

# The Federal Aviation Administration Turns to the Cloud for NextGen Solutions

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It has been 14 months since the Federal Aviation Administration (FAA) published its cloud computing strategy. In that time, the agency has made progress toward using cloud solutions on a large-scale. The going so far has been slow, just as the agency promised it would be in its strategy document, and as former acting DOT CIO Tim Schmidt reiterated at an industry event in January of this year. Recent events suggest, however, that the FAA is poised to enter the cloud market in a big way, providing business opportunities for infrastructure providers and systems engineering firms alike.

## FAA Cloud Services

In terms of infrastructure, the FAA has settled on a strategy that leverages an industry partner capable of hosting government owned computing and storage hardware in a commercial facility. The selected partner will also provide additional cloud infrastructure as required, as well as platform-as-a-service (PaaS) and software-as-a-service (SaaS) cloud services. These services are all required as part of a large acquisition the FAA is conducting for **FAA Cloud Services (FCS)**. After releasing a Request for Information for FCS in July 2012, there had been little activity associated with the procurement. Then, in April of this year, the agency released a draft procurement package outlining the requirements in greater detail. This package makes it clear that much like the Intelligence Community and the Department of Defense, the FAA will spend a majority of its cloud dollars in the near-term on industry provided infrastructure. Additional cloud services, e.g., the migration of applications, will be required as the model proves itself. The industry partner will also be required to ensure that the facility and services provided operate smoothly with the FAA's Telecommunications Infrastructure (FTI) and other networks and systems. The solicitation for FCS is currently anticipated to be released in August 2013.

## Systems Engineering Efforts

This brings me to the other cloud-related efforts underway at the FAA. The most important of these is the System Wide Information Management, or SWIM, program. SWIM was developed on a service-oriented architecture to be a data sharing hub between the various elements of the Next Generation Airspace Transportation System (NextGen). The effort to cloud-enable SWIM has been underway since 2011, with work being performed by Noblis (Order #18 on contract #DTFAWA11D00051) and the North Star Group (Order #2004 on contract #DTFAWA10C00032). The SWIM program has been **well over budget and it is years behind schedule**. Currently, the SWIM program office anticipates Segment 1 of this system will be fully operational in FY 2015. Presumably work on Segment 2a, introducing an enterprise messaging system via nodes in the National Airspace System, will also have begun by this time. My expectation is that SWIM will be hosted in the FCS cloud facility.

Another system that appears destined for the cloud is the **Common Support Services-Weather (CSS-Wx) program**. CSS-Wx is intended to be the single source of aviation weather information for the FAA and the data will be distributed via the SWIM system. So, work will be required to engineer CSS-Wx for interoperability with SWIM. CSS-Wx also will be hosted in the facility provided by the FCS vendor.

Finally, there is the **Aeronautical Information Management Modernization (AIMMS2)** effort to consider. AIMMS2 provides an automated interface through which "Management of Airspace for Special Use Special Activity Airspace (SAA) assignments, schedules, coordination, and status changes" are communicated. Like CSS-Wx, AIMMS2 is supposed "to take advantage of FAA-provided cloud infrastructure for its implementation," and it leverages the SWIM program for data sharing, meaning that it too will require development, testing, and engineering to be interoperable.

These efforts illustrate that work related to both NextGen and cloud computing is beginning to appear in FAA procurements. Industry should expect more projects to appear in the years to come, as the FAA gets its cloud infrastructure established and gains experience with a cloud-based approach. This is a welcome surprise in a market where finding business opportunities can be challenging, particularly because as of last year it appeared that the FAA was going to use its own internal cloud infrastructure to host NextGen components. One other thing to note about these efforts is that the FAA is not thinking short-term for them. The potential duration of the FCS, CSS-Wx, and AIMMS2 awards is in the range of 10 years apiece, so vendors who lock up this work will have it for a long time.