

Travelers in the Middle East Archive (TIMEA):
Integrating Texts and Images in DSpace with GIS and Teaching Resources
Poster Proposal

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Like other digital archives, the Travelers in the Middle East Archive (TIMEA) acts as a repository for digital texts and images, in this case works documenting travel to the Middle East between the 18th and early 20th centuries. In TIMEA (<http://timea.rice.edu>), sponsored by the Institute of Museum and Library Services and Rice University's Computer and Information Technology Institute, one can find digitized versions of historic stereocards and postcards depicting such sites as the pyramids and the sphinx, along with TEI-encoded texts such as travel guides, travel narratives, and scholarly works.

Yet offering access to unique sources is only one of the project's goals. TIMEA, which is based at Rice University, also aims to provide valuable resources for teaching; improve information literacy and research skills; offer a model for building learning communities that use electronic resources; and develop innovative mechanisms for using GIS tools in cultural heritage projects. Thus TIMEA demonstrates the geographical nature of its focus by creating dynamic GIS maps that combine geospatial data such as elevation and water with layers displaying different historical maps and travel and trade routes. In addition, TIMEA addresses the critical need to cultivate information fluency and research skills and build learning communities. As studies have found, students lack essential skills in finding and using information: "University libraries have outstanding information resources available to their student populations... and they have powerful tools for accessing these materials... but many college students are either unaware of these resources or they do not know how to use them" (Quarton 120). By creating research and teaching guides, TIMEA develops fundamental methods among students at the same time that it gives access to a particular body of material. These guides are presented in Connexions (<http://cnx.rice.edu>), an open, collaboratively-authored repository of electronic course materials.

To deliver the texts and images, TIMEA uses DSpace, an open-source digital repository system. The choice of DSpace was driven by several factors: it is open-source, supports the Open Archives Initiative (OAI), and provides a long term archiving solution that will ensure access to the TIMEA digital assets well into the future. Moreover, Rice University's Digital Library Initiative recently adopted DSpace, making a commitment to support and develop the system. Initially DSpace was designed for research materials and scholarly papers, so it currently has several limitations for digitization projects: support for viewing XML documents in a user-friendly way is not yet available, there is limited support for structural metadata, and the interface design cannot easily be customized for each community within an institution's installation of DSpace. However, institutions such as Texas A & M and the University of Rochester are beginning to experiment with using DSpace for archives of digitized materials. TIMEA and Rice are contributing to these efforts by addressing the problems of XML support and interface design. In collaboration with Texas A & M, Rice is working on providing a customizable user interface for each DSpace community that is driven by Cocoon and XML, which will allow TIMEA to have its own unique look and feel. Likewise, Rice is developing support for XML publishing in DSpace. We are awaiting METS support for structural metadata, which is currently being developed and will be included in a future DSpace release.

By bringing together multimedia resources such as XML texts, digital images, and GIS maps with teaching and research modules, TIMEA faces a crucial challenge: integration, both technical and intellectual. In so doing, TIMEA is building on the work done by complex digital projects such as the Valley of the Shadow and Perseus. TIMEA content resides in three separate systems: texts and images in DSpace; GIS maps in ESRI's ArcIMS map server; and research and teaching modules in Connexions. By using these systems, TIMEA can leverage the unique functionality offered by each. Since TIMEA is an ongoing project, its technical team continues to explore the best means for integration, such as a web services solution that leverages the availability of data in each system in XML. In large part, success depends upon active collaboration among the various contributors, including the GIS team, digital library systems developer, project managers, Connexions staff, and module authors. To provide interlinking among the texts, images, and Connexions modules, the project team is taking advantage of the permanent URIs for digital objects generated by DSpace and the rich linking capabilities for research modules in Connexions. In order to connect GIS maps with texts, the GIS support specialist has authored a program that automatically drops in links to map locations in the XML files based on place names. So that users can seamlessly navigate TIMEA's various elements, the digital library systems developer is working on the aforementioned project to provide a customized web interface in DSpace.

Even as the TIMEA team works through the technical issues of integrating a complex archive, it also faces questions about how to realize the project's scholarly and educational goals and serve its user community of teachers, students, researchers and museum professionals. How can the research and teaching modules be used to augment rather than overdetermine students' understanding of TIMEA materials? How can TIMEA provide links among the various components that lead to new understanding rather than overwhelm the end user? These questions are being addressed through collaboration among the project team members, active consultation with scholars and teachers, and user testing.

As a whole, we hope that TIMEA's components will come together to support the project objectives in a way that highlights the scope and depth of available resources. As a contribution to computing in the humanities, TIMEA is an example of how diverse resources can be integrated to enable more sophisticated means of conducting scholarly inquiry.

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