application/pdf	169
image/tiff	99
video/quicktime	67
audio/mpeg	56
video/mpeg	37
video/x-flv	29
other	23
image/vnd.adobe.photoshop	21
image/pdf	8
application/vnd.ms-powerpoint	7
audio/ac3	7
text/html	6
image/gif	3
audio/x-wav	2
image/bmp	2
video/x-ms-wmv	1
video/x-msvideo	1
application/zip	1
text/plain	1

Table 4: Use of file formats in KULTUR demonstration repository

7   Attribution of images

Figure 1 UAL Research Online front page displaying: Fashion In Film (2008) *If looks could kill: cinema's images of fashion, crime and violence - fashion in film festival 2008* [Exhibition/show, Fashion, Film]; John Wynne and Tim Wainwright (2008), *Transplant*; Thomas Gardner (2008), *Ouija Board: Union Chapel* [Sound art, Site-specific work, Audio work].

Figure 2 Thomas Gardner, *Ecosonic Ensemble (2008) Ecosonic rehearsal: London College of Communication* [Performance, Audio work]; Thomas Gardner, *Ecosonic Ensemble* (2008) Ecosonic rehearsal: City Performance [Video, Sound art]; Thomas Gardner, Ecosonic Ensemble (2007) *Ecosonic: Union Chapel Performance* [Performance, Audio work].

Figure 4 Callery, Simon (2008) *Thames Gateway Project: seeking new art forms for the representation of the experience of contemporary landscape.* [Drawing, Exhibition/show, 3D Design, Painting, Installation, Sculpture].

Figure 6 Gardner, Thomas, Ecosonic Ensemble (2008) *Ecosonic rehearsal : London College of Communication.* [Performance, Audio work]

Figure 7 Lee, Mindy (2008) *Cough it up.* [Painting]

Figure 8 Ball, Steven *Direct language project.* [Video]

Table 2 Williams, Keir and Poolman, Chris (2008) *Protect our pubs!* [Video, Exhibition/show, Drawing, Theatre, Typography, 3D Design, Other, Digital art, 2D Design, Public art, Performance]

Figure 9 Heywood, Anthony (2007) *Van Gogh Series.* [Public art, Site-specific work, Sculpture]

Figure 10 Ball, Steven *Direct language project.* [Video]

Figure 11 Carnie, Andrew (2004) *Eye: through the mirror darkly.* [Video]