

Big Data and Cloud Computing at the Heart of the Army's Distributed Common Ground System

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In a federal market under tremendous fiscal pressure, the Army's Distributed Common Ground System (DCGS-A) program stands out for its visionary approach to the use of cutting-edge technology solutions. Over the next few years, the consistently well-funded DCGS-A program will seek to make even more extensive use of big data tools, like advanced analytics and visualization applications, hosted and delivered in a cloud setting. These capabilities will provide a consistent stream of intelligence data to Army intelligence, joint Defense components, and the intelligence community, making the DCGS-A one of the most intriguing and forward-looking programs currently in existence.

At the end of last August, the Project Manager Distributed Common Ground System - Army (PM DCGS-A) and TRADOC Capability Manager for Sensor Processing (TCM-SP) hosted an industry event called the 2013 DCGS-A Innovation Showcase. Speakers at this showcase outlined the way ahead for the Army's iteration of Distributed Common Ground System. The presentations included multiple discussions of upcoming requirements and capabilities.

For those not familiar with it, the DCGS-A is a single system that receives data from multiple types of sensors. This includes data from aerial and terrestrial platforms (e.g., drones and vehicles), from individual soldiers, and from national level intelligence sources. The system enables this data to be easily shared across the joint Defense environment and with coalition partners while enabling multi-disciplined analysis that fuses signal data, imagery, and human intelligence into a common data product. Every branch of the Armed Services has a version of the DCGS, making it the de facto tactical intelligence network for the Department of Defense.

The Army's portion of the DCGS appears to be the most highly evolved, a status that has attracted the attention of Congress for cost overruns and problems with interoperability. This said, the DCGS-A continues to be one of the Army's top priorities and largest investments. The Army has, for example, requested more than \$295 million for DCGS-A in FY 2014. Best of all from an industry standpoint, 100% of these dollars are slated for Development, Modernization, and Enhancement (DME). DME dollars tend to flow into contracts so this is good news in an overall shrinking market. Finally, to illustrate just how important the DCGS is to the Army and the DoD, funding for the system in FY 2012 and FY 2013 totaled \$239.3 million and \$225.3 million respectively. Again, all of these dollars were for DME so even in the leanest of fiscal years, large amounts of money have continued to flow into the program.

Why has the DCGS-A program been so well funded? Simple. It is critical to the national security of the United States. The DCGS-A program is also notable for its employment of the most forward-looking technologies, including cloud computing and big data analytics. For example, according to the presentation given by COL Dave Pendall, the Army G2 Liaison to MIT Lincoln Laboratory, the requirements forecast for the DCGS-A include

- Real-Time Distributed Cloud Architecture and Analytics
- Sensor Situational Awareness, Sensor Collaboration, and On-Board Processing
- Collaboration Technology and Data Fusion Visualization Tools
- Identity Intelligence
- Network / Data Security Advancements for the Distributed Enterprise at Network Speed

The way ahead for the system is also anticipated to include work developing an interface between the DCGS-A cloud and the Intelligence Community IT Environment (ICITE) cloud. This interface will enable data from the DCGS-A to be stored in the hosting infrastructure provided by the National Security Agency (NSA).

This brings us to the question of procurement. The PM DCGS-A makes use of a large variety of acquisition avenues to buy what it needs. Covering all of these avenues is beyond the scope of this brief blog post, but there is one contract vehicle worth mentioning that the PM likes to use most frequently - the Army's Strategic Services Sourcing (S3) multiple award IDIQ contract. Over the lifetime of S3, spending related to DCGS-A amounts to approximately \$1.6 billion. Much of this earlier spending was for systems integration efforts. Future spending is likely to be related to data fusion efforts (i.e. data cleansing, interoperability, metadata tagging), additional analytics for full motion video analysis, and enhanced geospatial capabilities. Therefore, to maximize potential for winning business with the PM DCGS-A, one of the DoD's best funded programs, competing for the next iteration of S3 is essential.