Los Angeles County Registrar-Recorder/County Clerk

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Registrar-Recorder/County Clerk

December 21, 2017

TO: Supervisor Sheila Kuehl, Chair
Supervisor Hilda L. Solis
Supervisor Mark Ridley-Thomas
Supervisor Janice Hahn
Supervisor Kathryn Barger

FROM: Dean C. Logan, Registrar-Recorder/County Clerk

NOTIFICATION OF ACTION TO AMEND CONTRACT FOR ENTERPRISE SERVICES MASTER AGREEMENT (ESMA) WORK ORDER 2016-010 FOR THE VOTING SOLUTIONS FOR ALL PEOPLE (VSAP) PROJECT IMPLEMENTATION PLANNING TO INCREASE WORK ORDER AMOUNT AND EXTEND TERM

This is to notify your Board of the intent by the Registrar-Recorder/County Clerk (RR/CC) to amend ESMA Work Order Number 2016-010 with Digital Foundry as part of the County's VSAP Project per the "5.3 Changes of Scope" section in the Statement of Work. The RR/CC will extend the current contract for a four-month period at a cost of $2,800,000 bringing the work order total to $3,695,000.

As discussed at the November 30th Operations Cluster meeting, the implementation strategy of VSAP involves rolling out the various components of the new voting experience in multiple phases. While the County solicits for the services of a system integrator to manufacture the Ballot Marking Device (BMD) and other components to be used in Countywide vote centers in the 2020 election cycle, the Department intends, in the 2018 election cycle, to roll out the new Vote by Mail (VBM) voting experience as well as the new Tally system required to read and tabulate the voted VBM ballots.

Extending the engagement with Digital Foundry will allow the County to increase the momentum of Tally solution development and to release Version 1 by March 2018, in time for certification testing and approval for use by the California Secretary of State (SOS). It will also reduce risk by establishing consistent stewardship through development and testing, and the onboarding of an accredited Voting Systems Test Lab that will, among other things, conduct proactive security testing on the Tally system, prior to seeking approval for use from the SOS.

This first release of the Tally system will also establish the foundation upon which to subsequently contract for the development of the final production Tally system, which will be integrated with the overall VSAP solution, and support the implementation of the BMD voting experience in vote centers in the 2020 election cycle.

Further Time and Resources Needed for Tally Development

The Department is working aggressively to meet its goals of phasing in VSAP in 2018 and completing full implementation in 2020. Leveraging the Department's recent development of an Advanced Proof of Concept of the Tally software design, which successfully demonstrated the end-to-end feasibility of VSAP ballot processing, Digital Foundry has been leading and guiding the software engineering effort to architect and implement a scalable and robust VSAP Tally solution.

The solution will employ industry-standard, managed open source software that adheres to the Voting System Principles established at the foundation of the VSAP and ensures that vote counting is accurate, transparent and auditable down to the individual ballot. For more information about this innovative election technology solution, please see the attached Overview of VSAP Tally.

This amendment ensures that the Digital Foundry team stays in place to work continuously with the County on Tally development, preserving the institutional knowledge of the team, and ensuring the strict timelines of Tally testing and roll out are met. Retaining a team familiar with Tally's implementation will maximize the efficiency of adapting to changes that will be introduced as other components of the VSAP solution, especially the BMDs, are developed.

Keeping the team together also increases the predictability of the implementation timeline, and leads to more efficient use of resources. Finally, the continued co-development of the Tally system in an Agile framework provides the County team coaching and guidance to improve and take ownership of the development process.

Successful execution and completion of Work Order 2016-010 with Digital Foundry will result in the development and testing of the Tally component of the VSAP voting solution, and the rollout of new VBM experience in time for the November 2018 Gubernatorial General Election. It will also set the stage for the subsequent contracting and development of the final production Tally system integrated with the overall VSAP solution for the 2020 election cycle.

c: Chief Executive Office
Executive Office, Board of Supervisors
RR/CC Board Deputies
County Counsel

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Overview of VSAP Tally

A critical piece of Los Angeles County's Voting Solutions for All People (VSAP) is the VSAP Tally solution, which scans the ballots and tabulates the votes. The Tally system is both unique and innovative, and like other components of VSAP, is challenging the elections industry to look at the design and engineering of voting solutions in a new and modern way. It has enormous potential to make a positive impact on voting systems development and implementation both in California and throughout the United States.

Agile Development

The RR/CC has partnered with Digital Foundry to co-develop the VSAP Tally system using an Agile software development methodology. Agile is a proven methodology for ensuring that the County, as the product owner, iteratively builds a solution that meets its requirements while adapting quickly to changes in priorities and technical understandings.

Built with Security and Auditability in Mind

Through the Digital Foundry engagement, the RR/CC is procuring the services of an accredited Voting Systems Test Lab to proactively test and verify that security and coding best practices are built into the Tally system from the ground up, and that it exceeds California Voting Systems Standards requirements (CVSS) for accuracy and performance. Moreover, the Tally system features an innovative ballot identification process that supports end-to-end traceability and auditing of individual ballots, and the implementation of risk-limiting audits.

Designed for Scalability and Flexibility

Unlike any other tally solution available, the VSAP Tally architecture utilizes modern message brokering and containerization technologies, making it a highly flexible and scalable system. Ballots are processed through a series of services, each supported by a different software component. If the queue of ballots waiting for a service grows too long, additional components can be resourced to the service to ensure faster processing of ballots. Because the software components are containerized, it can be scaled down to run the entire system on a laptop, or scaled up to run across multiple servers, to meet the administrative needs of the election. Components can even be geographically distributed to allow for scanning and processing of ballots at multiple locations around the County.

Open Source Platform

The Tally system architecture is the first of its kind implemented using an open source software stack. Open source software ensures the integrity of the Tally system by allowing for transparency and visibility into how it works, while also safeguarding the solution as a publicly-owned asset. Apart from the custom Application Layer, the entire stack is acquired from professional and highly-regarded open source software solution providers, such as Apache and Docker, who manage the code base of their solutions to ensure their quality and security. Further, these open source products are proven, industrial grade solutions. Major corporations, such as Netflix and Salesforce, employ similar architectures built on these and other open source platforms to deliver secure, high performance, and high availability services around the globe.

The diagram below illustrates the different layers of the VSAP Tally system software stack.