


JISC Grant Funding 06/11

Cover Sheet for Bids <i>(All sections must be completed)</i>			
Name of Strand: Strand A:	<input type="checkbox"/>	Strand B:	<input type="checkbox"/>
		Strand C:	<input checked="" type="checkbox"/>
Name of Lead Institution: University of Portsmouth			
Name of Proposed Project: Old Maps Online: Finding and referencing historical mapping as a platform for research and teaching			
Name(s) of Project Partners(s) (except commercial sector – see below) British Library National Library of Scotland			
This project involves one or more commercial sector partners YES / NO (delete as appropriate)		Name(s) of any commercial partner company (ies) Klokan Technologies Gmbh	
Full Contact Details for Primary Contact: Name: Dr. Humphrey Southall Position: Reader in Geography Email: Humphrey.Southall@port.ac.uk Tel: 023 9284 2500 Address: University of Portsmouth, Department of Geography, Buckingham Building, Lion Terrace, Portsmouth PO1 3HE			
Length of Project:	15 months		
Project Start Date:	1/11/2011	Project End Date:	31/1/2013
Total Funding Requested from JISC:		£139,900.00	
Total Institutional Contributions:		£37,013.00	
Outline Project Description The project will construct a search portal for finding historic maps based on locality and period covered, not title and publisher; and therefore of value for all studying past times, not just cartographic historians. The portal will link users directly to viewable maps on the relevant library sites. We will be assembling geo-referenced map metadata from the British Library, the Bodleian Library, the National Library of Scotland and A Vision of Britain through Time, all in the UK; the New York Public Library, Harvard and the David Rumsey Collection in the US; and selected European collections. We will develop new “best practices” for defining persistent Uniform Resource Identifiers for historic maps, implement them for participating collections and publish them for adoption by others.			
I have looked at the example FOI form at Appendix A and included an FOI form in this bid		YES / NO (delete as appropriate)	
I have read the Funding Call and associated Terms and Conditions of Grant at Appendix B		YES / NO (delete as appropriate)	
For FE institutions only: Please tick this box if you are an FE institution in England, please tick this box to confirm that you meet the eligibility requirement of teaching HE to more than 400 FTE		<input type="checkbox"/>	

Old Maps Online: Finding and referencing historical mapping as a platform for research and teaching

- Creating a federated search interface for digitised historical maps, covering the main collections in Britain and the US, enabling users to find and view maps by locality and period regardless of where they are held.
- Extending accessible collections by helping libraries geo-reference existing scans.
- Replacing the current verbose, diverse and technology-dependent URLs that access online mapping with concise, consistent and persistent URIs; and establishing methodologies for referencing not just maps but locations and features *on* historic maps.

I. Appropriateness and Fit to Programme Objectives and Overall Value to the JISC Community

1. Over the last twenty years, very substantial funding has gone into digitising historical maps. This work has been of great benefit to historians of cartography and some other fields like the history of exploration, i.e. to researchers who would previously have made regular use of specialist map libraries. However, the impact on wider historical research and teaching has been limited, because users (a) still need to know which map library web site to visit and, (b) once on most sites, must search for relevant maps using conventional library metadata, notably sheet titles, even though the “coverage” of a map is far more intuitively expressed via geographical coordinates. The value of maps to a very wide range of historical and cultural research is self-evident, and we will put a vast world-wide collection a couple of clicks away – **exactly** what strand C requires.
2. Old maps are fun to look at, and simply making them easier to **find** will assist research and teaching. However, our aim is to embed them more deeply in the practices of historical GIS and mainstream historical research, rather than cartographic history, by making them easier to **cite**. There are three current problems:
 - **Current URLs are verbose and arcane, such as:**
 - http://visionofbritain.org.uk/iipmooviewer/iipmooviewer.html?fileName=bc_reports_1885%2FEdinburgh_1885=Uncredited=H.M.S.O.=Boundary+Commission+Report+1885=Edinburgh&x=43&y=43
 - http://www.davidrumsey.com/luna/servlet/detail/RUMSEY~8~1~31390~1150337:Geological-map-of-the-environs-of-E?showTip=false&title=Search+Results%3A+List_no+equal+to+%275371.030%27&thumbnailFacetLabel=&showTipAdvancedSearch=false&thumbnailViewUrlKey=link.view.search.url&metaKeywords=&fullTextSearchChecked=&helpUrl=http%3A%2F%2Fwww.lunaimaging.com%2Fsupport%2F6_0%2FLUNA%2Fen%2FAbout_Luna_and_Insight.htm&metaDescription=&advancedSearchUrl=http%3A%2F%2Fwww.lunaimaging.com%2Fsupport%2F6_0%2FLUNA%2Fen%2FAdvanced_Search.htm
 - **Current URLs are tied to specific server software and very unlikely to work long term.** The obvious need is to actively design persistent Uniform Resource Identifiers for maps, and then work out how to implement them in current servers.
 - **Current URLs mostly identify maps, not locations and features on maps.** A place-name researcher should be able to cite a specific instance of a name on a map, and a historical GIS builder cite a particular boundary line.
3. **These are not completely new ideas, but previous projects have had limited impact.** We note in particular the EU-funded DIGMAP project (www.digmap.eu) with similar goals but no longer active. Issues with previous projects have been:
 - **Focusing on software engineering rather than the working practices of (digital) map libraries;** notably, the citation issues could be addressed via middleware, but we doubt the really long-term sustainability of the approach.

- **Overly demanding sustainability models**, such as requiring map libraries to pay subscriptions. We focus on meeting JISC's five year sustainability requirement as simply as possible, and otherwise on building a critical mass of content.
 - **Plain bad user interfaces**; for example, the DIGMAP portal requires users to type in the numerical coordinates of bounding boxes. Rather than develop a quite new interface, our project is built around what is generally recognised to be the best available existing search interface to individual digital map libraries, MapRank Search developed by Klokan Technologies. This is **not** the cheapest possible approach, but it not only removes most development risks, it means (a) we will have a working portal we can demonstrate to map librarians and historians within four months of starting, and (b) using this specific software is the main reason so many map librarians have offered content for the portal.
4. Although this project involves many of the world's best map libraries, it is very important that it is led by a historical researcher. Its origins lie in discussions of how to create a global historical GIS, and in particular of how to provide that vector mapping system with historical authority and "ground truth" via linkage to digitised versions of the sources. For a time, that collaboration was itself proposing to build the world's largest digital library of historical maps, but what is proposed here is a far better idea; and although the requirements of historical GIS builders may seem specialised, they are arguably just a particularly formal version of the need most historians have to place their interpretations of the past in geographical context.

David Rumsey Map Collection
CARTOGRAPHY ASSOCIATES

MAPRANK SEARCH Share this Page

GEOGRAPHICAL SEARCHING WITH MAPRANK SEARCH

1. WHERE (zoom to a place)

2. WHEN (select a time range) From: To:

3. WHAT or WHO (type text) Text search: Map scale: to

Instant Search Results:

- Golden Gate from Twin Peaks. » 1905 City of San 1 undefined
- South San Francisco. » 1890 Rand McNally 1:7 200
- Bancroft's Official Guide Map Of City And County Of » 1881 A.L. Bancroft 1:50 000
- Geological map San Francisco. » 1908 Carnegie Institution 1:40 000
- San Francisco intensity of earthquake. » 1908 Carnegie Institution 1:40 000
- Geological profiles, San Francisco. » 1908 Carnegie Institution 1:40 000
- San Francisco Peninsula. » 1869 U.S. 1:40 000
- Ocean south from Cliff House Rocks. » 1905 City of San 1 undefined

Powered by MapRank™ Search from Klokan Technologies

MapRank Search – on-line at <http://www.davidrumsey.com/view/maprank-search>

II. Quality of Proposal and Robustness of Workplan

5. Strand C projects are limited to fifteen months, but if we are to have much of an impact on either map librarians or historians it is essential that most of this time is **not** spent developing software. We discussed basing the portal on the existing Vision of Britain (VoB) map library, but that has never been our main focus and lacks polish, while Klokan Technologies' MapRank Search is based on similar concepts. Quickly creating the best possible portal will both help draw in as many collaborating libraries as possible and enable the Portsmouth team to focus on assembling metadata, dissemination work and the referencing/citation agenda.
6. **Initial search portal:** This task will be almost purely the responsibility of Klokan Technologies, who will be provided with root access to the server at Portsmouth, and will be completed by February 29th 2012, enabling presentation at the Aylmer Seminar (see below). The initial portal will be closely based on the existing MapRank Search interface, as used by the David Rumsey Collection and as illustrated above: it enables users to specify a locality by *drawing* a bounding box, and a time period via moving slider bars. This is a modern web interface based on Javascript and Ajax, not Flash, and the system will be built around global coordinates rather than OSGB (see <http://www.klokantech.com/mapranksearch>). The initial portal will cover just these three collections, for which we already hold the metadata, and it will use the current URLs offered by those libraries:
 - **National Library of Scotland (NLS):** Currently hold 18,000 web-accessible Scottish map images with bounding box metadata, and hope to add a further 24,000 OS six inch and 25 inch maps by the end of our project, these already having been scanned. They have 40 mosaics available as Web Map Services and another 120 as geo-referenced Tile Map Services.
 - **David Rumsey Collection at Stanford University:** Has 15,000 maps with bounding box metadata, and hope to add this to another 11,000 maps during our project period.
 - **A Vision of Britain through Time:** The entire collection of over 2,000 maps has bounding-box metadata. Three mosaics covering Britain at one inch scale plus one of Europe at 1:500,000 are available as Web Map Services.
7. **Extended search portal:** During the remainder of the project, Klokan Technologies will enhance the portal software in response to user feedback. One issue to address is the embedded gazetteer, which currently uses the Google Maps API Geocoder; we will explore also using the Vision of Britain gazetteer, with better coverage of historical names, and there may well be scope for linkage to other JISC projects; we obviously have links to Chalice, working with the Survey of English Place-Names. Portsmouth staff will work with Klokan Technologies and other map libraries to greatly extend the scope of the portal, the system being configured to handle metadata for up to 100,000 maps:
 - **British Library (BL):** A one year project between October 2011 and October 2012 will use Klokan Technologies' Georeferencer software for crowd sourced geo-referencing of c. 1,000 maps from the Ordnance Survey's original surveyors drawings and the Grace Collection of maps of early modern London. The BL will be actively promoting participation in crowd-sourcing by e.g. local history societies.
 - **Bodleian Library, Oxford:** Will have c. 1,000 British 18th and 19th century maps, and we will work actively with them to add geo-referencing.
 - **New York Public Library:** Has over 14,300 scanned maps in a rapidly growing collection (c.23,000 by the end of 2011), and a crowd-sourcing project similar to the British Library's to add geo-referencing. They can currently supply us with geo-referenced metadata for over 3,000 maps, mainly showing New York City and its vicinity, and expect another 1,000 by late 2012.
 - **Harvard University Map Library:** Can provide metadata for c. 1,700 scanned and geo-referenced maps, ranging from 17th century urban plans to 1950s US military

mapping of China. An interesting case as they form part of the Harvard Geospatial Library, along with polygon data, but conventional MARC data are also available.

- **Penn State University:** Have a collection of c.6400 scanned maps, primarily of Pennsylvania. We will also include this collection if time and resources permit.
 - **Moravian Library:** Metadata for 7,000+ maps already held by Klokan Technologies.
 - **Other European collections:** The DIGMAP project no longer exists and its participants are otherwise engaged, but we have recently made contact. We have access to their metadata, but bounding box assignment was entirely automated and the results problematic, so we are unsure it should be included even if we obtain permission from the various contributing institutions. Not our first priority. Similarly, it is unclear whether Belgium's Cartesius project is far enough advanced for inclusion.
8. **Geo-referencing more maps:** While scanning more old maps is outwith the programme, we were proposing to include a substantial component concerned with geo-referencing existing digital map collections, enabling their inclusion within the portal; and of course enabling us to work with those collections to enhance citation. We now have so many offers of access to existing geo-referenced collections that we think we must give priority to ensuring their metadata is assimilated into the portal. However, we are aware that many of these collections are outside the UK, and JISC may wish to instruct us to give greater priority to assisting UK collections get started. We emphasise that both the Portsmouth staff are trained in GIS and have considerable experience of geo-referencing historic maps, while the existing Vision of Britain map library is probably unique in that every single image is already geo-referenced. The Portsmouth developer has been largely responsible for creating that library, so he can be of very considerable assistance to other map libraries wishing to make geo-referenced collections available on line via modern interfaces. Unless JISC tell us to prioritise this, we will concentrate on the commitment to assist the Bodleian in geo-referencing their new collection, and possibly assisting with the BL project. In any such work, our focus will be on libraries which can themselves credibly meet the sustainability obligation. There are many other small digital map collections created by individual academics, but the images from these arguably need to be physically assembled and that would be a very different project.
 9. **Improving map citation: from server-specific URLs to Uniform Resource Identifiers for maps:** The aim here is not to develop some specific piece of software but rather to discuss, develop and apply guidelines for best practice. Our largest concern here is to enable *authors* to include references to historic maps which will work for their *readers* in ten, twenty or a hundred years time. This is an ambitious aim, but note that many of the participating libraries are copyright libraries, and we are far more confident of what can be sustained through their adopting best practices within their servers than through any piece of middleware.
 10. This work must start from existing general guidelines for designing URIs (for example, <http://www.cabinetoffice.gov.uk/resource-library/designing-uri-sets-uk-public-sector>) but historical map collections pose special challenges firstly because they are **both** "geographical information", with associated spatial metadata, **and** items within library collections with conventional MARC/Dublin Core metadata, and secondly because that means that the associated web servers are specialised and complex, explaining the current verbose URLs. Further, few map libraries are in complete control of their own destiny, being part of larger libraries and required to use cataloguing systems and web servers designed mainly to support the wider needs of the overall library. Implementing best practices will therefore mean not ripping out current servers but exploring how best to configure them. In particular, we expect to use URL re-writing to conceal the most software-specific elements, such as .asp and .jsp, and to turn query strings full of ampersands and question marks into apparently static URLs; setting better defaults within the servers to avoid passing unnecessary parameters; and using the canonical tag and simple annotation of pages to tell search engines and users how pages *should* be

referenced. None of this is rocket science, but existing documentation is often obscure and not designed to make any sense to map librarians or GIS specialists, so these issues have been ignored as map digitisation projects rushed to get web sites online.

11. Designing URI sets for historic maps poses significant challenges. Firstly, some originals -- e.g. the BL's Original Surveyors' Drawings -- are clearly unique; some -- e.g. the Bodleian maps and the Grace Collection -- are probably the only copies to survive; and some -- e.g. NLS and VoB New Popular mapping -- are duplicated. Secondly, several distinct digital resources may derive from a single scan: an uncompressed tiff as an archive copy; an embeddable viewer; an embedded viewer provided by the relevant library; the image as part of a mosaic, possibly reprojected and accessible via a web map server; and associated metadata records as RDF and HTML. Can any other digital library content have so many facets?
12. We emphasise that the commitment here is (a) to create guides to best practice, and to disseminate them via the project web site, (b) to implement them within the University of Portsmouth's Vision of Britain site, which is independent of any wider library, and (c) to work with our partners to try to implement them in their systems, and to include their experience in the documentation. The other libraries involved cannot make specific commitments to alter their systems without the detailed investigations the project will be doing, although most of them have made some high level commitments to move towards designed URIs. We will use participation in the portal to encourage libraries to move towards more sustainable URIs, as map URLs need to form part of the metadata supplied and we obviously want the URLs held in the portal to be stable.
13. **Citing names and features within maps:** This project is mainly concerned with improving access and referencing for scanned images of individual map sheets for which a basic bounding box – the real world coordinates of the sheet corners – forms part of the metadata. However, we are also interested in methodologies for referencing locations within such images, enabling citation of particular landscape features, boundary lines or geographical names. This means a special focus on historic map sets which have been converted into geo-referenced mosaics and made available via following the Open Geospatial Consortium's Web Map Server protocol. The main portal to be developed by the project is not designed to hold metadata for this type of resource, so it will be separately added to EDINA's Go-Geo system, using Geodoc to create service rather than dataset records. Go-Geo already has the ability to identify the dates associated with WMS content and can therefore identify these as specifically historical web map services. In this context, a complete mosaic is a single service, so this is about adding a relatively small number of additional records to Go-Geo. Although the format of calls to WMSs is specified by the OGC, work is needed on the URLs for libraries' own WMS viewers.
14. **Dissemination:** Although this project primarily involves digital map libraries, it is designed to serve a much wider audience of historical researchers, teachers and students. Our timetable, and use of MapRank Search to create an initial portal within the first four months, means we will be able to include significant dissemination activity within a 15 month project, and this will involve significant work by the project director and manager. See *Engagement with the community*.
15. **Personnel:** The project is based entirely on existing staff at the University of Portsmouth, at Klokkan Technologies, and contributions from various map librarians already in post, so a quick start-up is assured.
16. **Timetable:**
 - **Month 1 to 4:** Assemble metadata from Vision of Britain, Rumsey and NLS. Create initial portal, and demonstrate on February 29th. Begin gathering information on existing URLs and server configurations used by partner libraries.
 - **Months 3 to 12:** Assist Bodleian and possibly other map libraries with geo-referencing existing scans.

- **Months 5 to 13:** Promote map portal via presentations at historical conferences and meetings of map librarians.
- **Months 5 to 13:** Add metadata from additional libraries to portal.
- **Months 8:** Project meeting at British Library to finalise first version of guidelines on referencing.
- **Months 8 to 14:** Implement referencing guidelines within VoB and partner systems.
- **Months 14 to 15:** Finalise metadata within portal. Final conference at National Library of Scotland. Finalise good practice guide on URIs. Final report to JISC.

17. Deliverables:

- Federated search interface to historic maps, enabling users to locate maps covering their preferred area and period without knowing what library holds them, or bibliographic data such as titles and map publishers.
- Guidelines for providing consistent and persistent URIs to (a) online map sheets and (b) geo-referenced map tiles. These guidelines to be implemented by participating UK map collections.
- Blog and project web site, including guides to best practice.

18. Risks:

- The project is based entirely on the continued employment of existing staff.
- The portal will be based on existing software, the innovation lying in making it federal.
- Although Klokan Technologies are a small company based outside the UK, they are an established supplier to the National Library of Scotland, British Library and the David Rumsey Collection.
- Although the participating map libraries are making no new commitments to keep their collections on-line, the UK partners are mostly copyright libraries and the US partners of similar stature.

Sustainability

19. We think previous map portal projects failed because too much emphasis on long-run sustainability made map library participation too complicated. Our aim is, instead, to get as much participation as possible while, of course, ensuring that JISC's five year sustainability requirement is met. This means, in particular, that although we aim to create an excellent search portal, that is all it will be: we will not hold any maps ourselves, and we will not route images through our viewer. Nor will we try to improve map referencing via middleware. This means the portal needs only a relatively modest server with minimal storage requirements, and running costs for five years to 2018 will be covered by a single internal payment to Portsmouth Information Services. Klokan Technologies will be responsible for maintaining the software on that server, again in return for a single initial payment, although we emphasise this does not cover any enhancements to software and is mainly about resolving any problems with the portal software that arise through security patches and changes to the operating system.
20. We are also not trying to develop an automated infrastructure for harvesting map metadata. Given that map collections are usually embedded within larger libraries, the long term solution has to be about ensuring that when those large libraries expose their catalogues as a whole, any spatial metadata they hold for maps is exposed in a form a portal like ours can use. That has not happened yet and setting it up is obviously beyond our scope. Our immediate aim is to assemble the geo-referenced map data that already exists, or that will be created during the life of our project, and we will do this mainly by our partners manually extracting their metadata, with some work by us to reformat it for the portal. We expect this work to yield further "good practice" recommendations. We will be creating an automated system to add thumbnail images to the portal. We also note that while we cannot commit to keeping the project manager in post to 2018 to maintain portal contents, she is now on the university's permanent staff and we have a good

record of obtaining funding to sustain her post. If this project is funded, and provided only that the Frederick Soddy Trust's investment income is as expected, they and the University of Portsmouth will be sustaining her post at least until 31/7/2013.

21. One really long-term scenario is that the portal would be taken over by one of the national data centres, based either on their somehow adapting MapRank Search or writing some quite new portal software. However, another scenario is that the map portal be extended into a broader resource for global local history, working as a gazetteer; in other words, into a much larger version of *A Vision of Britain through Time*. We are obviously interested in this, and have shown that such a resource could generate enough income to be self-sustaining; but such a goal is too ambitious for a 15 month project, almost regardless of available funding. We will be exploring potentials for direct income generation from the portal, and this would be relevant if this open access facility proved popular outside academia and a more powerful virtual host is eventually needed.
22. The project will also create a substantial project web site within the main University of Portsmouth site, which will be the home for good practice guides, etc, and this will also be sustained until 2018.

III. Engagement with the Community

23. This project needs to serve a very broad community of historical researchers and teachers while deeply engaging with the specialised community of map librarians. Our letters of support demonstrate the latter very clearly, even though the project is led by a historical researcher. Given that this project is not designed to help cartographic historians, the one group who *want* author catalogues for map libraries, it is harder to demonstrate engagement by historians in general at this stage: most of them make limited use of old maps because there are relatively few large collections, and because existing on-line collections are impenetrable for reasons already discussed.
24. One of the clearest pieces of evidence that historians *are* interested in maps is that the National Archives and the Royal Historical Society have selected "Mapping the past" as the theme for the 2012 Aylmer Seminar, hosted by the Institute of Historical Research and now set for February 29th 2012. They have invited our project director, Dr. Southall to be the expert member of the organising committee, so this is a highly appropriate event we will have a substantial input into and we will use it for the first public demonstration of the portal, based on a subset of the final content. TNA have said they are happy with this.
25. We have included the costs of attending one other historical conference, the European Social Science History Conference in Glasgow in April 2012, and our contacts will enable us to add a portal demonstration to the programme. The ESSHC and the US-based Social Science History Association meetings tend to act as world conferences for historical GIS, Dr. Southall is co-chair of the SSHA Historical Geography Network, and if the project proceeds we should have a significant presence at the 2011 and 2012 SSHA meetings, and possibly at the 2012 Association of American Geographers meeting in New York. No funding is requested for these non-UK meetings.
26. Although this project is very clearly *not* an extension to the GB Historical GIS and the web site *A Vision of Britain through Time*, it would be led by the GB Historical GIS project team and would benefit from our established high profile and long-running relationships with bodies such as the UK Data Archive and EDINA. Our budget includes funding for producing two flyers aimed at historians and at map librarians, but much of our dissemination activity would be on-line, via our web site and blog, via our own history-gis and gbhgis JISCmail lists and the map librarians' lis-maps list; and so on.
27. Map curation is a small community, and this proposal is already well known within it! If the project is funded, we expect to have a substantial presence at the British Cartographic Society's 2012 Map Curators' Workshop. We will also be organising our own one day conference, hosted by the National Library of Scotland at the end of our project, and designed to involve a mix of map librarians and map users, including place-name

researchers and historical GIS specialists. We will author articles to appear in various libraries' newsletters.

IV. Budget (see below)

28. The cost of work by our commercial partner, Klokan Technologies, is an unusually large part of our budget, but we believe justified by their central role. Although we include it here as a single line, a detailed breakdown is provided in their letter of support. We emphasise that they are charging only for new development work, not for use of their existing software. That software is the clearest reason why they are good value: any other developer would need to start from scratch and could not possibly deliver a working portal within four months; and no other company has the reputation among map librarians enabling us to secure so much collaboration. When we began preparing this application we expected to have to include modest funding for our library collaborators, but making their collections available via this particular software has proved a sufficient draw.

29. Payment to Portsmouth Information Services covers server hosting to 2018.

Directly Incurred Staff	November 2011– March 2012	April 2012– January 2013	TOTAL £
████████████████████	████████	████████	████████
████████████████████			
████████████████████	████████	████████	████████
████████			
Non-Staff	November 2011– March 2012	April 2012– March 2013	TOTAL £
Travel and expenses	£1,055.00	£4,920.00	£5,975.00
Hardware/software: VM server	£750.00	£3,950.00	£4,700.00
Dissemination	£150.00	£150.00	£300.00
████████████████████	████████	████████	████████
████████████████████			
Other: 1 day Edinburgh seminar	£0	£1,200.00	£1,200.00
Other: web design	£0	£2,000.00	£2,000.00
Total Directly Incurred Non-Staff (B)	£22,535.00	£36,580.00	£59,115.00
Directly Incurred Total (C) (A+B=C)	£27,256.00	£46,023.00	£73,279.00
Directly Allocated	November 2011– March 2012	April 2012– March 2013	TOTAL £
████████████████████	████████	████████	████████
████████████████████			
████████████████████			
████████████████████	████████	████████	████████
████████			
Estates	£3,352.00	£6,805.00	£10,157.00
Directly Allocated Total (D)	£15,648.00	£31,533.00	£47,181.00
Indirect Costs (E)	£18,631.00	£37,822.00	£56,453.00

Total Project Cost (C+D+E)	£61,535.00	£115,378.00	£176,913.00
Amount Requested from JISC	£48,700.00	£91,200.00	£139,900.00
Institutional Contributions	£12,835.00	£24,178.00	£37,013.00
Percentage Contributions over the life of the project	JISC 79.1 %	Partners 20.9 %	Total 100%
No. FTEs used to calculate indirect and estates charges, and staff included	No FTEs: 0.98		Which Staff Posts (1)-(3)

30. Neither of the two project staff in Portsmouth will be employed full time. Both have long experience of working for the GB Historical GIS, including two recent JISC-funded projects. Note that although one is primarily the project manager and the other a developer, both have MScs in GIS and substantial practical experience of geo-referencing historical maps. They will play little role in the construction of the initial portal, but will be responsible for gathering in the metadata from partners which will be needed for the extended portal, and for direct assistance with geo-referencing where this is required. The project manager will be responsible for coordinating discussion of URI design, although we expect most of the ideas to come from partner librarians; the developer will be responsible for investigating how best to implement these within the various servers; and the project manager will assemble the Guides to Good Practice.
31. The National Library of Scotland and the British Library are providing metadata, making substantial commitments of staff time and providing meeting spaces, but very generously not requesting funding. We are including within the Portsmouth budget a substantial travel budget for them, and for participation in the steering group by CDDA. Journeys covered are return trips Portsmouth-London x 6, Edinburgh-London x 4, Belfast-London x 2, Portsmouth-Glasgow x 1, Portsmouth-map curators workshop x 1, Edinburgh-map curators workshop x 1, London-map curators workshop x 1, Portsmouth-Edinburgh x 1, Belfast-Edinburgh x 1, London-Edinburgh x 2, Oxford-Edinburgh x 1, Zurich-Edinburgh x 1, Zurich-Portsmouth x 2 and a single trip Portsmouth-London x 1.
32. We will have an experienced project manager, but the project director will be leading dissemination activity and also playing a large role in defining guidelines for URIs and other aspects of the “citation agenda”.

V. Previous Experience of the Project Team

33. These staff and major collaborators/steering group members will work on the project:
- **Dr Humphrey Southall** (Director, UoP) has led GBHGIS development since 1994, including directing JISC's “Historic Boundaries of Britain” project (2007-9).
 - **Paula Aucott** (Project Manager, UoP). BA in Medieval History, MA in English Local History and Msc in GIS. Working on GB Historical GIS since 2000. Project manager on JISC “Historic Boundaries of Britain and “Embedding” projects.
 - **John Westwood** (Developer/GIS, UoP). BEng in Electronic & Computer Engineering, MSc in GIS. Contributing to GB Historical GIS since 2002 and principal creator of Vision of Britain map library. Expert in MapServer, OpenLayers, IIPIImage.
 - **Petr Pridal** (CEO and principal developer, Klokant Technologies). Creator of several open- and closed source packages, including MapRank Search and Georeferencer. Technical manager for R&D, Moravian Library, Brno, Czech Republic
 - **Paul Ell** (Director, Centre for Data Digitisation and Analysis, Queens Belfast). Extensive experience with digitisation projects; liaising with place-name researchers.
 - **Chris Fleet** (Senior Map Curator, National Library of Scotland). Working for NLS since 1994 leading development of their digital map library. Led NLS contributions to “Charting the Nation”, EU Digimap, and AddressingHistory projects.
 - **Kimberly Kowal** (British Library). Curator of Digital Mapping, and member of JISC Geo-spatial working group. Previously worked with the map collections at the Univ. of Minnesota and the Library of Congress