

CALIBRE

An Employee-Owned Management Consulting
and Technology Services Company



6354 Walker Lane, Suite 300, Metro Park
Alexandria, Virginia 22310-3252 USA

p. 703.797.8500 or 1.888.CALIBRE
international p. 011.1.888.CALIBRE

e. info@calibresys.com
w. www.calibresys.com

WHITE PAPER

Improving Security in the Elections Process with Voting System Modernization

AUTHOR

Michael Teribury
Principal Analyst
CALIBRE Systems, Inc.

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Improving Security in the Elections Process with Voting System Modernization

Executive Summary

After the passage of the Help America Vote Act (HAVA) in 2002, U.S. election jurisdictions updated voting-related technologies and improved accessibility. States and local election jurisdictions across America are again showing increased interest in modernizing election-related systems, technologies, and processes as the systems are over a decade old in many areas of the nation. Initiatives include new voting equipment, 21st century voter registration databases and systems, and increased flexible training opportunities for poll workers and other staff that utilizes online and mobile learning platforms, in addition to in-person training. Benefits of modernization include:

- Timely and accurate dissemination of election information and absentee ballots
- Improved voting accessibility
- Cost optimization for election administration
- Efficiencies in vote tabulation and auditing
- Adopters becoming national leaders on election reform

However, election system modernization efforts are complex, requiring specialized research, design, technology, testing, and management skills. CALIBRE understands election-related legislation; is knowledgeable regarding voting system security, privacy, transparency, accuracy, and auditability issues; and has extensive experience in risk management. CALIBRE provides comprehensive support services to modernize election systems and processes, including:

- Program management
- Research and requirements definition
- Voting process security/risk assessments and mitigation strategies
- Design and acquisition strategies
- Testing and piloting
- Implementation support
- Training and education
- Change management and strategic communications

About CALIBRE

Founded in 1989, CALIBRE Systems, Inc. (CALIBRE) is an employee-owned management consulting and technology services company that provides government and industry with management analysis, technology solutions, and program support. CALIBRE is a preferred, trusted advisor to executive-level decision makers: we provide our customers with enduring solutions that make a difference.

CALIBRE's history of identifying and quantifying risks and issues related to voting legislation, policies, practices, and technology provides a strong base to examine system modernization. CALIBRE understands the election environment and has demonstrated analytical and management processes required to develop collaborative solutions that are customizable, integrated, and adaptable to state and local jurisdictions.

As a choice contractor for the Federal Voting Assistance Program (FVAP) and large election jurisdictions, CALIBRE continues to support

CALIBRE EXPERIENCE

- Requirements definition, acquisition life-cycle support, testing, quality assurance, and federal/state/vendor communication for Electronic Voting Support Wizards (EVSWs)
- Research assessing administrative, logistical, policy, and cost considerations of online and kiosk-based voting systems
- Testing and certification services including development of test plans, testing schedules, test scenarios, and evaluation against state code
- Examination and/or re-examination of voting systems, reviews of submitted manufacturer technical data packages, reviews and evaluation of third-party test reports
- Development and review of relevant policies and procedures

voting modernization research, analysis, and testing. CALIBRE's previous efforts for FVAP included extensive data collection (survey/interview); federal and state statute and policy analysis; online voting system functionality, accessibility, and security testing; and research, testing, and modification of software assurance tools to mitigate security weaknesses and vulnerabilities and validate the integrity of software source code from online voting system manufacturers. Our ongoing security assessments for local election jurisdictions include an initial review of current election processes and documentation, as well as interviews with key personnel and in-depth,

on-site assessments of physical and cyber security processes, procedures, equipment, and facilities.

Additionally, our staff have conducted extensive accessibility research, analysis, and testing, including:

- The challenges of absentee and online voting for persons with disabilities
- Section 508 compliance of voting-related websites and online wizards
- Usability redesign of voting forms
- Privacy, usability, and accessibility testing of voting systems

Importantly, CALIBRE has extensive experience managing cyber security research, analysis, and testing efforts, including:

- Physical and cyber security risk assessments for large U.S. election jurisdictions
- Research and analysis of software assurance tools, intrusion detection and prevention systems, and intrusion recovery tools and techniques
- Risk comparison of mail-based and online absentee voting
- Operational and security testing of online voting systems
- Penetration security testing of online voting systems

Scope of Work

CALIBRE will leverage relevant experience to provide management support services for the life-cycle of a state or local jurisdiction's voting system modernization effort, including:

>> Program Management

- Develop and manage the overall project, including strategic communications and change management
- Implement risk management and continuous review of quality control

>> Research

- Conduct detailed research and analysis of current voting system environment including laws and policies, security, accessibility, and usability

- Develop operational framework utilizing customer and stakeholders input

>> Security and Risk Assessments

- Use a comprehensive risk-based approach based on current threat modeling
- Apply software assurance tools to identify vulnerabilities
- Define mitigation strategies

>> Requirements and Acquisition

- Define requirements, and design framework with required scalability, security, accessibility, transparency, and auditability
- Assist in the acquisition process, including Request for Proposal (RFP) development, solution selection, and contracts/supplier management

>> Testing and Pilots

- Conduct testing for standards, security, accessibility, transparency, and scalability
- Pilot across jurisdictions to assess functionality and operational capability

>> Implementation

- Develop an integrated approach focused on change management and strategic communications
- Lead with comprehensive education and training

Approach

CALIBRE believes that first and foremost, it is critical to gain a full understanding of an election jurisdiction's needs and requirements. This requires close interaction with the State Election Director and/or local election officials and staff members, as well as other critical stakeholders as desired by the customer. CALIBRE understands that budgets are limited, and jurisdictions must focus resources on solving issues that have the most impact. Our experienced professionals provides flexible, customized support by:

- Conducting research and analysis for the specification of functional and technical design requirements of the voting system

- Outlining legal and policy requirements and facilitating any necessary statutory changes

- Analyzing historical voting system performance and developing areas for improvement

- Developing and publishing a voting system architecture framework based on functional and legal requirements, taking into account public and media expectations

- Addressing critical implementation factors and generating prototypes of hardware components

- Publishing the conceptual design

- Developing a procurement and development model that includes funding for system development, testing, piloting, and implementation

CALIBRE excels at program management of complex projects, and will design and implement an overall voting system implementation plan, including strategic communications and change management initiatives to ensure that the public is fully aware of project objectives. We will implement risk management and continuous quality control reviews as we develop and maintain a schedule of key events over the plan's execution timeframe to guide workload priorities and project deliverables. CALIBRE uses the schedule to ensure that all tasks are fully integrated to meet mission objectives.

If desired, CALIBRE can conduct system procurement, testing, piloting, and implementation, as well as public and poll worker education and training, can be conducted by CALIBRE. We will coordinate with customers to adjust workload priorities and schedules to ensure contract objectives are met in a timely fashion and according to the election jurisdiction's needs and requirements.

Following is a representative list of tasks that can be customizable as necessary to guide project completion.

Task #	Task
1.0	Conduct research and analysis
1.1	Requirements analysis of the voting system design
1.2	Legislation and policy analysis
1.3	External voting system drivers
1.4	Analysis of existing voting systems/vendors
1.5	Applicability of available voting systems to legislative landscape, and main requirements for voting system design
1.6	Recommendations for best suited voting platforms
2.0	Perform a security and risk assessment
2.1	End-to-end election process review
2.2	Onsite analysis of physical and IT security posture
2.3	Quantitative comparison of risks and mitigation strategies across best-suited voting platforms
3.0	Plan
3.1	Change management plan to include strategic communications plan
3.2	Education and training plan
3.3	Quality assurance plan
4.0	Requirements and acquisition modeling
4.1	Assessment of suitable voting system
4.2	Design of operational model framework
4.3	Acquisition models
5.0	Test pilot program
5.1	Bench-scale and pilot-scale testing
5.2	Analysis of stakeholders' pilot testing feedback
5.3	Pilot test risk analysis
5.4	Design revisions and recommendations for full-scale implementation
6.0	Create an implementation plan

Conclusion

CALIBRE understands the diverse requirements of local jurisdictions, varying state environments and organizational cultures, and the need for innovative efforts to ensure accessible, secure, and transparent elections. CALIBRE's interdisciplinary team of experienced professionals is known for pioneering approaches and recommendations, and will apply the team's significant election industry experience to meet customer challenges. Our proven record developing collaborative, customizable, integrated, and adaptable management solutions for complex projects, and CALIBRE's management and analytical processes will ensure the successful implementation of a modern voting system or other election technology solution.