Final Report: 2011 CAP Grant: Quality and Data Exchange Tool Design for United States Thoroughfare, Landmark and Postal Address Data Standard

Category 2: 2011

NSDI Cooperative Agreements Program
FGDC-endorsed Standards Implementation Training and Outreach Project
Final Project Report

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Project title: Quality and Data Exchange Tool Design for United States Thoroughfare, Landmark and Postal Address Standard – Final Report
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Collaborating Organizations: None

Executive Summary

The project had two major objectives: to develop a prototype application that would provide a web and mobile device-accessible version of the Standard, with hyperlinks to elements, attributes, quality tests, and other parts of the Standard, and to develop a prototype application for extracting address information from a variety of unstandardized sources, and translating it for loading to an FGDC Address Standard compliant database. Both of these objectives were met during the project, and both are now in the process of further development.

Project Narrative

Two teams were created, one for each of the applications. A number of challenges were identified, primarily in seeking to use open source tools and programming that would be sufficiently robust, and that could operate in a variety of environments.

1. The group working on the "accessible" and "searchable" Standard found that many of the initial ideas about the way in which the application could be developed simply proved unworkable, due to the size and complexity of the Standard (over 600 pages in PDF form). However, the group tested the J-Query accordian software and found that it managed most of the standard very well, and with high speed. A great deal of work was required in conforming the original wiki version of the standard with the look and feel of the PDF version, because the PDF lacked all of the hyperlinks that had been used within the original wiki development environment. Each hyperlink had to be tested. Additionally, the search functions needed to be created based on key words and other index items found in the Standard. By the end of the grant period, this application was functional, although additional work on the indexes supporting the search functions, and on a few parts of the standard (notably the XSD and UML diagrams) that were not yet indexed nor reliably searchable.

2. The group working on the tools for extraction, standardization, and transfer also encountered some problems with programming languages that were sufficiently capable of managing the complex parsing and management of the address data themselves. A number of different solutions were tested before arriving at one which does perform as required. There are still a number of items to be resolved in this prototype, but overall, it appears that the application can be completed and used effectively.

Major deviations: None. A 3 month no-cost extension was requested due to the difficulties (noted above) with finding appropriate code to perform the functions in an acceptable manner.

Public Access to the Application Prototypes: The applications are provided at no cost through www.spatialfocus.com, www.urisa.org, and can be placed on www.fgdc.gov's website also. Work continues on both applications, and updated versions of the code will be uploaded as appropriate.

Next Steps

1. **Continuing activities:** Both applications continue to be developed. Both were presented to a group of employees at the Census in late August, 2012. It is expected that Census will use both applications as they become sufficiently stable and well-packaged. The teams continue to work toward that objective.
2. **Transfer of knowledge acquired**: Spatial Focus presented these application at the URISA/NENA Addressing Conference in August 2012, and has continued to present information to the community (see previous item). There has been considerable interest from Census, and from a number of State and local governments about the use of these tools. Both tools will have documentation to assist users in becoming familiar with them as they become ready for general use.
3. **Organizational Relationships Established:** Spatial Focus worked with the Louisiana Geographic Information Council (LAGIC) and Louisiana State University, conducting 2 workshops on the Address Standard and tools for its implementation in February and April of 2012. Through our connection with URISA, webinars and other presentations have been, and continue to be made on the CAP Grant, the tools in development and the Address Standard. At present, through a client relationship, the State of Oregon is implementing the tools within its Geographic Information Office.
4. **Next Phase:** Spatial Focus will continue to work on the development and enhancement of the tools. This is a continuation of the volunteer efforts to develop the FGDC Thoroughfare, Landmark and Postal Address Data Standard, and our FGDC funded work on these implementation tools. We will primarily want to test the usefulness and functionality of the tools with a wide variety of clients at all levels to ensure that they accomplish their stated purposes.
5. **Project Needs**: Willing partners to test the applications, and provide feedback to improve their functionality. Additional assistance from the GIS/Addressing community on enhancement and further development of the tools through use and communication among the user community. Due to restrictions on our receiving an additional grant through the CAP Program, FGDC's help is likely to be limited to publicizing the tools and providing them to users in different settings for testing and feedback.

Feedback on Cooperative Agreements Program

1. **What are the CAP Program strengths and weaknesses?** Not really sufficient funding to do very much work. Helpful to get things started, and to do surveys and planning, but not significant in terms of costs of developing software that is fully functional. Also, not much effort was made by FGDC to bring various CAP grant recipients together to share information, results, etc. Our collaboration with the LAGIC project really grew out of the existing URISA and NSGIC relationships between the primary investigators on the two projects, not because FGDC facilitated it.

2. **Where did it make a difference?** Provided some funded time for our personnel to work on these applications over a year, and to test possible solutions.

3. **Was the assistance you received sufficient or effective?** The assistance was effective in providing time for our team members to work on the applications. However it was not sufficient in that it could not fund the development of either application beyond a prototype, given the total dollar amount and the cost of the staff members involved.

4. **What would you recommend that the FGDC do differently?** We would recommend that FGDC look at increasing the amount of funding, or limit the number of projects to increase the award amount to each. Overall, the work that can be accomplished over a year for $25,000 plus a 50% match (total of $37,500) on a software development project is fairly trivial.

5. **Are there factors that are missing or are there additional needs that should be considered?** No.

6. **Are there program management concerns that need to be addressed, such as the time frame?** No.

7. **If you were to do the project again, what would you do differently?** Define expectations about the final deliverables more carefully. We worked towards having a fully functional pair of applications, rather than a conceptual prototype. This resulted in spending much more time on the project that was actually allocated through the grant. We are glad, in the end, to have done that, but the sense of needing a finished product through this grant made the time frames more difficult to meet.