JISC Grant Funding 06/11

Cover Sheet for Bids ***(All sections must be completed)***	JISC

Name of Strand: Strand A:		**Strand B:**		**Strand C:**	Y

Name of Lead Institution:	**University of Portsmouth**
Name of Proposed Project:	**Stepping into Time**
Name(s) of Project Partners(s) (except commercial sector – see below)	**London Metropolitan Archives**

This project involves one or more commercial sector partners **NO** (delete as appropriate)	**Name(s) of any commercial partner company (ies)**

Full Contact Details for Primary Contact:
Name: Dr Catherine Emma Jones
Position: Lecturer in Human Geography
Email: kate.jones@port.ac.uk or catherine.emma.jones@googlemail.com
Tel: 07980 301628
Address: Department of Geography, Buckingham Building, University of Portsmouth, Portsmouth

Length of Project:	**13 months**		
Project Start Date:	**Dec 2011**	**Project End Date:**	**Dec 2012**

Total Funding Requested from JISC:	**£106,453**
Total Institutional Contributions:	**£26,613**

Outline Project Description

This project addresses the divide between a passive learning experience, where learners consume educational material in traditional lectures, and an active learning experience where users interact with a learning resource in a fun and engaging manner. To widen access for learners to geo-historic datasets, disparate datasets need to be linked together in a coherent structure, made accessible via easy to use software interfaces. **This proposal explores the mechanisms of linking and clustering historic data (WW2 bomb damage maps) using geography and time, generating derived information and knowledge set in the present world**. This is **achieved through the development of a geo-mobile application which overlays the real world with historical data views**.
This project will (1) illustrate how geography can be a useful method for linking diverse (historic) datasets through space and time; (2) open up archive data and existing spatial data for potential new research projects and (3) help learners interact with archive data within a situational context.

I have looked at the example FOI form at Appendix A and included an FOI form in this bid	**YES /** (delete as appropriate)
I have read the Funding Call and associated Terms and Conditions of Grant at Appendix B	**YES /** (delete as appropriate)
<u>For FE institutions only:</u> 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	☐

Stepping into Time

1 Appropriateness and Fit to Programme Objectives and Overall Value to the JISC Community

1.1 The Problem

"The next phases of activity for UK-wide digitisation must aim to both increase the wealth of content and to disperse this content to an even broader audience[1]"

1. To widen access for learners to geo-historic datasets, disparate datasets need to be linked together in a coherent structure, made accessible via easy to use software interfaces. **This proposal explores the mechanisms of linking and clustering historic data using geography and time, generating derived information and knowledge set in the present world**. This is achieved through the development of a geo-mobile application which overlays the real world with historical data views.

2. Technology has transformed research within the discipline of Geographic Information Science (the science behind digital mapping). Traditionally, Geographic Information (GI) has been expensive and notoriously difficult to use, effectively restricting access to domain specialists. Traynor and Williams (1995)[2] acknowledged inherent complexities present within conventional desktop Geographical Information Systems (GIS), resulting in **a restricted user base consisting mainly of domain experts with extensive training and experience.** Traditional GIS users are confronted with a myriad of map interaction possibilities, distracting from their primary objective of developing knowledge. Instead, the user is focusing on map manipulation tasks (Jones et al. 2009[3]). **To successfully interact with a desktop GIS users are required to retain many items in their short-term memory this renders them difficult to use and time-consuming to learn** (MacEachren and Kraak 2001;[4] Haklay and Tobón 2003[5]; Worboys, Duckham, and Kulik 2004[6]).

3. However, in the last decade, the methods and technologies for acquiring, processing and sharing GI have changed dramatically, influencing traditional GI practices (Goodchild 2008[7]; Sui 2008[8]). This is marked by the emergence of web-mapping applications based on online "slippy map" API's (Bing Maps, Google Maps, OpenStreetMap), which nowadays are the primary interfaces for lay users to interact with GI, answering questions such as 'where is the nearest Italian restaurant', or 'which route takes me from home to office'. Their popularity explained by the open provision of web-mapping API's to third-party developers, integrating web-maps into web sites, services and mobile apps. These advances in technology have also increased public access to geo-data, decreasing the cost of computing power and storage making it possible to capture process and analyse a multitude of datasets/resources. These developments mean there is **mass-market adoption and consumption of geographic data and services by members of the public**.

4. Looking at usability of such interfaces, **the ease with which a user can interact with a website expedites efficient task performance**. The success of web-mapping applications then stems from the **design emphasis centred on user needs, resulting in very simple user interactions** significantly **reducing the user's cognitive load, thus moving towards**

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[1] http://www.jisc.ac.uk/media/documents/programmes/digitisation/12pagefinaldocumentbenefitssynthesis.pdf
[2] Traynor, C, and M.G.Williams 1995 Why are geographic information systems hard to use? In Conference companion on Human factors in computing systems, 288–289. CHI '95. Denver, Colorado, United States: ACM
[3] Jones, C. E, M. Haklay, S. Griffiths, and L. Vaughan 2009 A less-is-more approach to geovisualization–enhancing knowledge construction across multidisciplinary teams. International Journal of Geographical Information Science 23: 1077–1093.
[4] MacEachren, A. M, and M. J Kraak 2001 Research challenges in geovisualization. Cartography and Geographic Infor-mation Science 28: 3–12.
[5] Haklay, M., and C. Tobón 2003 Usability evaluation and PPGIS: towards a user-centred design approach. International Journal of Geographical Information Science 17:577–592.
[6] Worboys, M., M. Duckham, and L. Kulik 2004 Commonsense notions of proximity and direction in environmental space. Spatial Cognition & Computation 4 : 285–312.
[7] Goodchild, M.F 2008 Commentary: whither VGI?" GeoJournal 72: 239-244.
[8] Sui, D 2008 The wikification of GIS and its consequences: Or Angelina Jolie's new tattoo and the future of GIS. Computers, Environment and Urban Systems, 32: 1-5.

the attainment of almost universal usability (useful and usable applications by all types of demographic groups). This is astonishing given the exceptionally complex geographic concepts such web-mapping interfaces still encapsulate (Shneiderman and Plaisant 2005[9]; Marsh 2007[10]).

5. "**Almost everything that happens, happens somewhere and knowing where something happens is critically important"**[11]. Understanding location is powerful and unlocks solutions to a wide variety of issues, for example exploring geographic patterns of diseases. There exists a vast quantity of data (digital or otherwise) containing geographic attributes ready for exploitation, **placed in a spatial/temporal context with other available datasets, to support the knowledge production process, giving** an enriched view of places, people and phenomena, enabling interpretation and questioning. **The linking of data from different data sources, using time and place as the common identifier, is commonly referred to as 'conflation'** but requires complex geographic algorithms in order to process the data. Different historical datasets have been collected at different map scales, with different levels of detail and data quality levels. For this reason, **data conflation methods using geography as the link to different data sources still remain in the hands of experts**.

6. Consider the situation of 'Megan' a student of history, 'Mark', a cultural geography undergraduate, or 'Matthew', an urban design post-graduate, all interested in investigating how streets have changed through time. Whilst all are proficient in common desktop or discipline specific packages, such as ATLASTi for qualitative research or CAD for drawing, they are not proficient with desktop GIS. They are, however, familiar with Google Maps, have accounts with popular social networking websites and all use mobile apps. They learn best when they have practical problems to solve and visual material to support lecture context. They find traditional lectures a little boring. To start with their investigations, these learners face challenges: (1) determining available data (2) understanding the technology, concepts and methods required to process and integrate data (3) implementing the technical solutions. It is these user issues that this proposal sets out to address. What can be done to develop a resource they can use in their learning process?

1.2 Our Proposal

1. It is not enough for geo-experts to simply conflate datasets to enable their usage in research and learning. Integrated data resources need to be turned into information, usable for the creation of knowledge through research. Making accessible these integrated data resources means developing useful and useable software interfaces, to create a powerful learning environment. Such learning environments can supplement and enrich traditional passive lectures with interactive exploration, visualisation and analysis of discussed topics, modernising the student experience. See figure 1 for the project proposal

2. Using the background narrative described above, this proposal will integrate a set of historic datasets, including the never before used London Bomb Damage Maps from the London Metropolitan Archives (LMA), which will be integrated with a range of historical and contemporary sources using geography as the common denominator. The assimilated datasets will form a cohesive framework, also called a (geo-data) spatial infrastructure, which will form the basis for a mobile mapping app, recognising the profound impact and usage of mobile devices in today's world. This mobile app will enable users to interact in situ with historical information associated to the urban landscape, overlaying and augmenting a user's view of the streetscape with historic information. This combination of live images from a mobile's camera, with maps, historical visualisations and other relevant information, will be

[9] Shneiderman, B and C. Plaisant 2005 Designing the user interface. 4th edition. Pearson: Addison Wesley, USA.
[10] Marsh, S 2007 Using and Evaluating HCI Techniques in Geovisualization: Applying Standard and Adapted Methods in Research and Education. [online] http://citeseerx.ist.psu.edu/viewdoc/summary . Last accessed: 20/7/2011
[11] Longley, godchild, Maguire and Rhind (2010), Geographical Information Systems and Science, Wiley and Son: Chichester. Page 2

derived from the geographically conflated data contained in the spatial database. This mobile app will provide a fun and engaging mechanism for learners to explore London's historic streetscapes independently. This type of application will aid learners who are engaged in the learning process primarily by seeing and visualising (*visual learners*).

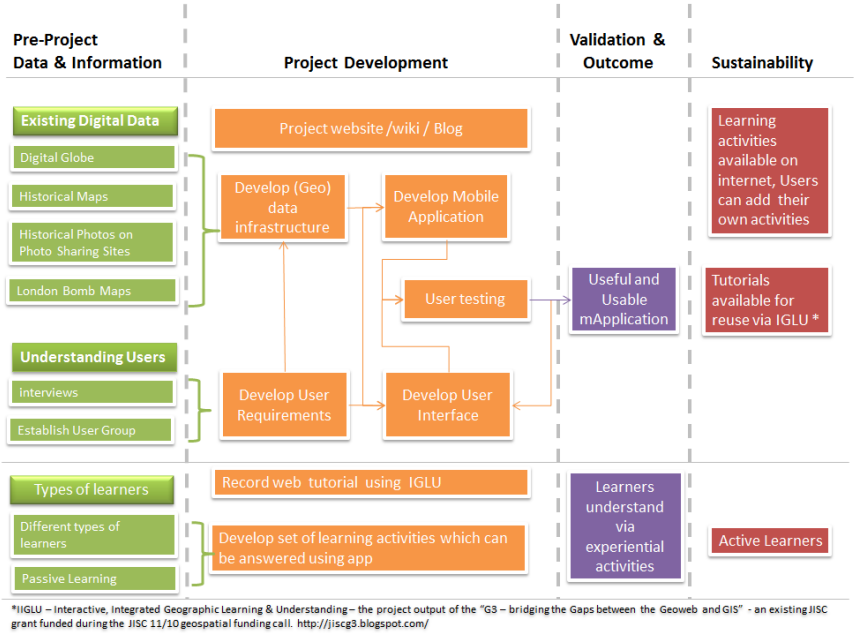

Figure 1 – the "Stepping into Time" Proposal

3. To support the mobile application and the geo-techniques driving it, the end to end development process will be documented and made available via the project website. A user group will be created, using volunteers recruited via social networking (such as Twitter and the project blog), existing JISC and LMA mailing lists, in order to help devise a series of activities that users can download and complete with help of the mobile app. These activities or games (based around geo-caching or challenges) will be devised and made available via the project website. They can be worked through by *Kinesthetic* learners, those who learn most effectively by working through problems. At the same time a set of tutorials will be recorded, showing users how they too can process and conflate data using open source GIS packages. Tutorials will be recorded using the web product known as IIGLU – the output of project "G3 – bridging the Gap between the Geoweb and GIS[12]" - an existing JISC grant funded during the JISC 11/10 geospatial funding call.

1.2.1 Historical-geographical data integration

1. This project will work with three data resources: (1) scanned 'paper' map sheets of WW2 bomb damage in London; (2) Geo-referenced[13] historical maps from the existing JISC resource *Ancient Roam;* (3) Historical Photos from photo sharing websites (such as Flickr); (4) contemporary open data and (4) digital globe or digital mapping API's such as Google Earth or Bing Maps. These data sources will be conflated according to a consistent geographic scale – the building and the street. The detailed historical maps of London's Bomb Damage from the London Metropolitan Archives (LMA) will be provided by the project partner in digital form, combined to form one large image of London, which can then be geo-referenced using a desktop GIS solution (such a Manifold GIS or QGIS). Open data provided by the Ordnance Survey Open Data or the Open Street Map initiative will be used to identify control points for the geo-referencing process.

[12] http://jiscg3.blogspot.com/

2. The bomb damage locations and attributes contained within these maps, will be extracted by vectorisation to create a new spatial dataset, relating damage to individual buildings/ roads. From this new data source, statistics can be drawn, for example the percentage of a street's buildings damaged during the bombing campaigns, or which buildings were destroyed or damaged. At the same time existing georeferenced maps, available for download via JISC funded Digimap, will be integrated into the spatial data framework, enabling users to see how the street has changed before, during and after the bombing. The aggregation and presentation of all of this information inside the mobile app will enable users to interact and explore a whole set of geographical layers, enabling access to complex and diverse Geographical Information without being GIS experts. All the while, this process will be documented and recorded using the JISC funded IGLU website to ensure future learners will be able to see a walkthrough of the process and understand the fundamentals of how to do it themselves.

1.2.2 User generated content

1. Apart from traditional archive data and other conventional data sources, there is an ever growing amount of new content contributed to user-generated websites. Web 2.0 applications and services have enabled non-experts to contribute data and information, unearthing new, exciting and previously hidden data sets. This content can enrich traditional data sources, adding an alternative visual element and enriching context. As part of the project, the created resource i.e. the application, will explore the feasibility of linking together user-contributed multi-media content and more traditional historical datasources as part of a mobile mash-up to enhance the user experience and interaction with the data.

1.2.3 Focus on Understanding Users

1. The development and design philosophy of the project places the user at the centre. This project will engage new learners and potential users of the application from the very start of the development cycle, continually engaging with end users to facilitate the development of a useful and usable learning tool. This core user group will be drawn from inside the university and archive users of the LMA. Social Networking sites (such as Twitter and Facebook), as well as university and JISC mailing lists will also be used to identify potential users (students and teaching staff). As the development progresses, these user groups will be included in a beta testing campaign for the prototype. University participants will be volunteers so their contributions to the project will be in kind. This user group will contribute to the development of activities and challenges that can be solved using the application.

1.2.4 Technology and Software - Development

1. The spatial data framework and historical maps will be processed /linked using a desktop GIS (e.g. QGIS, Manifold or ArcGIS). The derived geographical datasets and statistics will be stored in a spatially enabled database (PostgreSQL/PostGIS), using a well formed data architecture and structure, including metadata, to ensure the maintenance, update and extensibility of the datasets and functionality. A project website and blog will be setup to incorporate appropriate documentation of the project, its data sources, structure and metadata. The entire code base of the server and mobile application will be developed under an open-source license with public code hosting to enable outside contributions, as well as making use of other open-source projects where appropriate. The app will integrate the following functionality: (1) Users will be able to search for specific streets and explore a summary classification of the extent of damage; (2) users real-time locations will be used to display relevant data about the street they are currently in, visualised through an augmented reality view on their handset. An open mobile development platform such as Wikitude (available for both Android and IPhone), Android AR-Kit or Mixare will be utilised to implement this functionality.

1.2.5 Evaluating and Validating Impact – the success of the project

1. This project will be a working example of how geography can be a useful mechanism for linking diverse and disparate datasets together through space and time, introducing the

power of geography to other disciplines in academia. The augmented reality data view will open up a new active learning environment, overlaying historical location data in a real world view. This project creates a portable archive laboratory revealing research questions to a broad range of users, visualising and making accessible a rich set of (historic) spatial data sets. An experiment with volunteers using the prototype application will explore the transition between passive learning to active independent learning. Half the group will have access to the historical paper maps while the other half of the group will have access to the mobile application. They will both be asked a set of question associated with the data and maps which will evaluate the application as a practical teaching aid.

1.3 Summary of Appropriateness and Fit to Programme Objectives and Overall Value to the JISC Community

Requirement	Project Fit
Bringing together existing, but currently scattered, digital content	This work will be the foundation for the longer-term use of geography and location as the identifier for linking data resources together combining digital map images from LMA archive, OpenStreetMap, Ancient ROAM etc. These datasets have been digitised but never before used as a coherent unit. Once clustered, a framework to develop derived statistics will be presented using a novel interactive mobile application, enabling users to seamlessly and effortlessly consume data and information as part of the learning process.
Demonstrate innovation	Innovation will be demonstrated throughout the project lifecycle: (1) using data never before accessible to the public (2) developing one of the first historic focused augmented reality mobile app (3) providing downloadable activities that are in line with different types of learners and (4) recording tutorials that can be played back so non-expert learners are supported through the data-integration process should they wish to do something similar.
Emphasis on users needs and usage	We address the disconnect between passive and active learning by harnessing the power of geography and smart phone technology. The involvement of a volunteer user group, recruited using social networking media, is integral to the project and ensures that user centred design is at the heart of the development process.
Access, IPR, licencing	The mobile application will be free to download and use for all UK FE, HE and LMA archive users. We address the issue of data ownership/copyright via a specific work page and have begun talks with the LMA prior to writing this bid.
Measuring impact	An experiment will be conducted by giving half the user group access to the historical maps only and half the group access to the mobile application to explore the difference in learning. Statistics on app downloads, website & blog views will be maintained.
Partnerships	See letter of support. The user centred design of an easy to use mobile application, in combination with the data resources of the LMA, will open up these datasets to new learners, increasing the visibility and use of LMA collections. We will work with LMA representatives who understand their archive user-base, to expand the mobile app to other archive datasets.
Project Team Expertise	The project leader and the application developer have worked together extensively in the past – including on a JISC grant. The team has in-depth expertise with geo-technology, usability and the development of learning and teaching material with a funding & publication track record.
Dissemination, communication & engagement	On-going dissemination of the project outputs will be channelled through a dynamic website, including a frequently updated blog and social media engagement. Included are also costs for a designer to ensure a consistent, professional branding of all project outputs. Lunchtime workshops and road shows are a further important channel for dissemination of the project.
Senior Institutional Staff Support	Please see attached letters of support.
Resource Discovery	Metadata will be embedded within the application & supporting website, including keywords and JISC identifiers to enable identification via online search engines etc. Key catalogues will be contacted personally as part of the dissemination plan.
Business Models & Sustainability	The resource will be free for UK FE & HE institutions and to LMA archive users. The cost of reserving an Amazon EC2 server for 6 years is included in the hardware costs of the project. A regular internet and tweeting presence will promote the application – which will continue after the project completes.

2 Quality of Proposal and Robustness of Workplan

1. To ensure timely delivery and facilitate ongoing project monitoring, the tasks are broken down into a series of 6 work packages (WP), with corresponding milestones

WP1 – Understanding and engaging users (Kate Jones): In parallel with all other work packages - end-users will be engaged in the project from the beginning. The users recruited via social networks will participate in interviews/survey/focus groups to explore what learners like and dislike in passive and active learning environments, as well as their mobile phone and mobile app usage patterns. These potential users will be crucial throughout the design, development and evaluation phase, enabling a constant feedback and iteration loop central to user centred design and development.

WP2 – Geographical & historical data integration (Kate Jones): This stage will be centred on the geographic referencing of the Digital London Bomb Maps in the GIS and the capturing of the buildings and street scale damage. Other identified data sources are the historical maps from Ancient Roam and contemporary crowd-sourced data from OpenStreetMap(OSM). The street network captured from OSM will form the geographical basemap from which derived data can be developed and uploaded into the spatial database. Outputs feed into WP4.

WP3 – Mobile Application Interface Design (Kate Jones, Patrick Weber) –completed as part of the iterative design model with WP4, this WP will follow a model of usability engineering, driven by the user requirements and interaction experience and testing which will be conducted continually.

WP4 – Mobile Application Development (Patrick Weber)- requirements from WP1 and outputs from WP2 will feed into this work package to develop the augmented reality application in parallel with WP3.

WP5 – Community Dissemination (Kate Jones and LMA)– continuous activity throughout life cycle of project. The project will be disseminated to the university via a series of lunchtime workshops and publicised to the wider academic /development community via formal conferences (eg GISRUK 2012; WhereCamp EU; Computer-Human Interaction) and a road show with the LMA. Project Progress will be disseminated via project website, blog/ Twitter and other social media activities.

WP5 – Copyright Agreement (Kate Jones and LMA) - This work package is concerned with collaborating with the partnership organisation to ensure the project works legally within the copyright associated with the original London Bomb Map.

2.1 Project Plan, Timetable & Deliverables

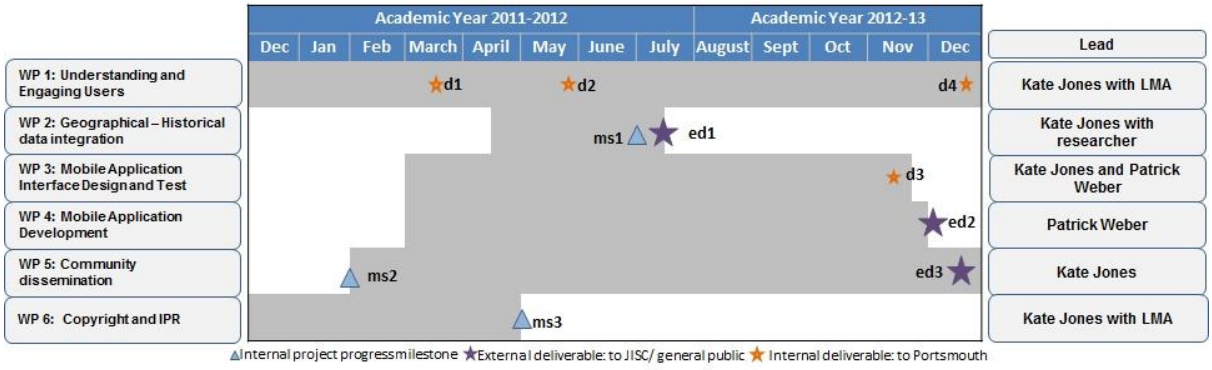

Figure 2: Plan showing timeframes and deliverables of the G^3 project lifecycle

Milestones	**Date**
MS1 – Internal - spatial data infrastructure complete	July 2012
MS2 – Project Blog, Website , Twitter	Ongoing
MS3 - data sharing agreement with partner	April 2012
Deliverables	**Date**
D1 – Internal - Volunteer user group established	Mid March 2012
D2 - Internal - Leaning activities defined	End May 2012

D3 – Internal – Application Testing Complete	Mid Nov 2012
D4 – Internal – Evaluation Experiment Complete	Dec 2012
DE1 – External – Tutorial available on iiglu website	July 2012
DE2 – External - Mobile Application developed	Nov 2012
ED3 – External – User Road Shows	Dec 2012

2.2 Project Management

1. The project will be led by University of Portsmouth. Weekly team meetings will enable a quick and flexible approach to evaluate progress, deal with issues and priorities. The team will use a shared Dropbox folder to share all project documents and data.

2.3 Risks

Risk	**Probability (P)** **Impact (I)** **Risk (R=P*I I)**	**Mitigation**
Subcontractor not available	P=2; I=3; **R=6**	Costs calculated so alternative to sub-contractor would be to recruit experienced research fellow to do this work.
Estimates in plan – miss deadline	P=1; I=5; **R=5**	All members of the team will be engaged in the planning process and an iterative development cycle to ensure early feedback and constant communication will maintain momentum (following AGILE)
Requirements Change	P=2; I=4 **R=8**	Requirements gathering & user engagement will be iterative. New requirements will be prioritised by the project team and impact on plan assessed.
Lack of User Engagement	P=2; I=4 **R=8**	A number of different mechanisms will be used to engage students and staff together as well are harnessing the team members personal academic networks UK and tutees.
Upgrades to Mobile phone technology/APIs	P=4; I=3 **R=6**	The developer will write code for the most current stable technology at the time of the work-package
Technical Problems with data clustering	P=2; I=3 **R=6**	This stage of the project will be led by the project lead who is an expert in working with disparate datasets
Application not suitable	P=1; I=5 **R=5**	User group will be engaged throughout the development cycle and participate and collaborate in design and testing

2.4 IPR position

1. The project team confirms that project outputs will be made available free at the point of use to all HE and FE institutions in the UK. Furthermore, the application will be made available for LMA registered archive users. All data with the exception of the London Bomb maps and historic Digimap (use of historic Digimap will be for UK HE AND FE institutions only). The project outputs – recorded tutorials and activities will be open to access under a Creative Commons license. The application will be released under a Creative Commons licence. This is in accordance with appendix B. A link to the application will be made available within the Jorum repository. WK6 – has been planned to ensure all necessary and legal agreements are in place with the project partner.

2.5 Sustainability - Beyond JISC Funding

1. The project outputs and deliverables will be made available free to HE and FE institutions in the UK. The application will be hosted on the Amazon EC2 server for 5 years after the end of the project (the cost of which has been incorporated into the project budget). This will ensure learners will be able to access the application long after the project funding. The latest Software platforms and API's will be utilised to ensure longevity of the project. The code will be documented and released to enable further work.

2.6 Community Engagement

1. Community engagement is inherent to the success of this project. Two workpages (WP1 & WP5) embed engagement. WP 1 runs throughout the project lifecycle and encompasses activities linked to understanding and engaging users through the formation of a user group: students, lecturers and archive users. WP5 – dissemination is an on-going task which includes the (1) maintenance of a project blog and tweets. Kate Jones and Patrick Weber are experienced at successful public engagement through conferences, social media and blogs. They currently contribute to the JISC G3 blog, which has had over 3000 views in 6 months with blog posts referenced on the OpenStreetMap Wiki and the GIS industry magazine Directions. Engagement will also happen through attendance at conference/ workshop/JISC events, as well a running lunchtime roadshows (costed in the budget).

3 Budget

1. Time Contributions by Team Members are shown in the table below:

Name	Grade	Project Role	Total Days
Dr Kate Jones	Grade 8	Project Leader, HCI & GIS Expert	95
Patrick Weber	Sub-contractor	GEO Web Developer/Expert	130
LMA	-	Project Partner	10– contribution in kind
Research Fellow	Grade 5	Data integration	90
volunteer user group	-	Volunteer users	13 (1 day per month)
Prof Richard Healy		Project Advisor	5

2. Breakdown of Requested Costs

It is not possible to quantify the contribution in kind provided by the university group of volunteer learners/staff & project advisor listed above, so are not listed in the costings below, neither is the cost of the digital maps which will be provided to the project by the partner LMA.

Directly Incurred Staff	**FY Aug11-July12 (8 months)**	**FY Aug 12 – July13 (5 months)**	**TOTAL £**
Staff – grade 5 (3 months)	£8407	£	£
Etc.	£	£	£
Etc.	£	£	£
Total Directly Incurred Staff (A)	**£**8407	**£**	**£**
Non-Staff	**November 2011– March 2012**	**April 2012-March 2013**	**TOTAL £**
Travel and expenses	£1231	£2769	£
Hardware/software	£12000	£	£
Dissemination	£462	£1038	£
Evaluation	£	£	£
Other – advertising(job)	£1000	£	£
Sub-contractor 1 (interface design and styling)	£	£8000	
Sub-contractor 2 (develop application)	£12,308	£27,692	
Total Directly Incurred Non-Staff (B)	**£27,000**	**£39,500**	**£66,500**
Directly Incurred Total (C) (A+B=C)	**£35,407**	**£39,500**	**£74,907**
Directly Allocated	**November 2011– March 2012**	**April 2012-March 2013**	**TOTAL £**
Staff	£7,360	£16,370	£24,151
Estates	£2,089	£4,674	£6,853
Other	£	£	£
Directly Allocated Total (D)	£9,449	£21,555	£31,004
Indirect Costs (E)	**£8,276**	**£18,880**	**£27,156**
Total Project Cost (C+D+E)	**£53,132**	**£79,935**	**£133067**

Amount Requested from JISC	**£42,506**	**£63,974**	**£106,453**
Institutional Contributions	**£10,626**	**£15,987**	**£26,613**
Percentage Contributions over the life of the project	**JISC 80%**	**Partners 20 %**	**Total 100%**
No. FTEs used to calculate indirect and estates charges, and staff included	**No FTEs** **0.4** **0.23**	**Staff:** **Kate Jones** **Research Fellow**	

4 Previous Experience of the Project Team

1. The **Stepping into Time** project team combines the strength of geography academics and geo application developers – Dr Catherine (Kate) Jones and Dr Patrick Weber have a combined experience of GIS use, teaching and software development (both commercial and academic) of 16 years. The team has specific expertise in geo-technologies and Human-Computer Interaction. Dr Jones and Dr Weber have worked together extensively over the years, including the design and development of a series of geospatial learning projects. These include three GIS courses for professionals (using proprietary software). Both are former knowledge Transfer Partnership (KTP) associates – with both KTP projects awarded a grade of outstanding (top 5% in the country). Jones and Weber each have expertise in developing practical geospatial solutions delivered over the internet using Geo-Web technology and open source software and are pioneers of the new geographic concepts learning environment (IIGLU) that is the output of the JISC funded project (G3 funded through the 11/10 geospatial call). They are interested in user centric design, having worked and published together on usability research associated with user generated content.

Dr Catherine (Kate) Jones is a lecturer in Human Geography in the department of Geography at the University of Portsmouth with 8 years expertise in delivering GIS projects, analysis and mapping solutions for variety of public sector bodies: local councils, London Metropolitan Police and NHS Primary Care Trusts. She is the successful co-investigator on the JISC Geospatial funded project (#JISCG3). Having been awarded her MSc in GIS in 2003, she completed her PhD in 2008 and worked as a post-doc, leading the GIS development of an interdisciplinary academic research project (2007-2009) - all at UCL. She is an expert within the field of cartography, usability analysis and useful and useable GIS for enabling and developing spatial capabilities for non-domain experts. She was the Knowledge Transfer Associate on the award-winning Camden Primary Care Trust KTP, embedding geodemographic and with public health. Prior to her academic career she worked in the City as a project planner and management information analyst – where she gained her PRINCE 2 Project Practitioner certificate.

Dr Patrick Weber is a postdoc researcher and geo-application developer consultant with 8 years experience in GIS, spatial analysis research and product development. He is a geography graduate with an MSc in GIS from UCL, and also in 2010 finished an Engineering Doctorate sponsored by the LDA's FDI investment promotion body. His research is looking at FDI business site selection in London. Apart from his knowledge in the analysis and support of business location decision making, and user requirements specification using Personas and AGILE approaches, Patrick has extensive experience in the creation and delivery of GIS projects. This includes the design, development and implementation of spatial analysis services and interfaces, as well as the design of bespoke training courses, most significantly the design, development and delivery of a two-day "Introduction to Manifold GIS" residential course, and a distance learning course for MSc students on PostgreSQL and its spatial functionality. He is the application developer on the #JISCG3 project.