★VIRGINIA★
STATE BOARD *of* ELECTIONS

Commonwealth of Virginia
State Board of Elections

Response to the

Defense Human Resources Activity - Federal Voting Assistance Program's
Electronic Absentee Systems for Elections Grants for States, Territories and Localities

Volume I – Technical Proposal

Title:
Virginia Comprehensive UOCAVA Voter Life-Cycle Portal Project and the Evaluation of Technology Options for Advanced UOCAVA Solutions

CFDA: 12.217
BAA: HQ0034-FVAP-11-BAA-0001
CAGE: [redacted]
DUNS: [redacted]

Contractors and Sub Recipients:
Microsoft Corporation
Democracy Live
Open Source Digital Voting Foundation
Scytl
ES&S

Proposed Period of Performance:
~~August 2011 – July 2016~~
31 October 2011 - 30 October 2016
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Submitted on: July 13, 2011

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Technical Approach and Justification

1. *Executive Summary*

This application is presented by the Commonwealth of Virginia (VA) State Board of Elections (SBE) to request funding in support of our acquisition and implementation of a comprehensive set of Web-delivered voter services for the complete Uniformed and Overseas Citizens Absentee Voting Act (UOCAVA) voter life-cycle, from voter registration and ballot request through balloting and ballot tracking. The complete solution set will consist of web-based electronic ballot delivery system for our military and overseas citizens, supported by a Voter Portal service for registration and eligibility assistance, and underlying technology for consolidation and analytics of usage data both from voter services and from existing VA election systems. In addition, we will evaluate additional technology options for UOCAVA voters. Our goal is to provide greater access to online tools in order to make the voting process easier to qualify for, simpler to maintain eligibility for, and easier and simpler for our UOCAVA voters to use. In the course of doing so, we also expect to make it easier for the SBE and Federal Voting Assistance Program (FVAP) to extract UOCAVA reporting data and allow stakeholders to receive a complete view of UOCAVA voter activity in any election cycle, both via reporting functions and via direct access to consolidated data published in common data formats.

The vendor we have selected for the voter life-cycle portion of the project is Microsoft Corporation (MS), in partnership with Democracy Live and the Open Source Digital Voting Foundation (OSDV). The MS-Democracy Live-OSDV team will extend and integrate existing technologies for online identification of VA voters, for classification of voters under VA election law, for voter registration and other forms of UOCAVA eligibility assistance, and for logging of voter usage of online voter services and voter registration record information.

The Voter Portal technology and the Analytics technology were developed by OSDV, and include (a) voter registration forms assistance developed on behalf of RockTheVote, (b) VA-specific voter eligibility assistance developed in conjunction with Credence Solutions for the SBE with funding from FVAP, and (c) voter record request common data formats developed in collaboration with Overseas Voting Foundation and submitted to the IEEE 1622 working group as the basis for data standards. These technologies will be integrated with existing VA systems and extended to support VA's specific requirements for electronic ballot delivery service.

VA will also be working with Scytl and ES&S to advance the body of evidence for the use of assistive and secure technologies for elections. This partnership will enable VA to participate in any FVAP demonstrative projects with deployed VA military units as well as pilot projects with VA or overseas military hospitals to enable wounded veterans to complete their own ballots, regardless of their injuries. In addition, VA and Scytl will work to develop documentation and evidence to assist VA in obtaining legislative approval to engage with any FVAP pilot project that would allow secure electronic transmission of ballots by UOCAVA voters.

VA is grateful for the opportunity to apply for the Electronic Absentee Systems for Elections (EASE) Grant. We look forward to working with the FVAP and contributing to FVAP's one-stop portal for millions of UOCAVA voters. It is our desire to join with the FVAP to ensure our military and overseas voters are able to cast their ballot, and have it counted, from anywhere in the world as easily as if they were voting in person at a polling place.

2. *Goals and Objectives*

The primary goals of the project are to grow VA's active UOCAVA voter base, and to gather and provide comprehensive data detailing UOCAVA voter activities. Specifically;

- Develop and deploy new systems, integrated with existing SBE systems, and providing Web-delivered voter services for the complete UOCAVA voter life-cycle, from voter registration and ballot request through balloting and ballot tracking.
- Develop and deploy innovative data integration between new and existing systems, to provide comprehensive data gathering of all UOCAVA voter services activities for an election cycle, integrated and published using standards-based public data formats
- Reduce our overall long term costs of managing and supporting MOVE Act compliance and UOCAVA services.
- Evaluate additional advanced technology solutions for UOCAVA voter participation.
- Develop additional evidence and documentation to assist SBE in obtaining legislative approval for secure ballot return for UOCAVA voters.

Key objectives for this project include:

- Provide a turn-key tool for citizens of Virginia to register to vote, determine their UOCAVA eligibility, complete an absentee ballot application and complete an absentee ballot if eligible.
- Improve ballot access for VA's UOCAVA voters, while at the same time, providing a positive solution/experience for the local election officials (General Registrars).
- ~~Provide a means for VA to deploy a "kiosk" version of the solution with deployed VA-based military units.~~
- Provide a solution that VA can build upon in the future as legislative needs catch up with the available technology.
- Provide an overall long term cost-effective solution for VA elections.
- Provide analytical information regarding the usage of the solution.
- Identify and pilot advanced technology solutions for UOCAVA voters.

To successfully meet the above stated goals and objectives for Virginia the resulting solution must offer:

A Reliable, Proven System

Our vendors and their proposed systems have been proven in VA and beyond: LiveBallot has been used in over 200 U.S. elections, delivering ballots to thousands of voters in over 60 countries since 2008; OSDV open source technology managed the complexities of the entire voter database of VA, VA's electoral structure and VA's law and regulations for UOCAVA eligibility.

LiveBallot is hosted on MS' Windows Azure platform, providing 99.99% up-time reliability. Windows Azure delivers millions of transactions each month and is capable of automatically scaling up to meet any influx of voters to the system. Likewise, the OSDV-delivered Portal and Analytics components will also be hosted with MS' scalable hosting services.

Improve the Voting Experience for Our Voters

LiveBallot offers a variety of features and functions that directly improve our voters' balloting experience. By providing an easy to use, online interface for our voters, they can access their ballot at their convenience. This is especially important to overseas military voters who have unpredictable schedules. The LiveBallot administrative interface allows us to customize the way information is presented to our voters, all text and messages, and even the way our LiveBallot site interacts with our voters.

Reduce the Failure Rates of UOCAVA Voters

This proposal has the specific goal to increase the success rates for our UOCAVA population at each stage of the absentee voting process. The key areas of focus are voter registration, ballot delivery and ballot return.

This grant will enable us to deliver new initiatives and technologies to meet our goal of eliminating the gap between our domestic absentee and UOCAVA voters. Grant funding will allow us to provide voters with an intuitive process to register online and receive notification of ballot availability. In addition it will greatly improve the speed and accuracy by which ballots are delivered to and from our UOCAVA voters.

Provide a UOCAVA Solution Capable of Advancing with Technology

LiveBallot is built on a solid core foundation with a robust *modular architecture*. LiveBallot's modular architecture provides three key advantages: reliable updates, components that can be enabled when we are ready, and the addition of features and improvements over time. The MS team is able to keep our solution current with the latest LiveBallot updates while continuing to build new features and improvements to meet our future needs.

The LiveBallot team understands the dynamic nature of technology and its effect on the election process. They understand our desire to utilize the best technology, as well as the necessity of never disrupting the voting process. The LiveBallot architecture will enable us to achieve both of these objectives while delivering uninterrupted content to our voters.

Save on Costs and Overhead

LiveBallot utilizes the cost benefits of a cloud based solution by using MS' Windows Azure platform. Using a web-based application, we do not need to acquire additional IT personnel, purchase or maintain any server equipment, spend time developing and testing software, or worry about managing updates. Additionally, when an election drives heavy voter traffic, we are not limited due to pricing plans or server resources, nor will we incur extra charges due to high bandwidth usage.

UOCAVA Improvement Projections

We project that by fully deploying this new technology, we will dramatically streamline and speed the balloting process for our UOCAVA voting population, as well as the save significant staff time complying with the new mandates of the MOVE Act.

- We anticipate our ballot return rate will improve by well over 50% with the goal of eliminating the ballot return gap between UOCAVA and domestic voters.
- We anticipate UOCAVA voter registration and participation will increase by over 35%

- We anticipate our ballot requested to ballot tabulated rate will climb by over 40%.
- We anticipate voter confirmation (ballot tracking) will climb over 75%.
- We anticipate that our UOCAVA assessment reporting metrics to FVAP and data aggregation tools will be dramatically improved, with reporting enhanced by over 75%.
- We anticipate improving the ballot return rate for UOCAVA voters by over 50% over the next election cycle, ultimately getting to a point where there is a zero gap between UOCAVA voters and domestic voters by 2016.

2.1 Comprehensive UOCAVA Voter Life-Cycle Portal Project

The FVAP funding will ensure that VA offers an intuitive, one-stop, seamless process for the voter to register and manage eligibility, to be notified of ballot availability, access and mark the ballot and dramatically improve the ballot return rate.

The following is an overview of our proposed system and its key features, which will allow us to meet our goals and objectives for this grant. For the complete set of online Voter Services, the key components are: end-end LiveBallot eBalloting solution from Democracy Live; VA Voter Portal from OSDV; Voter Services Analytics from OSDV; and MS' cost-effective, highly reliable and scalable platform for operating these services.

Voter Specific, On-Demand Ballot Lookup

The LiveBallot system offers a Web-based, on-demand, voter specific ballot lookup. Using the LiveBallot system, voters from anywhere in the world can access their specific ballot online. This is a key feature of LiveBallot and eliminates the need for our staff to manually send email or paper ballots individually to each registered UOCAVA voter.

Voter Services Portal for Eligibility Management and Online Forms Assistance

The VA Voter Service Portal will extend the existing online registration assistance to implement VA's specific requirements for voter registration and absentee ballot applications, especially UOCAVA-specific requirements. The Portal is a Web application that UOCAVA voters use to manage and maintain the ability to vote overseas. Users initially access the system to identify themselves using information that is already in VA voter records, if the user is a registered voter. For those not registered to vote, the Portal provides assistance in determining eligibility to vote, collection of voter registration information, and providing a completed and correct voter registration form for the user to print, with full support for VA-specific UOCAVA requirements for forms use. For users who access the Portal using a set of current voter registration data, the Portal provides similar assistance in updating registration information, eligibility to vote absentee, UOCAVA status, and request for absentee ballot. Finally, the Portal also assists voters in determining eligibility to use the remote balloting solution; for eligible users, the Portal directs the user to the appropriate starting point for beginning the remote balloting process with LiveBallot.

The Portal will allow the user to determine which forms to complete in order to gain overseas voting eligibility, to complete them online, to print for signature and return to election officials, and to electronically deliver the forms data to existing VA election systems. The LiveBallot system will similarly enable a voter to electronically complete the absentee request form, to

return along with a completed ballot, in order to ensure the UOCAVA voter gains eligibility for absentee voting in the next election.

Usage Data Collection and Analytics

The Voter Services and Balloting Analytics service is a Web application that will be used by SBE staff to aggregate information about UOCAVA voter activity, both from the Portal and LiveBallot, and also from existing VA election systems that track UOCAVA voter ballot outcomes. The Analytics service aggregates these disparate record streams, and constructs a unified set of voter-specific records that both lists every voter action in a standard form, and also lists each voter's actions for the entire election cycle. The Analytics service provides basic statistical reporting, but the main innovative feature of the Analytics service is the use of common data formats (CDFs) for import/export functionality. Using CDFs, other parties, including FVAP, can obtain a complete set of VA-wide data, to compare or combine with data from other states, and to perform statistics and data mining beyond the statistics of the Analytics service's Web interface. By supporting CDFs, the open-data and complete-data nature of the Analytics service will make the Analytics service equally useful to other elections organizations that require standards-based voter activity data aggregation.

Interfaces to External Systems

LiveBallot was designed to handle structured data imports and exports (.txt, .csv, .edx, and .xml) from the major election management and voter registration systems. The Data Import Tool then presents import steps specific to the system being utilized. A simple mapping tool allows us to quickly and easily upload, import, and interact with the data to insure it is accurately imported into LiveBallot.

Data Import/Export Interface

Our vendor team understands the wide range of election technologies in use today and encourages the standardization of election data. If, however, we require customization or have a unique data structure, a custom importer/exporter can be quickly created by implementing the LiveBallot Data Import/Export Interface.

Ballot Tracker Module

UOCAVA voters may return to our LiveBallot website to monitor the status of their ballot. We have the ability to include multiple tracking dates and/or messages in our voter registration file. Ballot Tracker then displays voter specific tracking information from our voter registration file. Absentee ballot request, ballot access, and returned ballot dates are examples of some of the tracking dates that we may choose to display to the voter.

Accessibility Qualifications

For disabled UOCAVA voters, the LiveBallot electronic balloting tool has been federally reviewed and approved by the U.S. Department of Health and Human Services and is Section 508 reviewed and approved. Additionally, LiveBallot has been evaluated and shown to have the highest levels of accessibility by the Center for Disabilities and American Council for the Blind.

LiveBallot also strives to meet Web Content Accessibility Guidelines (WCAG) 2.0 specifications where possible.

Multilingual Support

LiveBallot's flexible layout engine allows for multi-lingual or single language ballot displays. Ballot data and on-screen instructions are managed by a translation system. Translations may be directly entered into LiveBallot or a translation file may be uploaded. If a translation file is not available, we can download a translation file from LiveBallot, enter translations, and then re-upload the file.

Ballot Delivery

LiveBallot offers selectable options for ballot delivery to our voters. This includes mail, fax and email ballot return packages that include all of our required documents.

Protect our voter's privacy and information

VA understands that the security of voter information and election data is one of our most important concerns. The MS solution protects the voter's privacy, as well as your election data, with its combined front and back end security. LiveBallot ensures the privacy of all data by providing protection both in transit and in storage.

LiveBallot protects voter data on the front end using highly secure SSL encryption, automatic expiration of a voter's session on the website, and limitations on the information stored in the voter's session. Voter information and election data uploaded to LiveBallot is safely stored on MS' Azure platform and is protected by MS' security standards. The Azure platform offers the highest level of security and was designed with a focus on confidentiality, integrity, and availability of customer data. MS employs some of the leading security and cryptographic experts in the field with subject matter expertise in online security.

LiveBallot is hosted domestically in the United States utilizing the scalability and security of Azure platform. LiveBallot complies with federal and state elections laws and will continue to meet the laws of federal and state elections rules. With billions of transactions securely hosted and delivered, the Azure platform offers us the highest degree of confidence our data will be protected and available when needed.

Help Desk and Support Statistics

The LiveBallot Support Team provides 24/7 support during elections and is available for assistance when needed. The Support Team maintains help desk statistics on call volume, resolution, and response time. Help desk reports will be made available upon request.

2.2 Evaluation of Technology Options for Advanced UOCAVA Solutions

SBE and Scytl will conduct a research and development project designed to further the body of knowledge and strengthen the concepts and technology for advanced UOCAVA solutions. This project will be targeted at specific VA customs and scenarios but will consider application to other similar jurisdictions. Technology solutions will be examined in the categories of

accessibility, secure electronic return and mobile voting stations for significance, sustainability, impact, innovation, and scalability.

VA believes these technology categories represent the future of UOCAVA voting solutions. Therefore, it is clear that research and proofs of concept in these categories are necessary to fully understand and quantify their potential impact. Efforts to this end will focus on the key factors of significance, sustainability, impact, strategic approach, innovation, scalability, collaboration and cost benefit.

This project will employ a thorough and established research methodology and will be structured in distinctive phases. The research methodology includes data gathering, testing and the review of technology, tools, processes and practices, the development of findings, recommendations and deliverables, and the dissemination of work products. All research, analysis, and findings of the project will be transferrable to other jurisdictions and will likely be a foundational project in the development of future UOCAVA voting.

2.3 Schedule and Milestones

Requirements Gathering

During this phase, the MS, Democracy Live and OSDV teams will work with SBE to finalize the requirements for the proper configuration of the Voter Portal, LiveBallot and the Analytics tool. This will include evaluating necessary changes for VA's voter registration system.

The Scytl team will work with SBE to identify deploying units and military hospitals to partner with and will gather data from prior research relating to accessible voting and secure ballot return initiatives.

Planning and Development

During this phase, the MS team will configure the Voter Portal, LiveBallot and the Analytics tool according to the gathered requirements. The Scytl team will formalize necessary partnerships and determine which technologies to use in the pilot tests.

Testing

During this phase the MS team will conduct a test pilot with the Voter Portal, LiveBallot and the Analytics tool and perform any necessary remediation configuration activities. The MS team will develop at test report that documents acceptance test procedures and results. The Scytl team will conduct the majority of its work at this phase through pilot testing of the advanced technology options identified in the previous phase. White papers and other formal documentation will be developed to document the results of the advanced technology option pilots.

Implementation

The MS team will implement and support the Voter Portal, LiveBallot and the Analytics tool for VA elections for 5 years. The product suite is modular in nature and legislative changes will involve minimal configuration changes to the system in most cases.

Project Phases/Milestones

- Initial Meetings
  - Request for Information
  - Determine point of contact and escalation (roles/responsibilities)
  - Formalize Requirements and Sign-off
- Configuration (and Customization)
  - Administration Configuration
  - Setup jurisdiction contact information
  - Core Configuration
  - Online Ballot Instructions
  - Ballot Package (Mail, Fax, Email) Completed
- Email Notification to Voter
  - Discuss and verify email notification process
  - Define our PIN Generation Process
  - Discuss Email Reporting (what and when)
  - Formalize notification workflow
- Discovery and Analysis (import data)
  - Upload VR Data
  - Upload and Import Election Data
  - Analyze data for completeness
  - Proof Election Data Mapping
- Internal Testing
  - Verify election ballot data
  - Verify ballot delivery settings
  - Verify county page content and links
- Initial UAT
  - Conduct UAT Prep Meeting
  - Conduct Initial UAT Requirements and Functionality Walk-through
  - Send UAT results and issue tracking XLS
  - Get UAT results confirmation and acceptance
  - Address initial UAT gaps
- Final UAT
  - Schedule Final UAT Meeting
  - Conduct Final UAT Requirements and Functionality Walk-through
  - Send Final UAT results and issue tracking XLS
  - Get Final UAT results confirmation and acceptance
- Go-Live
- Exercise Support Process
- Conduct Final Walkthroughs and Data Validation
- Execute Workflows (e.g. Notification)

3. *Reports*

This grant will allow us to develop and deploy a range of detailed reports specific to our UOCAVA enhancement project. To date, we have not had the resources to fully implement a UOCAVA reporting system. With this grant we expect to implement the following capabilities:

- UOCAVA Enhancement Cost Tracker – This report tracks the amount of time we spend preparing and making available electronic ballots for our UOCAVA voters.
- UOCAVA Enhancement Trend Analysis – This tool will measure the rate of improvement for each of the following metrics:
  - Voter Registration
  - Ballot Delivery
  - Ballot Return
  - Time Spent on the Site
  - Voter Access vs. Downloads
  - Voter Registration to Download Trends
  - Voter Access by Geography
- UOCAVA One-time and Annual Payments to our selected vendors.
- A research summary on principals of current UOCAVA voting solutions.
- A research summary on principals of accessible, secure electronic return and mobile voting station technologies.

4. Management Approach

Our management approach represents a proven development approach that provides for well-defined phases that take into account development of requirements, architectural design, detailed software design, software development, system testing, and managed release cycles.

Phases for the solution approach that are involved in this project are shown below:

- Envisioning: Envisioning involves creating a business vision and defining an approach to bring the vision to reality.
- Planning and Development: Planning continues through the development of functional requirements and a project plan for the project.
- Stabilization: Our team in cooperation with the vendor will test the solution and make modifications as needed.
- Deployment: The Deployment phase includes deployment of the solution and final testing.

Key Activities during the project will include the following:

- Kick-off and Vision and Scope meeting
- Define roles and responsibilities
- Outline key information needed to complete the project
- Confirm project approach
- Build and confirm project plan.

Eight Criteria Areas

Virginia endorses the eight criteria areas that are used to measure and evaluate this new UOCAVA program. Those areas are:

1. Significance
2. Sustainability
3. Impact
4. Strategic Approach
5. Innovation
6. Scalability
7. Collaboration
8. Cost Benefit Analysis

Significance/Impact

This Grant Request has the specific goal to increase the success rates for our UOCAVA population at each stage of the absentee voting process. The key areas and metrics that we focus on are:

- Voter Registration
- Ballot Delivery

- Ballot Return
- Ballot Casting

Historically, the biggest challenge for the UOCAVA voter population has been in "ballot return". LiveBallot will help meet the goal of eliminating the gap between domestic absentee voters and UOCAVA voters in all the key metrics, especially ballot return.

In addition, the FVAP grant will be enable us to ensure all voters regardless of mobilization or relocation outside of the U.S. will always be assured of a reliable method to register, access and return their ballot. VA has an increasingly mobile population and a growing rate of military personnel. Since we do not know who or when a voter may be out of the country or mobilized, the system we are selecting must be capable of addressing the mobility needs of every voter in our voter registration system. In our case that is over *5 million* registered voters.

The additional research in advanced technology options for UOCAVA voters will help provide proofs of concepts for VA and other jurisdictions for use in consideration of advanced technology and the necessary legislative changes.

Strategic goals

The SBE team considers the UOCAVA project as a highly strategic opportunity to dramatically ease the process of balloting for overseas and military voters. In addition this project will secure the tools necessary to ensure any of the five million registered voters in the Commonwealth are able to easily register to become an approved, eligible UOCAVA voter.

Key strategic goals for this project are as follows:

- Improve ballot access for UOCAVA voters, while at the same time, providing a positive solution/experience for the local election officials.
- Provide a solution that can build upon in the future as legislative needs catch up with the available technology.
- Provide an overall long term cost-effective solution for our elections, leveraging royalty-free open source technology where appropriate.
- Provide analytical information regarding the usage of the solution.
- Provide research evidence for advanced technological voting solutions for UOCAVA voters.

Our working hypothesis for this project states:

- A complete life-cycle Web-delivered UOCAVA voter services will reduce barriers to UOCAVA voter access, increase voter participation, and decrease errors that have the potential to disenfranchise.
- A comprehensive data collection will help demonstrate effectiveness, and enable comparison both over time, and between jurisdictions.
- Use of common data formats, particularly those emerging from IEEE standards activity, will enable data mining of data from many jurisdictions.

In summary, our strategy is to offer our UOCAVA voters a one-stop, turnkey eBalloting and registration tool that provides a dynamic and flexible platform that will reflect our current and future eBalloting requirements. The result will be demonstratively easier access to awareness,

registration, online balloting marking ~~and return~~ and tracking of the ballot for all eligible UOCAVA voters.

Longer-term strategy may involve expanding the system to offer LiveBallot as a multi-platform, comprehensive eBalloting application that is available via Facebook, mobile phone, Google, Bing or any number of emerging platforms, beyond our Web site. The resources of Microsoft and the elections expertise of both Democracy Live and the OSDV Foundation offers capabilities to grow with our laws, regulations, and vision.

Sustainability

Many of our elections offices are understaffed and under-resourced. Accordingly, the SBE has designed this project to meet the following criteria:

- Statewide Board of Elections Directed Project - This project will be conducted at the State level, thus reducing the burden on local elections administrators.
- Low long-term costs – The Microsoft long term payment model offers an option where the state only pays for what they use. For example, beyond the Grant years, we would only pay based on the number of ballots actually downloaded and submitted.
- Secure, cloud-based systems are proven to offer significantly lower server and hosting costs.
- To ensure long-term sustainability, our solution offers a suite of applications that can be deployed to ensure our UOCAVA voters are getting a broad-based level of use from a wide variety of features and tools. LiveBallot technology has been deployed in U.S. jurisdictions since 2008 and has seen an increase of use and growth each election. We expect the same snowball effect in Virginia.

Innovation

Microsoft Corporation has some of the world's leading innovators in areas of privacy, identity, data propagation, cross-platform utilization and security.

Microsoft's partner on this project, Democracy Live has been an innovative pioneer in the voter information technology space having developed and deployed:

1) Developed and deployed a Web-based, interactive accessible voter information guide.
2) The first multimedia, interactive eBallot and sample ballot specific to each voter.
3) The first comprehensive, multi-station, end-end mail ballot tracking system.
4) Deployed a Web-based, online marking tool for UOCAVA voters before the MOVE Act was introduced.

The expertise and resources of the OSDV Foundation help us ensure maximum transparency and verification in these vital elections processes.

All of the above tools are integrated into our proposed MOVE Act solution and may be turned on at the discretion of the State Board of Elections.

The combination of Microsoft, Democracy Live, and the OSDV Foundation ensures that our team has the resources and capabilities to enable constant adaptation to the evolving market and add innovative ideas to the system.

Scalability

Scalability, Security and Stability are the key reasons LiveBallot is hosted in the Microsoft Azure cloud environment. With a proven 99.99% uptime and real time, multi-geographic server redundancy your voters can be assured their ballot will be available. Elections are a classic case for a cloud-based application. The LiveBallot server environment will automatically scale to meet the spikes and voter rush typically associated with elections. Using a cloud-based auto-scale environment our staff need not worry if we have enough server capacity. Microsoft Azure will ramp up automatically at no additional cost.

With tens of millions of monthly transactions, Azure is the second largest server network in the United States, second only to the U.S. Department of Defense. We are confident in the scalability of this system.

Collaboration

A key objective for the SBE is to offer a seamless, integrated solution for each of the 134 elections jurisdiction in Virginia. Accordingly, we have developed a collaborative system which secures the required balloting and voter registration data from each elections jurisdiction in the State.

Cost Benefit

VA has over five million registered voters from 134 elections jurisdictions. The award of this FVAP grant will enable VA to deploy a statewide, comprehensive MOVE Act and UOCAVA registration for years to come. A truly comprehensive MOVE Act and UOCAVA solution must be able to touch each of our five million registered voters since any one of the may become UOCAVA eligible at any time.

We expect to offer our UOCAVA system to each UOCAVA voter for every election. We believe that a GI, or other eligible voter should have equal access to the ballot, regardless of the size of the election. Therefore, we expect to use this solution for a minimum of three elections per year.

We estimate 900+ hours of statewide manual staff time to successfully comply with the MOVE Act per election at a rate of $50.00 per hour. This total equates to a 4 year total of $540,000.00. (At three elections per year.)

In addition, the management of the UOCAVA registration process for each voter is approximately 500 man hours each year. This totals an additional $250,000 per year.

VA anticipates a total UOCAVA and MOVE Act compliance cost of nearly $1,000,000 over a four year period. As noted in the table below, this grant will enable us to deploy a perpetual system, with very low and manageable annual fees that will dramatically lower the ten year costs by nearly $1.1m dollars.

	Number of Man Hours Per Year	**Cost to State and Localities – 4 Years**	**Cost to State and Localities – 8 Years**	**Cost to State and Localities – 12 Years**	**FVAP Project Cost**	**12 Year Savings**
MOVE Act Compliance	**2,700**	**$540,000**	**$1,080,000**	**$1,620,000**		
UOCAVA	**500**	**$100,000**	**$200,000**	**$300,000**		

Registration Time and materials – Server, Equipment, paper and postage		**$200,000**	**$400,000**	**$600,000**		
Total	**3,200**	**$840,000**	**$1,680,000**	**$2,520,000**	**$1,400,000**	**$1,120,000**

The deployment of the LiveBallot solution will eliminate the need for elections staff to manually register a UOCAVA voter application and manually send them a paper or email a ballot. LiveBallot assures that the County staff time is substantially reduced, while fully complying with all the provisions of the MOVE Act.

Through the one-stop LiveBallot application voters may register as a UOCAVA voter online, access and mark their ballot, print or email all the required materials and track their ballot. Staff need only add the voter into their VR system and send one generic email to all UOCAVA voters. We anticipate a significant impact on our staffing and resources, saving over 60% of staff time while still fully complying with the MOVE Act.

Analysis and measurement of current processes

Our UOCAVA voter population has expanded over the last decade, due in part to increases in the number of military personnel deployed overseas. We estimate nearly two thirds of our UOCAVA personnel are affiliated with the armed services. In order to serve this growing constituency, historically we have deployed a variety of tools to ensure timely access to the ballot. These measures include linking to the Federal Post Card Absentee Application and the Federal Write-in Absentee Ballot to our Elections home page. We also mail physical (paper) ballots and e-mail ballots to eligible UOCAVA voters.

Now we face the challenges of meeting the new requirements of the MOVE Act, while not adding to an overburdened election team during the critical days of an election. Principally, the MOVE Act requires electronic delivery of a ballot 45 days prior to a federal election. Despite the good intentions, in many cases this requires staff to spend precious election time working to comply with the law.

Our elections administrators have determined that we have narrowed the gap between our domestic and UOCAVA population in areas of voter registration and voter participation. However, we still have a significant gap in returning ballots in time to be tabulated. Our key success metric is to improve the process of successfully transmitting and ***returning*** the ballot in time to be approved and counted.

Our current procedure is a labor-intensive process exacerbated by the MOVE Act requirements. This grant funding will allow us to acquire and test new technologies to automate our registration, and transmittal and processing of ballots for our UOCAVA voters, thus significantly increasing our ballot return rate for our military and overseas voters while reducing compliance overhead.

Identification of each process and the elements that are related to the process

Our UOCAVA voter population has expanded over the last decade. In order to serve this growing constituency, our current process is as follows:

- Voters apply to vote as a UOCAVA voter using the Federal Post Card Absentee Application.
- Once registered and in the system, we mail a physical ballot to the voter. Over the past few years we have emailed a ballot and the requisite balloting information to those voters on file with a valid email address.
- Our goal has been to send the ballot at least 45 days in advance of an election to our registered UOCAVA voters.
- The ballot is returned by the voter, along with the signed affidavit attesting to their validity as a registered, eligible voter.
- Ballots by eMail are typically duplicated, or re-made onto a ballot that can be tabulated.
- Eligible ballots are processed and submitted for tabulation.

Identification of potential risks and mitigating strategies

We believe the rewards of deploying an automated, proven, fully compliant MOVE Act solution that has been used and tested in hundreds of localities around the country greatly outweigh the risks associated with deploying a new technology. However, any successful project must understand that there are risks associated with initial deployments. These risks entail:

- Newer technology in the early part of the life-cycle
- Lack of voter awareness of new digital balloting tools

In order to mitigate the above listed risks we plan to deploy the following risk mitigation strategies:

- We will conduct a test pilot in the production environment using the new technologies.
- We will conduct acceptance testing procedures to ensure that the requirements identified in the Envisioning Phase are satisfied.
- Perform remediation configuration activities on the LiveBallot eBalloting tool to address any issues/problems uncovered during the pilot test exercise
- We will develop a Test Report that documents Acceptance Test procedures and resulting using the pilot test users.
- Revise and refine our back end processes to handle the expected increase in UOCAVA ballots.

The deployment phase will consist of the following activities:

- Execute operational test procedures to ensure the technology is functioning properly
- Provide our team access to the tool to allow execution of administrative procedures and to run reports
- Provide operational support during an election to ensure the eBalloting solution is made available to our voters

The following general procedure will be used to manage project issues and risks:

- Identify and document

- Assess impact and prioritize
- Assign responsibility
- Monitor and report progress
- Communicate issue resolution

A mutually agreed upon issue escalation process will be defined at the outset of the project.

Formalization of performance indicators for each process

It is critical for us to be able to manage and compile reports for each of our key performance metrics. These metrics include a wide array of indicators, including detailed statistical reports on the voter registration, balloting activity and cost tracking. LiveBallot tracks voter events to offer statistical reports for our jurisdictions. The LiveBallot dashboard allows a quick view of the number of visitors and other statistics for each jurisdiction

Justification for the modification to the existing processes

Our current UOCAVA process is a labor-intensive, manual environment in which our elections staff must spend a disproportionate amount of time. We believe that every eligible voter should have equal access to the ballot. Therefore, regardless of the time it takes, our staff will ensure the ballots gets delivered and processed. Our key objective is to narrow the gap between domestic ballot return and UOCAVA ballot return. By automating the process with the LiveBallot Web online system, our UOCAVA voters will be able to register to vote, access and mark their ballot and track the status of their ballot on-demand and online. In addition, automating the MOVE Act compliance requirements will free up our staff to do other necessary elections period activities that relate to all our voters, domestic and abroad.

We are confident that an automated, Web hosted solution will greatly narrow the gap between UOCAVA and domestic voters, while reducing the costs associated with a manual process. By deploying the LiveBallot system we can offer voter registration, ballot access ~~and ballot return~~ at nearly an 80% quicker rate than our tradition manual process. As a result of LiveBallot, we expect that over 50% less man-hours will be spent on UOCAVA related voter registration, ballot delivery, ballot processing and ballot duplication.

Finally, the LiveBallot system will be available to every eligible voter around the world, on-demand, without relying on any one individual to mail or email them an individual balloting package. Every laptop or computer with a browser will become an eBalloting tool, delivering the correct ballot to the correct voter no matter where in the world they live, regardless of physical disabilities. Our selected system has been reviewed and approved for the highest level of accessibility for disabled voters by the University of Washington Center on Disabilities Council for the Blind. Using the LiveBallot system, every eligible UOCAVA voter, from Waziristan to Walter Reed will have access to their ballot, where and when they want it.

Measurements of performance

Our objective is to continually assess, measure, and track our improvement relating to our UOCAVA population. The technology we have chosen offers an array of reporting tools to ensure we are able to performance measure what we are managing. The reporting tools include, but are not limited to:

- Number of voters requesting a ballot
- Number of visitors viewing a ballot
- Number of ballots downloaded
- Delivery method requested/downloaded
- Rate of ballot transmission to office after ballot is downloaded
- Ballot tabulated to ballot requested ratio
- Ballot requested to ballot downloaded ratio
- Locality and Region of Voter activity
- UOCAVA Enhancement Cost Tracker – this report tracks the amount of time we spend preparing and making available eBallots for our UOCAVA voters.
- UOCAVA Enhancement Trend Analysis

An annual final report will summarize the entirety of the data and financial reports. This is the report that is to be made available to FVAP by the 15th of February for each of the grant-supported years, but at least through 2016.

4. *Current and Pending Project Proposal Submissions*

We currently have no current or pending projects that overlap with this initiative. We have been in strategy discussions about the various balloting tools that are available to assist not only our UOCAVA voters, but also ways to assist our disabled population. However, we have no current or pending program or proposal developed or planned at this time.

5. *Qualifications*

Microsoft Corporation is the worldwide leader in software, services, and solutions that help people and businesses realize their full potential. Microsoft has been supporting the Department of Defense, Microsoft's largest customer in the world, for more than 30 years. Microsoft has been providing on-line services to hundreds of millions of users for more than 15 years.

Specifically, Microsoft Corporation has extensive experience developing the Washington State Statewide database and working on the New York State Voter Registration project. Microsoft was the Prime contractor for the 2010 FVAP Project, using Democracy Live technology. Microsoft's largest customer is the U.S. Department of Defense, the sponsor of the FVAP funding.

Democracy Live, Inc., our technology and solution provider is a pioneer in the emerging voter information technology industry. With decades of elections experience, Democracy Live has successfully deployed innovative voting assistance products to empower voters and has met the requirements of the MOVE Act. The Democracy Live system has been used in over 200 U.S. elections, delivering ballots to thousands of voters in over 60 countries.

The Open Source Digital Voting Foundation is a Silicon-Valley based non-profit public benefits organization designing and developing an open source publicly owned elections technology framework comprising components for every aspect of the election life cycle and ballot ecosystem. OSDV technology is in deployment in the state of Virginia and the District of Columbia, with various pilot and design-phase efforts in jurisdictions around the country.

Election Systems and Software, Inc. (ES&S) is the largest elections-only company in the world. ES&S provides voter tabulation, voter registration and election training systems and services to clients ranging in size from small county governments and individual organizations to state boards of elections and international governments.

Scytl is a software company specializing in the development of highly secure election modernization solutions. These solutions incorporate unique cryptographic protocols that enable election administrators to carry out all types of election processes in a completely secure, transparent and auditable manner. Scytl's advanced election security technology positions the company as a worldwide leader in the election modernization space.

Scytl was formed as a spin-off from a leading research group at the Autonomous University of Barcelona. This group has pioneered the research on election security since 1994 and has produced significant scientific results, including over 30 scientific papers published in international journals and the first two Ph.D.'s theses on electronic voting security. Scytl's unique election security technology derives from over 16 years of pioneering R&D and is protected by a portfolio of international patents.

Commonwealth of Virginia
State Board of Elections

Response to the

Defense Human Resources Activity - Federal Voting Assistance Program's
Electronic Absentee Systems for Elections Grants for States, Territories and Localities

Volume II – Budget Proposal

Title:

Virginia Comprehensive UOCAVA Voter Life-Cycle Portal Project and the Evaluation of Technology Options for Advanced UOCAVA Solutions

CFDA: 12.217
BAA: HQ0034-FVAP-11-BAA-0001
CAGE: [redacted]
DUNS: [redacted]

Contractors and Sub Recipients:
Microsoft Corporation
Democracy Live
Open Source Digital Voting Foundation
Scytl
ES&S

Proposed Period of Performance:
August 2011 – July 2016

Submitted by: Matthew Davis
Submitted on: July 13, 2011

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3 areas of research and proof of concept covered

1. Accessibility
2. Secure Electronic Return
3. Mobile Voting Station

Budget Breakdown Categories

<table>
<tr><th>Budget Category</th><td>Full Estimate</td><td>Estimate for FVAP Grant Submission</td></tr>
<tr><td rowspan="2">Research and Analysis (Phase 1)
8 months (August to April)</td><td>$175,000.00</td><td>$125,000.00</td></tr>
<tr><td colspan="2">Includes:
Personnel
Project Team (Project Management is assumed to be handled by Virginia)
Research Team
Activities
Precedent Research in each of the 3 technology categories
Technology Requirements and Options Review for each of the 3 technology categories
Technology Selection and Analysis for each of the 3 categories</td></tr>
<tr><td rowspan="2">Proof of Concept and Reporting (Phase 2)
4 months for PoC Development
3 months for deployment and operation
1 month for analysis and reporting</td><td>$350,000.00</td><td>$275,000.00</td></tr>
<tr><td colspan="2">Includes:
Personnel
Project Team
Solution Development Team (software developers, system engineers, quality assurance engineers)
Research Team
Activities
PoC Specification Analysis for 2 technology options
PoC Development for 2 technology options
PoC Evaluation for 2 technology options
Review and Report for whole project
Other
Hardware, as needed
Software Licenses, as needed</td></tr>
</table>

Virginia Voter Registration System Modifications

Virginia (VA) current has a statewide voter registration and election management system known as the Virginia Election and Registration Information System (VERIS). VERIS was built by Quest Information Systems (Quest) and VA currently maintains an annual maintenance agreement with Quest for VERIS.

In order for the new voter portal to be fully functional and interactive with VERIS, VA will need to seek some modifications to VERIS that are not covered under the annual maintenance agreement. The following is an itemized list of the necessary changes and the estimated cost of each change. The costs estimates are based off of previous change requests issued by the Virginia State Board of Elections (SBE) to Quest.

1. Creation of Web Service Layer
    a. Estimated Cost - $100,000
    b. Details - SBE will seek to have a series of secure web services built on top of the VERIS database that will enable the voter portal and analytics tool to input and extract information from VERIS. These services will be built to use the same common data standards being used by the voter portal and analytics tool.

2. Creation of Absentee Ballot Application Hopper
    a. Estimated Cost - $50,000
    b. Details – SBE will seek to have a new feature added to VERIS. This hopper will enable the local General Registrars to view and process absentee ballot applications completed on the voter portal. When a voter successfully completes an absentee ballot application (state or FPCA), a record will appear in this hopper for the voter's General Registrar alerting them that an application is forthcoming. Once the form is physically received, the General Registrar can process this hopper record, updating the voter's record in VERIS.

3. Creation of Online Voter Registration Hopper
    a. Estimated Cost - $50,000
    b. Details – SBE will seek to have a new feature added to VERIS. This hopper will enable the local General Registrars to view and process voter registrations and changes of address completed on the voter portal. When a voter successfully completes a voter registration form or change of address form, a record will appear in this hopper for the voter's General Registrar alerting them that a registration form is forthcoming. Once the form is physically received, the General Registrar can process this hopper record, adding or updating the voter's record to the state's registration records.

4. Creation of Absentee Voting Hopper
    a. Estimated Cost - $50,000
    b. Details – SBE will seek to have a new feature added to VERIS. This hopper will enable the local General Registrars to process absentee ballots (both LiveBallot and FWAB) completed on the voter portal. When a voter successfully completes

a ballot on the portal, a record will appear in this hopper for the voter's General Registrar alerting them that a ballot is forthcoming. Once the ballot is physically received, the General Registrar can process this hopper record, updating VERIS to indicate that the voter has voted.