

Geospatial Solutions in the Cloud: What Agency Moves are Telling Us

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Several years ago, geospatial technology was touted as the new must have capability. Federal agencies agreed and today every department operates a geospatial program to one degree or another. Geospatial data is now also one of the areas where a shared services approach is being implemented in earnest. The [Geospatial Platform](#), a program run by the partner agencies of the [Federal Geographic Data Committee \(FGDC\)](#), collects agency data and makes it available to users as a [cloud service run by the General Services Administration](#). The shift of geospatial services to the cloud is an under-the-radar step in the evolution of federal cloud computing. Halting agency efforts to move email, collaboration, and content management capabilities to the cloud get much more attention and yet the development of cloud-based geospatial services is arguably more important because geospatial data interfaces with many mission critical capabilities. The movement of these capabilities to the cloud blazes a trail for the migration of other mission critical applications. Similarly, the sharing of geospatial data by agencies illustrates the viability of a shared services approach, a path other applications are sure to follow.

Despite the move toward shared services there is also a contrary trend to consider. Some agencies are either migrating their geospatial data to the cloud independent of FGDC related efforts or they have been acquiring cloud-based geospatial capabilities into their own data centers. By my count six agencies so far have begun testing or otherwise working with geospatial capabilities in the cloud. Table 1 below lists the agencies and the names of the projects.

Department/Agency	Project Name
U.S. Army	Army Geospatial Center BAA
NASA	Climate at Home Geospatial Services
NASA/Goddard	SERVIR Geospatial Services
DHHS/NIH	ARCGIS Cloud Services
DOE/NNSA	iSituational Awareness Geospatial Application
Commerce/NOAA	Cloud Based GIS Server Resources
DOT	Geospatial Services Platform
USDA/Forest Service	Western Wildland Threat Mapper

Table 1: Federal Agency Geospatial Cloud Projects

What exactly are these projects and what can being familiar with them tell us about the ongoing evolution of the federal cloud market? Details on most projects could not be found, but information is available for a couple of them. Even this limited data, provides insight into how the landscape of cloud-based geospatial capabilities is changing and where viable future business opportunities may be found.

U.S. Army Geospatial Center Broad Agency Agreement

This BAA, awarded to LMN Solutions in April 2012, is a consulting engagement intended to help the Army Geospatial Center understand how cloud computing can be used to fulfill the mission goals of the Army Geospatial Enterprise. The AGE supports the “Army’s Mission Command networks and systems by facilitating the dissemination of relevant geospatial information to every echelon across the operational environment.”

Implication – The Army is actively researching the viability of using cloud solutions in tactical combat environments. Geospatial data is already critical for combat operations, but delivering this data via the cloud is new for the Army. The result of these research efforts could be future investment in cloud services for the AGE, if not for other elements of Army Mission Command as well. Vendors positioned to provide these solutions, especially with zero or near zero-latency, may be able to develop business in this area. The demand is clearly there.

NASA Climate @ Home Program

Although this market research released in 2011 did not turn into a formal contract opportunity, the research announcement indicated NASA’s interest in how a cloud-based approach could be used to collect and process climate data. The idea behind the project was to build a virtual climate simulation supercomputer that incorporated local citizen input on climate change, resulting in the development of new climate change models and simulations that utilize geospatial data. The data, processing power, and visualization capabilities requested were to be provided in a cloud environment.

Implication – NASA’s Climate @ Home approach illustrates the rapidly approaching nexus of cloud computing and big data. NASA never proceeded with the project, but the interest expressed in the market research shows how agencies like NASA are looking for new ways to collect, parse, and analyze data via the cloud. Many of the desired goals and capabilities listed in the Request for Information fall under the category of big data analytics. I suspect the Climate @ Home RFI is but a sample of the demand at agencies with scientific missions for analytics solutions in the cloud. Vendors that can demonstrate value and a rapid Return on Investment of cloud-based analytics that work with geospatial data will certainly find interest at NASA, the DOE, and elsewhere.

