



## State of Colorado Uniform Voting System Request for Proposal (RFP) Cover Sheet

**SEALED RESPONSES MUST BE MAILED OR DELIVERED TO:**

**Colorado Department of State**

**Attn: Al Davidson**

**1700 Broadway**

**Suite 200**

**Denver, CO 80290**

SOLICITATION NUMBER:	CDOS-UVS-2013-01
DEADLINE DATE AND TIME:	<b>December 4, 2013 at 5:00 PM MOUNTAIN TIME</b>
PURCHASING CONTACT:	Al Davidson
PHONE NUMBER:	303-895-2200, ext. 6361 (for delivery questions only)

**BIDDERS MUST SUBMIT ONE (1) ORIGINAL AND NINETEEN (19) COPIES OF THE PROPOSAL AND ONE ELECTRONIC COPY FOR BOTH THE BUSINESS PROPOSAL AND COST PROPOSAL. BIDDERS MUST COMPLETE THE BELOW INFORMATION.**

F.E.I.N.	27-0798408
DELIVERY DATE	December 4, 2013
AUTHORIZED SIGNATURE	
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**COLORADO UNIFORM VOTING SYSTEM**

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**File: CLEAR BALLOT RFP RESPONSE**

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# Uniform Voting System for the State of Colorado



**RFP # CDOS-UVS-2013-01**

**Clear Ballot BUSINESS RESPONSE TO RFP**

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**December 4, 2013**



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**COLORADO UNIFORM VOTING SYSTEM**

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**File: CLEAR BALLOT RFP RESPONSE**

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*Conformed Copy of Transmittal Letter*

Dear Colorado Department of State,

Clear Ballot is the first company in over ten years to develop a voting system from the ground up. Now, after three years in development and extensive field testing, the Clear Ballot Group is pleased to submit this response to the Colorado Department of State's RFP for a Uniform Voting System. We believe our proposal will be attractive to the State and its Counties for the following three reasons, as our solution provides:

*An easy transition to a uniform implementation in mid-2014* – Early success stories are the key to a successful statewide deployment. This proposal eliminates two of the main impediments to early success: There is no need to 1) learn a new EMS at the outset, or 2) to make a long-term commitment to purchase single-use capital equipment or to throw out perfectly functioning voting machines.

*A modern software architecture that's designed for ease-of-use* – Support dominates the life-cycle cost of election systems. Easy-to-use, easy-to-learn, familiar web-based software supported by just-in-time video training modules requires less training and less need for expensive on-site support.

*A scalable and low-risk system* – This proposal responds to the performance needs and budget constraints of every Colorado County. Three scanner models at different price points are being proposed; all run the same software. All scanner models can become part of a network to increase scanning capacity. In peak demand situations, scanning equipment can be easily transported and shared between counties.

Behind these benefits, there is the story of how a team of dedicated individuals worked very hard to build a next generation voting system and a new class of tools for election departments of every size. A new vision for the role of technology in elections guided their development. The Clear Ballot founders believe that:

The role of technology is not to decide an election but to assist the judgment of and build trust in those officials entrusted with certifying the outcome. To that end, technology should present the evidence of an election clearly and succinctly to election officials and to the widest possible audience allowed by law. And then, so that others can see, technology should make it easy to faithfully record the decisions made by the officials to certify the outcome of every contest.

We could not have realized this vision alone. We have been helped by election officials who share the vision and have been frustrated by the industry's lack of innovation and high prices. And, for the past 4 years, we have received critical support by the Fujitsu Corporation who



generously loaned us scanners and arranged for the logistics of transporting them to our pilot sites.

Our system is called ClearVote™. It was built by software professionals experienced in both elections and new high-productivity software tools many of which, 5 years ago, had not been invented. They began their development in a novel, but more challenging way – they built an independent audit system that was able to compare its results to the results of the voting system being audited. Why, because accuracy is the *sine qua non* in elections.

**ClearVote**

The founders knew that if they couldn't prove their system's accuracy across all major voting systems and ballot layouts that they would have nothing. So, over an 18-month period, the Clear Ballot team made 10 road trips, conducted over 35 past-election pilots in Florida, New York and Connecticut and processed over 2.2 million ballots from five different voting system vendors: ES&S, Dominion, Hart Intercivic, Premier and Sequoia.

In each pilot, using Clear Ballot's LegacyEMS Connector, the election definition was independently derived from the PDF files used to print the ballots; every ballot cast in the election was scanned by unmodified scanners that were generously provided by Fujitsu – the worldwide leader in scanning technology. As each ballot was scanned, the votes were tabulated in real time with Clear Ballot's software. Finally, the independently derived results were automatically compared against the published results of each voting system at tens of thousands of points of comparison. Across every pilot, there was a perfect match in the vast majority of comparison points. But that wasn't good enough; the engineers knew that they had to be able to explain every discrepancy in a way that anyone could understand.

That thinking led to, what some election officials have said is, the first real innovation in election technology in the last 30 years: the ability to present the evidence of voter intent in a large election – in less than a minute – and to automatically record decisions made by election officials to override the ClearVote classification decision (e.g. recording an official's decision to change this example from an overvote to a "Yes" vote).



We believe that this new class of highly visual tools will have a profound effect on the administration of elections: lower capital costs, easier capacity planning, faster, more confident election reporting, shorter training cycles, lower support costs, faster, more confident election reporting and greater transparency for candidates, interest groups, the media and citizens.



This past summer, with support from many of the Supervisors of Election, the Florida State legislature passed the nation’s first automated, independent audit law. This statute will allow counties to substitute Clear Ballot’s system, ClearAudit™, in lieu of a manual audit. **ClearAudit**

In addition to Florida, the New York State Board of Elections added Clear Ballot to an EAC grant to propose innovations in post-election audits and logic and accuracy testing. Following a year-long development project and five successful pilots, the Board’s staff encouraged Clear Ballot to submit its system for formal certification as a central count voting system. In November 2013 the company began the certification process with one of the two federally certified test labs in November 2013.

Clear Ballot has already been doing work in Colorado. In November, 2012 the Colorado Secretary of State’s office added Clear Ballot to an EAC grant to help streamline risk limiting audits, which have been mandated by the Colorado legislature in 2017. Other Colorado’s activities in 2013 have included:

- In April, two demonstrations showed how Clear Ballot’s software could be used in conducting an efficient Risk Limiting Audit.
- In September, Clear Ballot staff travelled to El Paso County to perform a post-election audit on one of the two State Senator recall elections.
- In November, following the 2013 Coordinated Elections, Clear Ballot personnel travelled back to El Paso County to assist the staff in identifying ballots for a rare triple recount. It was clear to everyone, that one day, the efficiency of the Clear Ballot system would influence a law change and recounts could be completed in a tiny fraction of the time spent today.
- Also in November, Clear Ballot trained staff in the Arapahoe County election department to operate the Fujitsu scanners in order to conduct the largest single-ballot risk limiting audit ever attempted. The risk limiting audit was completed in one day, which compares favorably to more than a week for previous risk limiting audits conducted in Colorado.

In each of the pilots that were done in Colorado, the staff commented on how easy and quick the scanning process was and how fast the results were available.

*Proposal Contents*

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*Response to Transmittal Letter Requirements*

Clear Ballot understands the scope and goals of the Colorado Uniform Voting System RFP and is pleased to confirm the following:

- 1) Clear Ballot hereby acknowledges receipt of all modification notices to this RFP.
- 2) Clear Ballot worked on two projects in El Paso and Arapahoe counties that are described above.
- 3) Clear Ballot does not have any known conflicts related to this RFP.
- 4) Clear Ballot partners with Fujitsu for delivery, training and support related to scanners used with ClearVote. Clear Ballot has the necessary staff to carry out the scope of work as defined.
- 5) Clear Ballot does not object to any of the provisions of the Administrative Section of the RFP.
- 6) Clear Ballot agrees that any intellectual property created during this project by Colorado belongs to the State. We would like to clarify the contract language that Clear Ballot is not transferring ownership of any intellectual property in ClearVote or otherwise created by Clear Ballot in the development of its products.
- 7) We hereby acknowledge that we have received permission for our references to release information to the State of Colorado.
- 8) Clear Ballot is proposing a Central Count solution that covers categories A, C, G and H, i.e. an EMS, central ballot scanner and tabulation equipment, vendor training and support and miscellaneous requirements.

Our RFP Proposal that follows responds to the RFP and highlights the benefits and advantages of our company and our product, ClearVote. Together with Clear Ballot services and training, the State has the opportunity to improve voting systems dramatically in a solution that provides a lower total cost of ownership than the legacy voting systems used in the past. We look forward to discussing our proposal and demonstrating our solution to the State.

Very Truly Yours,

Larry Moore  
Chief Executive Officer



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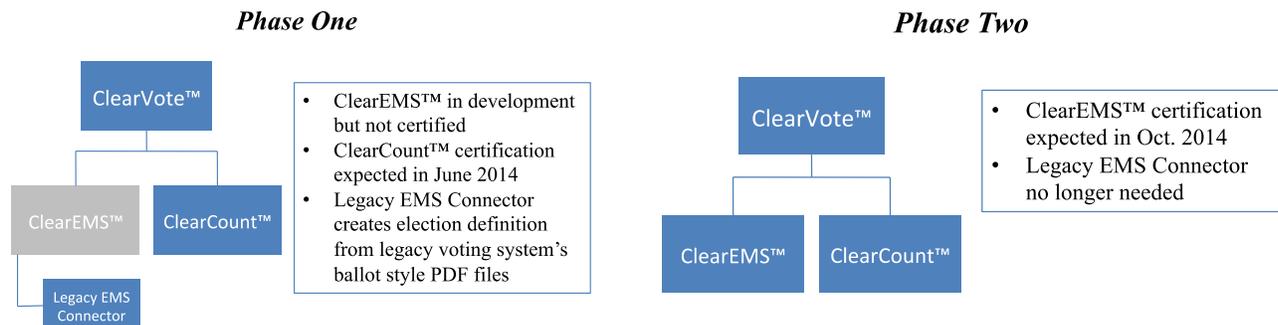
## The Clear Ballot Proposal for a Uniform Voting System for Colorado

### 1.0 Executive Summary

This document is the **commercial proposal** of Clear Ballot to the Request for Proposal for the development of a Uniform Voting System for the State of Colorado. We are proposing use of a new class of highly visual tools for faster recounts, shorter training cycles, lower support costs, faster, more confident election reporting and greater transparency for candidates, interest groups and citizens. We are proposing that our software, ClearVote™, together with Fujitsu scanners, be implemented in two stages that allow counties to continue use of existing EMS systems that we will integrate with the Clear Ballot solution, while transitioning to the full Clear Ballot solution for subsequent elections. The counties will have a fully functioning next generation system rolled out for the 2014 election, and have the opportunity to work with Clear Ballot in final implementation. Clear Ballot can uniquely take into account specific features that will help CDOS make Colorado a leader in voting system integrity and operation.

#### *Two Step Transition*

In Phase One of the implementation Clear Ballot would use its LegacyEMS Connector to create election definitions from the ballot PDF's of the county's current voting system. ClearCount™, seamlessly integrated with Fujitsu commercial off-the-shelf (COTS) scanners, performs ballot scanning, tabulating, visual review, and reporting.

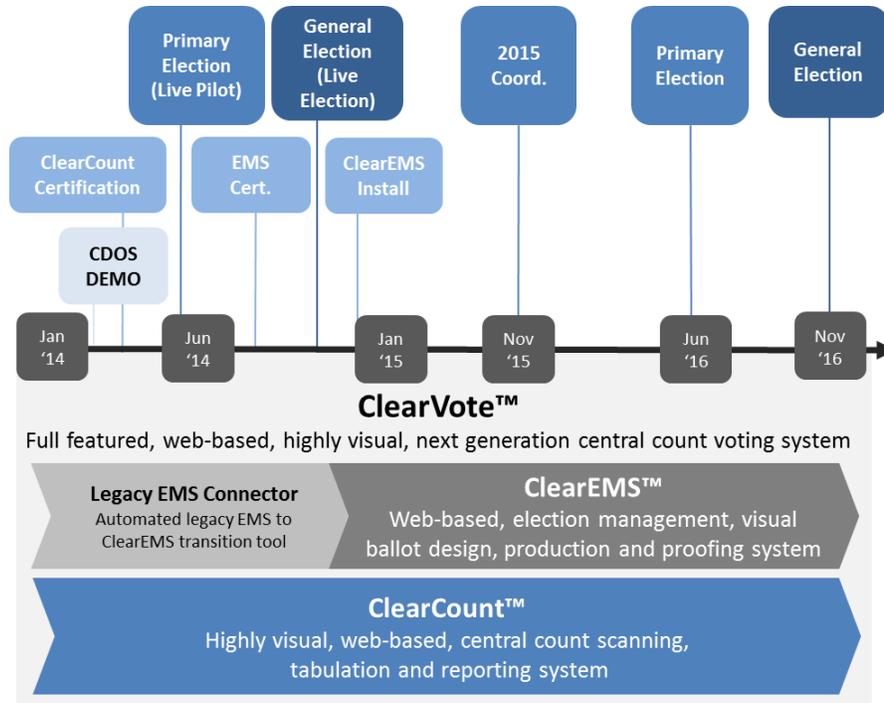


In Phase Two Clear Ballot would implement a certified EMS system, ClearEMST™, which, coupled with ClearCount, would cover election creation to tabulation and reporting of results - a full implementation from beginning to end of the election cycle.

#### *Rollout to 2016*

The timeline below shows an initial demonstration of ClearVote in January of 2014. If Clear Ballot is invited to demonstrate our system we would first show a fully functional, extensively tested tabulation and reporting system, called ClearCount™. A range of scanners – standalone

and networked would be shown tabulating ballots from each of the four currently certified voting systems. In addition we would include a demonstration of the alpha version of Clear Ballot’s ballot design and production system, called ClearEMS™. Finally, Clear Ballot would provide a review of our demonstration project with Clemson University to integrate ClearVote™ with 3<sup>rd</sup> party accessible voting equipment.



### *Certification*

The first phase of Certification, accuracy testing, is just beginning at a federally accredited test lab. Final certification of ClearCount as a central count tabulation system for the New York State Board of Elections is expected in June 2014. Even though ClearCount may be certified, it is expected that, in the June Primary elections, participating counties will run a live, parallel pilot alongside their legacy voting systems to satisfy themselves that ClearCount is producing accurate results. To facilitate this transition, the election definition (contests, voting rules, candidates, parties and coordinates of the vote targets) would be brought into ClearCount by our LegacyEMS Connector. Every legacy voting system in Colorado can be supported. After the June 2014 election the voting system would be transitioned to a full ClearVote system that will be fully certified and include ClearEMS for ballot design and production. After this point, the LegacyEMS Connector would no longer be needed.



### *Accessible Voting*

For the past decade, accessible voting has been one of the most expensive components of a voting system. It is not uncommon for counties to spend over 40% of their capital budget on accessible voting equipment that are used by far less than 1% of voters. Clear Ballot and Clemson University, who have teamed with the Election Center and are funded by an EAC grant, have joined forces to develop a modular approach to lower the barriers to entry for 3<sup>rd</sup> party companies who specialize in accessible voting solutions.

The goal of our collaboration with Clemson is to solve the difficult technical integration issues that any 3<sup>rd</sup> party provider of accessible voting equipment faces. These include: 1) the ability to automatically program every ballot style so the correct ballot is presented to the voter based on his/her address, 2) the information needed to link the VR data to the correct ballot style at the accessible voting location and 3) the software to print a ballot that can be tabulated in the normal fashion that do not appear to be marked by a machine (preserving privacy and anonymity).

Clear Ballot has developed a tool-kit enabling any qualified provider of accessible voting devices to integrate with the voting system and offer devices at a fraction of the cost of monolithic systems.

### *Implementation, Training, and Support*

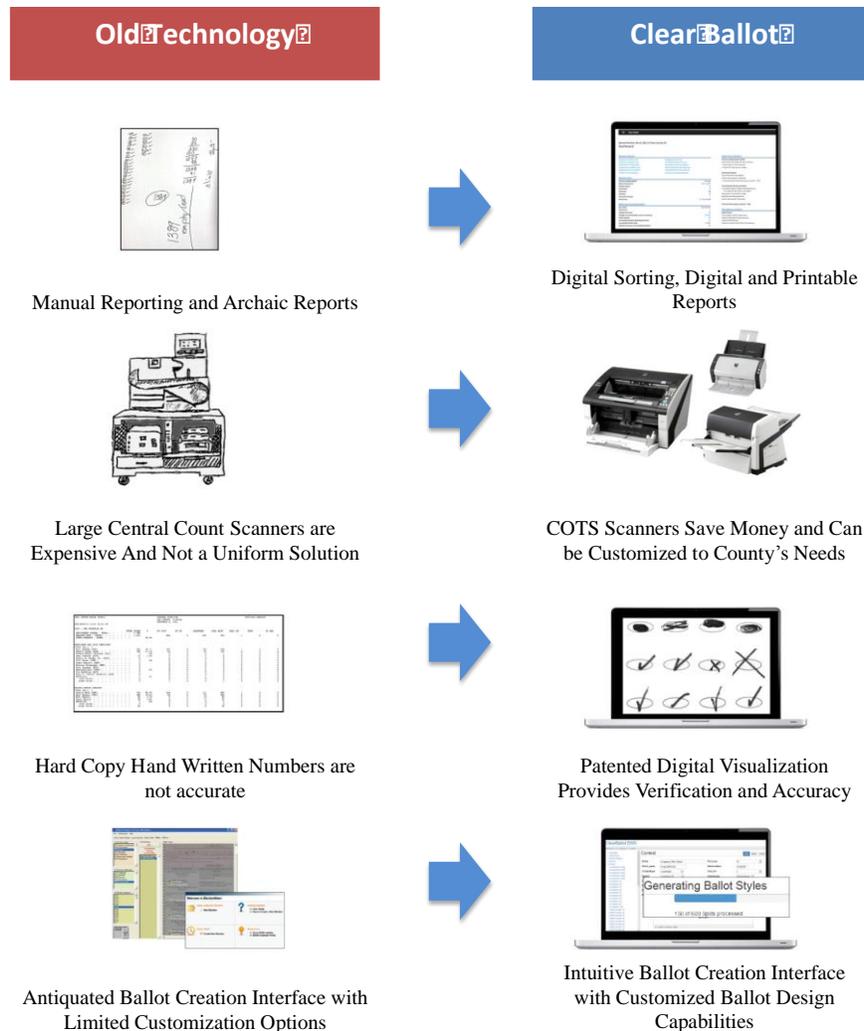
Clear Ballot's implementation plan will be multi-phased, with an initial installation of ClearCount. Clear Ballot's project manager and installation team will be onsite extensively, making sure each phase of the process and project plan are followed to form. The process will include significant testing with county officials and Clear Ballot team members, along with significant support from Fujitsu and their national and local networks. In Phase One, focus will be on the seamless transition with legacy voting system. Phase Two will include the implementation of ClearEMS, which will again include the onsite support of the project manager and the ClearEMS software engineers.

The implementation will be accompanied by a robust training program led by in-person training with Clear Ballot instructors. A continuing training plan will include self-paced training videos, extensive product documentation, and additional in-person training as needed. Clear Ballot will also utilize a "Train the Trainer" component designed to facilitate cost-effective team training. Clear Ballot's training is comprehensive, effective, and timely, while at the same time seeking to minimize county costs.

Clear Ballot and Fujitsu have partnered to offer unparalleled support. Clear Ballot will utilize both onsite and real-time offsite support, providing a robust yet cost effective approach to fit within all county budgets. Fujitsu's four-year maintenance agreement provides preventative maintenance and onsite support from experienced local technicians.

## Why Choose Clear Ballot?

Clear Ballot is the first voting system built on today’s web-based user interfaces. The user interface is intuitively familiar and similar to applications used every day. It can be learned and put into use quickly. And once in place it provides election officials with a new class of powerful, visual-digital management of ballots and voting data instead of manual reporting and archaic reports. Commercial scanners can be used, not only to save money but to support customization to a county’s needs. Voting results can be visualized for an entire election. This lets election officials spot problems and confirm election results to such a greater extent that they can be confident reporting the election results that they certify. *See also* Section 6.8.2.





## Customer Testimonials

“With the existing system we don’t always know whether it picked up a mark on a ballot that didn’t necessarily follow the instructions and this system shows you exactly which ballots were counted and which ones it got close to not counting or close to counting.” - Wayne Williams

“The election officials that have come and seen this process are stunned... Clear Ballot allows us to get to the truth of what the ballot counts are and currently nothing like it exists that allows us to do this...Clear Ballot gives us the best tool I have seen in my 24 years as an elections administrator” – Ion Sancho

“It is a tool for Election Officials to be able to process ballots in a timely manner because right now we’re hand counting and we can’t do that in a timely manner” – Maureen Baird

“I was really excited when I saw Clear Ballot because this would be a way to audit the entire election - every race - and not have it be so labor intensive and most importantly of course it would be an independent audit.” - Susan Gill

## 2.0 Company Overview

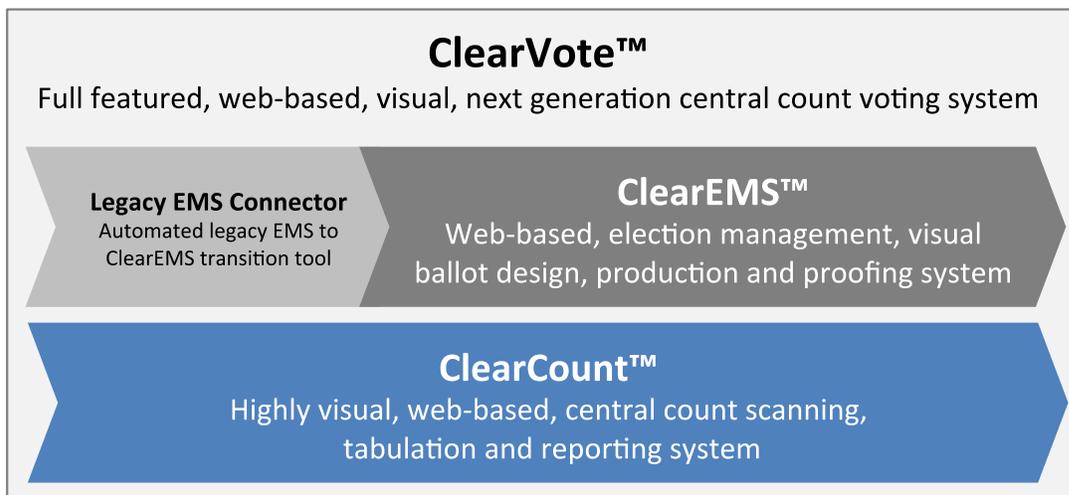
Clear Ballot, Inc. (“Clear Ballot” or the “Company”) was incorporated in Delaware in 2009, with its headquarters in Boston, Massachusetts. Clear Ballot was founded to develop, market and support a new class of tools for election officials built on a modern software architecture and commercially available hardware and software. The company has 13 employees who are supplemented by outside consultants, a large network of election system professionals, and a relationship with Fujitsu, the multinational technology company and leader in high-speed scanners. Management includes the team that developed and launched Lotus Notes, and a designer of many of the voting systems developed and used over the past twenty years.

The founders’ vision is that it is the role of technology to present the evidence of voters’ intent, make it efficient for canvassing boards to adjudicate ambiguous intent, record all decisions – human and software, and deliver the final results in a visually intuitive way that can be distributed easily to the stakeholders of an election as broadly as election law allows.

Since its founding, Clear Ballot has focused on developing a voting system that incorporated best practices, and that would address the problems of election voting systems in the market today: high cost of ownership, poor visualization of ballots and results, difficult to use systems, high storage costs, and lack of confidence in verifiable results.

Clear Ballot’s answer to these problems is:

- the Clear Ballot product of ClearVote™, including ClearEMS™ and ClearCount™
- the Clear Ballot project management and implementation program
- the Clear Ballot training and support program





The Clear Ballot solution was designed to help election officials 1) implement a uniform voting system quickly and cost efficiently, 2) improve the administration of elections on a platform that easily scales from single county to state-wide elections, and 3) build trust in the stakeholders of an election – candidates, parties, interest groups, citizens and the media.

The Clear Ballot solution includes the ClearVote product, services and support. ClearVote has two major modules - ClearEMS, which is in the final stages of development, and ClearCount, which is a commercialized product for use today. The ClearVote product and modules are described below:

- *ClearVote* combines an innovative new Election Management System with central count tabulation, visual verification and reporting. With ClearVote Election Officials will have a digitized election system providing digital identification of all ballots and an electronic database. Elections become completely transparent and public trust is increased.
- *ClearEMS* provides an Election Management System unlike any other in the industry. ClearEMS, designed by industry veteran Tab Iredale, uses a browser-based software infrastructure to enable features election officials have never before had. ClearEMS will significantly improve the election creation and ballot layout process for election officials, while providing exceptional ballot proofing techniques.
- *ClearCount* provides a central count tabulation system for vote by mail and voting centers. Scanners can be networked together and adapted to the size of each county, providing a low cost implementation that can be easily scaled up to statewide implementation.

### *Project Management and Implementation*

Clear Ballot has experienced project managers who have deep expertise in both implementation of voting systems and software applications, including enterprise systems. The Clear Ballot team will provide plans customized to the project, and maintain a constant flow of communication throughout the project. Our experience with developing applications like Lotus Notes, and working with elections in Florida, New York and Colorado attest to the high level of expertise and knowledge within the company.

The Clear Ballot implementation plan covers the entire scope of the project and work from contract award to certification of election results. A core part of this plan is to prepare users of the system in advance of the rollout, coupled with acceptance testing, training and deployment.



### *Training*

The Clear Ballot training program consists of in-person training, self-paced training videos, and extensive product documentation. Together they provide complete training for all roles in an election. Clear Ballot's training is comprehensive, effective, and timely, while at the same time seeking to minimize county costs.

The courses (described in §6.7 below) include training on the overall ClearCount product divided up into six discrete segments: an overview, installation and setup, system administration, L&A testing, operations and maintenance, and use of election reports. Initial training is provided in person with Clear Ballot trainers, supplemented by manuals, videos and Clear Ballot's online portal. Fujitsu will also provide training on the scanners used by the Clear Ballot solution through its extensive training and support programs.

### *Support*

Clear Ballot Customer Support includes in-person as well as remote support during all phases of the election. The Clear Ballot Help Desk is available by telephone or email. Customers may enter issues into Clear Ballot's secure defect-tracking system. Customers can also access the Clear Ballot online FAQ (knowledge base), which is updated regularly, and the online user forums. For mission-critical matters during the election period, members of Clear Ballot's technical staff are on the ground in the state and ready to assist counties.

Clear Ballot Customer Support works closely with our training and documentation staff to ensure that all materials are accurate, comprehensive, and up to date. If support is on a procedural or non-proprietary matter is required, Clear Ballot Customer Support may arrange a web conference or demonstration.

In addition, Clear Ballot has partnered with Fujitsu, the worldwide and U.S. market share leader in commercial scanning equipment and a company that provides 24x7 technical support and same-day on-site hardware support.

On an ongoing basis, Clear Ballot hosts User Group meetings. Statewide user group meetings may be held, as well as national group meetings that can be scheduled in the future with key accounts. Key accounts can provide useful product feedback and system enhancement recommendations.

### *Key Employees*

Clear Ballot was founded and is led by leading technology and voting system professionals. Individuals who have brought such products as Lotus Notes to market and who designed many of the voting systems and election standards in use today. Free to design a new system without the need to protect legacy product lines, we developed Clear Ballot products to implement best standards for ballot creation, tabulation and auditing by taking advantage of new software architectures that require only commercially available and cost efficient scanners.



The company has 13 employees, seven of who have significant voting system experience, including Tab Iredale, the leading developer and designer of voting systems at ES&S and Premier Election Systems. These core employees are supplemented by outside consultants, a large network of election system professionals, and Fujitsu, the multinational technology company and leader in high-speed scanners.

A brief description of some key members of the Clear Ballot team follows, supplementing the staffing biographies set out in §6.9.2 below

**Larry Moore, CEO**

Larry was the Senior Vice President of Lotus/IBM and the driving force behind the launch of Lotus Notes, a product that has generated over \$7B in sales and still generates \$450M annually. He founded ISYS Corp. a financial information company that he sold to Lotus, was a two-time CEO of venture-backed startups, and Vice President for Strategy for two venture-backed RFID companies. Larry oversaw more than 35 full election pilots of a post-election election audit system from 2009-2013 in Florida, Connecticut, New York, and Colorado conducted with Premier, ES&S Unity, ES&S ElectionWare, Dominion, Sequoia and Hart Intercivic technology.

**Tim Halverson, CTO**

Tim was a co-founder of Iris Associates, the company that developed Lotus Notes, an industry-leading groupware application. He served as its CEO as well as CTO and Chief Architect. At its peak Tim managed over 500 engineers. Tim designed and developed Clear Ballot tabulation and visualization software, and has conducted 35 full election pilots of the system.

**Tab Iredale, Chief Voting Systems Architect**

Tab joins Clear Ballot from Election Systems and Software where he was Director of Software Development, having worked on the ElectionWare product. Previously Tab was the Director of Product Development at Premier Election Systems in charge of the development of the GEMS (Global Election Management System) and the AccuVote product line. He has over 25 years of experience in developing hardware and software for the election industry.

**Jordan Esten, Director of Business Development**

Jordan was an investment banker at Robert W. Baird, where he advised management and boards of directors of public and private technology companies on corporate strategy, mergers & acquisitions, and equity offerings. Jordan received a B.S., with honors, from Carnegie Mellon University and an MBA from the Tuck School of Business at Dartmouth. Over the past 18 months, Jordan has participated in over 20 full election pilots in Florida, New York, and Colorado.



Additional staff:

- Brian Meyers, Director of Project Management (Former L.E.K. Consulting, Dartmouth A.B. and MBA)
- Chip Moore, Senior Engineer (former R&D at Dragon Systems speech-recognition company)
- Christine Sigman, Technical Writer (former Oracle and current adjunct lecturer in Technical Communications at Northeastern)
- Alan Eldridge, Software Security Engineer (former IBM and DEC)
- Don Nolin, Engineer (Q&A expert, extensive start-up experience including BladeLogic and RueLala)
- Hillary Rose, Marketing and Legislative Manager (former communications writer for presidential campaign in Florida)
- Ana Maria Quevedo, Sales Engineer (fourteen years experience in election industry including implementation, project management, certification, election programing and support)

Company Profile/Certifications/Statements

- Clear Ballot is a duly qualified corporation in good standing in the State of Delaware and is additionally authorized to do business in Massachusetts and Colorado.
- The ownership of the company is set forth in Appendix D hereto.
- The Company understands the goals and scope of the RFP as set forth in Section 2 Administrative Information. We have reviewed the State's timetable, logistic requirements and rules and regulations governing submission of an RFP response and proposal, as well as the procedures for interacting with the State. The Company is complying with the written terms and intent of this section.
- The scope of this project covers the entire election process from election management and ballot production through tabulation, ballot tracking, and results reporting. It is modeled on one large county but is expected to be able support scaling to all counties in the State, large and small. It will involve working closely with the State to design appropriate work process changes, and to train and support the Election Officials and staff on the voting system. Clear Ballot is confident that it has the technology and resources to carry out the work and provide systems that meet the requirements of the State.



### 3.0 Company Financial Status

#### *In general*

Clear Ballot is a technology start-up adequately funded to develop, implement and support its new voting system. It is a pre-revenue company with projections for revenue generation and expects to reach break-even by 2015. The financial model is to achieve a balance sheet and cash flow position that allows us to develop our product portfolio and the markets for those products as rapidly as possible. Our approach is to balance speed of product and market development with financial prudence.

We are working with current investors, strategic partners and private equity firms to manage cash needs as we grow, and we have had continuing support from our current investor group. Such funding is part of our pro-forma plan, since it can offer more flexibility to address variances in market adoption rate or other prevailing economic conditions. In addition, the Company has a substantial line of credit as set forth in Appendix D hereto.

#### *Financials*

We hereby request confidential treatment for our financials, description of our ownership, and disclosure of our financial backing, all of which are set forth in Appendix D hereto.



#### 4.0 Relevant Business Experience

The Clear Ballot solution is a newly developed solution and therefore has only been deployed in one live election – in Arapahoe County during the 2013 Coordinated Election. We have worked on all types of pilots including General Elections, Primary Elections, municipals, special elections, recalls and recounts. A summary of these is in the following section on prior proposals.

Members of the Clear Ballot team have been involved in numerous elections however - rolling out voting systems, training, implementing voting systems and dealing with all the issues that could arise in election management system projects. The particular experience of Talbot Iredale, Ana Maria Quevedo and Carolyne Kelley is set out below. Since much of this work was carried out for other EMS companies, it is not appropriate to comment on project quality or problem issues.

*See Appendix D for Contact Details for All Confidential References*

#### 4.1 Citrus County, Florida

**Project:** Providing a digital library of the 2012 General Election.

**Voting Equipment:** Tabulation and Reporting

**Training:** Citrus County Staff was trained to operate scan station equipment and to generate reports.

**Support:** Post-election support

##### *Organization and Transparency for Write-ins*

In Citrus County, Supervisor of Elections, Maureen Baird was looking for the most efficient way to organize Citrus County's election. When Absentee and Early Voting ballots come in co-mingled, a team of 25 temporary workers spends several days sorting ballots by precinct prior to even beginning an election audit. Results and Write-in records need to be presented to the canvassing board. Prior to using Clear Ballot, Mo did not have a solution to find her write-ins quickly and efficiently, keep the ballots with the voting group box, and present the results to the canvassing board. Mo stated, "I need something that is accurate and can be justified to the public, it would be very beneficial to be able to see all results in one place."

The first time Citrus County used Clear Ballot, Mo saved several days in her election process digitally sorting and categorizing ballots. With Clear Ballot's software, results and ballots from every precinct are digitized, allowing for quick categorization by precinct and quick location of a hard copy if necessary. Clear Ballot software displays write-ins from all races immediately in one location. Write-ins can be counted on screen and qualified candidates are shown on the digital tally sheet. Clear Ballot eliminates searching, sorting, and counting write-ins; as reports



are automatically generated. Write-ins are compiled in a visualization report displaying every write-in mark identified by the software. Write-ins can be categorized by precinct and contest for more organized formatting.

Write-in Mickey Mouse	Write-in MARY Spedale
Write-in Gary Gatewox	Write-in Steven Cobert
Write-in DAVID SETH RUPPEL	Write-in GILBERT PAUL THEISS
Write-in Pam Schaefer	Write-in Floyd Patrick Mue
Write-in MON of the Globe	Write-in Dave Weldon
Write-in Jason k Cox	Write-in Edwin Kennedy
Write-in Allen west	Write-in Lawrence Scott
Write-in Dylan Barfield	Write-in

## 4.2 St. Lucie County, Florida

**Project:** Auditing the results post-election to provide transparency and accuracy. During the 2012 General Election in St. Lucie County there were several voting system failures.

**Voting Equipment:** Tabulation and Reporting

**Training:** St. Lucie County Staff was trained to operate scan station equipment and to generate reports.

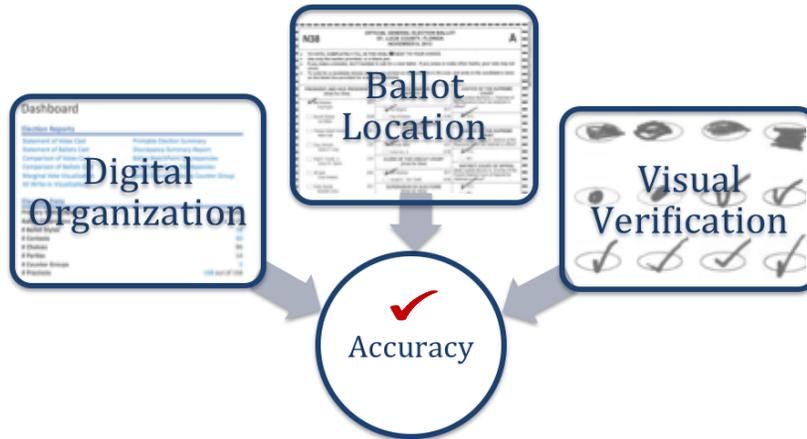
**Support:** Post-election support

### *Legitimacy for Close Elections*

In St. Lucie County, Supervisor of Elections, Gertrude Walker, was at the center of two very close races. In addition, St Lucie experienced Voting System failures during those races. Without proper ballot inventory software tools it is difficult to keep track of ballots. Close races require manual recounts, which are time consuming, prone to error and risk meeting deadlines.

In July 2013, Clear Ballot joined Gertrude in St Lucie to independently audit the vote. Clear Ballot's ballot inventory system built in to the software helped St Lucie digitally organize the election and allowed Gertrude to account for all box and ballot locations. Operations Manager, Neal Sullivan, says that the organization and speed that Clear Ballot provides gives a significant advantage to the county's capabilities. As the ballots were being scanned, Gertrude was able to use Clear Ballot's visual verification technology to review ballots and confirm an accurate vote count providing peace of mind and complete transparency. Gertrude said, "Clear Ballot provides

the best election tool created in the past 100 years.”



### 4.3 Leon County, Florida

**Project:** Providing Leon County with an alternative solution to current sorting procedures.

**Voting Equipment:** Tabulation and Reporting

**Training:** Leon County Staff was trained to operate scan station equipment and to generate reports.

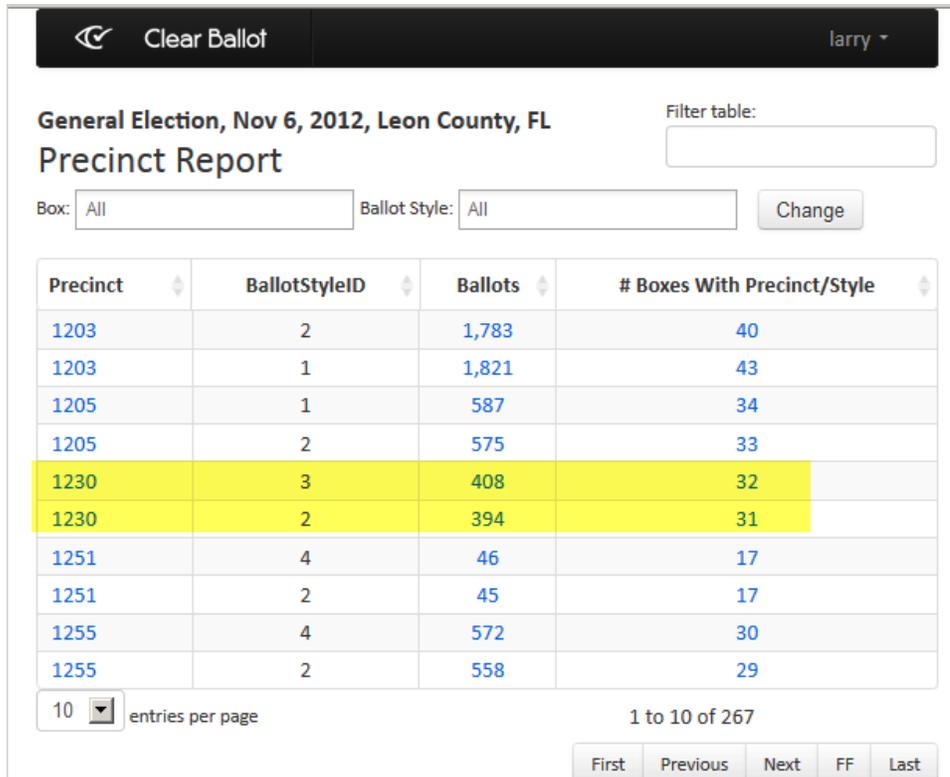
**Support:** Post-election support

#### *Improved Sorting and Procedures*

In Leon County, Mark Earley and his team spent significant time and money sorting absentee ballots and early voting ballots, which are comingled by precinct. Prior to Clear Ballot this slow process created a burden on Leon County and Mark was determined to find another way.

Clear Ballot provides Leon County with a quick and easy solution. Rather than presorting prior to scanning, ballots are scanned and automatically sorted by the software and can immediately be boxed and put in storage. Mark’s team no longer needs to sort and organize by precinct, which was the most time consuming part of an election. Now prior to his post-election audit, over 50% of his ballots have already been reviewed. Leon’s process went from archaic to revolutionary with one simple solution.

To prepare for Florida’s requirement of a post-election audit for 1% of the precincts, election department staff had to sort through the comingled mail-in ballots and early voting ballots – typically representing 50% of the ballot count – just to find the ballots of the randomly chosen list of precincts. For counties the size of Leon, several hundred work hours were consumed segregating ballots by precinct; larger counties could expend several thousand work hours.



General Election, Nov 6, 2012, Leon County, FL  
Precinct Report

Box:  Ballot Style:

Precinct	BallotStyleID	Ballots	# Boxes With Precinct/Style
1203	2	1,783	40
1203	1	1,821	43
1205	1	587	34
1205	2	575	33
1230	3	408	32
1230	2	394	31
1251	4	46	17
1251	2	45	17
1255	4	572	30
1255	2	558	29

10 entries per page 1 to 10 of 267

The highlighted area in the figure above shows that Precinct 1230 had 2 ballot styles – the 2012 General Election was a 2 card ballot. For Style #3, 408 cards were tabulated and were located in 32 inventory boxes. Clicking on the “32” will generate a report that would show the list of boxes that held ballot style ID 3 for Precinct 1230.

In June 2013, the Florida Legislature passed the first automated, independent audit statute that enabled Clear Ballot’s software to be used in lieu of the time-consuming and ultimately meaningless manual audit.



#### 4.4 Madison County, Florida

**Project:** Finding Madison a sustainable solution for its size and financial capacity.

**Voting Equipment:** Tabulation and Reporting

**Training:** Madison County Staff was trained to operate scan station equipment and to generate reports.

**Support:** Post-election support

##### *Fujitsu Scanners Adaptable to All Counties*

Madison County, Florida has a small team and budget; making it difficult to afford large, high speed, central count scanners, which they don't need. For small counties such as Madison, there's no middle of the road option in the election industry.

Clear Ballot allows Madison to have complete software functionality using affordable scanning hardware and as a small county, an option that is scaled to its needs.

Clear Ballot is partnered with Fujitsu, which offers a full line of high-speed off-the-shelf (COTS) scanners. Fujitsu's scanners are affordable and adaptable to counties of all sizes. Using the Clear Ballot software and a scanner designed for its size, Madison is able to scan all ballot images in a matter of hours. The Clear Ballot software then records images and categorizes ballot inventory. The visual verification technology, allows election officials to review an entire election efficiently, confirm the accuracy of its count, and provide legitimacy to the winners.

#### 4.5 Bay County, Florida

**Project:** Implementing a full ballot inventory system for Bay County.

**Voting Equipment:** Tabulation and Reporting

**Training:** Bay County Staff was trained to operate scan station equipment and to generate reports.

**Support:** Post-election support

##### *Ballot Inventory Organization*

Mark Anderson, Supervisor of Elections for Bay County, likes structure and organization in his office; however the 22-month retention period for ballots in Florida made that difficult. Finding a single ballot in a large warehouse was extremely difficult. Warehouse storage was expensive and fulfilling requests for the canvassing board were taking too long.

Clear Ballot provided Bay County with a complete ballot inventory system, which is automatically implemented into the software. After using Clear Ballot, Mark said, "if you're an election official, the word perfection, is all anyone expects ... anything that makes our life in the public eye more clear and more confident, that's what we should be doing." The Clear Ballot



software catalogs his entire election into a digital library and Mark is able to view his entire election, run reports and view every ballot. Images are stored in the software in the same order they are stored in ballot boxes, allowing for seamless ballot location if needed. Mark knows the location of every ballot in his warehouse and can use the collective election information to better run his future elections.

The Box Report provides each box ID number, links to the ballot images in each box, provides the number of precincts in each box and the scanning performance associated with each box.

BoxID	Ballots	Unreadable	Scan Station	Scanner Model	Scanner Serial	Scan Duration	Ballots Per Hour	# Precincts
EV-112	721	0	CBG_Scanner_01	FUJITSU fi-6800dj #3	001482	0:08:32	5,070	28
EV-070	625	9	CBG_Scanner_03	FUJITSU fi-6800dj	001108	0:07:28	5,022	52
EV-101	712	1	CBG_Scanner_01	FUJITSU fi-6800dj #3	001482	0:08:32	5,006	38
EV-111	728	1	CBG_Scanner_01	FUJITSU fi-6800dj #3	001482	0:08:47	4,973	26
ED-132	525	0	ScanStation09	FUJITSU fi-6800dj	001243	0:06:24	4,922	2

#### 4.6 New York State

**Project:** EAC Grant for Post-Election Audits with New York State Board of Elections (NYSBOE)

**Location:** Monroe, Saratoga, and Schenectady Counties

**Voting Equipment:** Tabulation and Reporting

**Training:** County Staff was trained to operate scan station equipment, and view reports in order to compare results with their tabulation equipment.

**Support:** Post-election support

The NYSBOE was awarded a grant from the EAC to assess innovative post-election audit methodologies. After an RFP process, Clear Ballot was chosen to conduct the pilot, which had the following requirements:

- Demonstrate the ability to independently interpret ballot styles;
- Accurately recognize and tabulate votes cast;
- Provide options for the comparison of tabulated voting system results and tabulated audit results;
- Correctly tabulate overvoted, cross-endorsed candidates;
- Generate reports to assist election administrators in comparing and evaluating votes cast.

Clear Ballot and NYSBOE worked closely to develop a plan to audit both of the voting systems currently certified in New York State, ES&S and Dominion. In New York State, audits are conducted by the tabulator. The pilot was also designed to audit counties of varying size, to show the scale of system.



Clear Ballot conducted the five post-election audit pilots in three counties (Monroe, Saratoga, and Schenectady) in late 2012 and early 2013, to audit their 2012 Primary and General elections. The Schenectady County Board of Elections uses the Election System and Software (ES & S) OS 200 in their county, and the Saratoga County Board of Elections uses the Dominion Voting System's ImageCast. Clear Ballot was able to scan and tabulate both sets of ballots, and provide a transparent audit for each county. Monroe County was added to expand the functional overview of the system's use in a larger jurisdiction. In Monroe, Dominion corporate officials were in attendance during the pilot.

Upon completion of the Testing Phase in the original contract, county election commissioners have asked that certain features be added to the Clear Ballot software. Each new feature is directly tied to New York State audit requirements, and will allow the election officials to formally complete the audits and more efficiently develop important communication reports. As an amendment to the contract, Clear Ballot completed two additional phases: Election District (ED) based reporting tool and an audit reconciliation feature.

The NY State Board of Elections was so impressed by the software and positive feedback from county officials that it asked Clear Ballot to go through NY Central Count Certification. The results of the EAC Grant and pilots were written up by the NY State Board of Elections. (*See <http://www.elections.ny.gov/Publications.html>*).

#### 4.7 El Paso, Colorado

**Project:** Clear Ballot worked with El Paso to confirm the accuracy of a highly contentious recall election. Two months later El Paso was preparing for a recount and Clear Ballot provided a digital library to avoid manual sorting, an expensive and timely process in past years.

**Voting Equipment:** Tabulation and Reporting

**Training:** El Paso County Staff was trained to operate scan station equipment, to generate reports and locate ballots through the ballot inventory system.

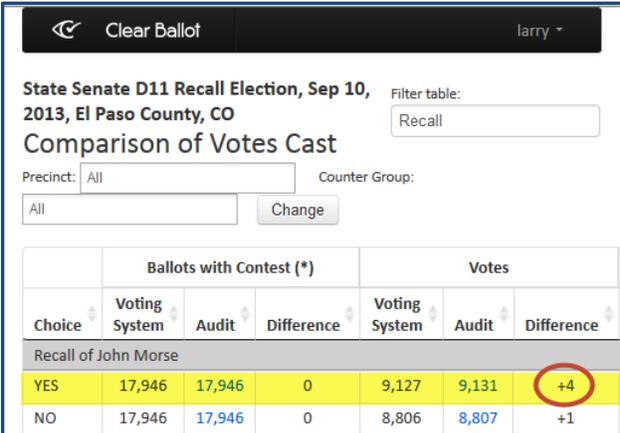
**Support:** Post-election recall support and preparation for a recount.

#### *Accuracy for Recalls and Preparation for Recounts*

For the first time in Colorado State history, two State Senators were recalled during special elections held on September 10, 2013. The recall elections occurred in two counties, Pueblo and El Paso, Colorado. Voters in Colorado Senate District 11, voted to recall State Senator John Morse over a highly contentious national debate. Two months later El Paso conducted a recount

of the Harrison School District 2 Board of Directors Election, the second close School Board Election in two years.

Prior to the recall, El Paso did not have an easy and fast solution for validating the accuracy of elections, particularly during close races. Current voting systems do not provide an easy solution for resolving a close election, and in previous elections El Paso has had costly, manual intensive and time consuming elections due to close races. Although the recall election was not close enough for a recount, Clerk and Recorder, Wayne Williams chose to verify the election results, with innovative technology and without manual work, a major step forward for the election industry.

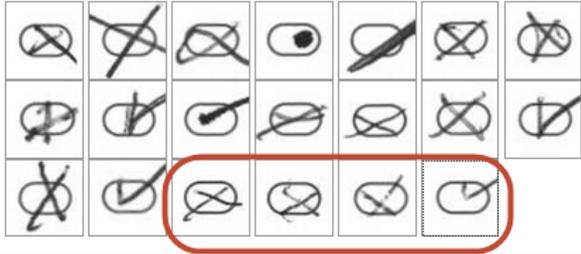


Choice	Ballots with Contest (*)			Votes		
	Voting System	Audit	Difference	Voting System	Audit	Difference
Recall of John Morse						
YES	17,946	17,946	0	9,127	9,131	+4
NO	17,946	17,946	0	8,806	8,807	+1

**Least Confident Votes for Recall Question Shall John Morse be recalled from the ...:YES**

(2 non-displayable remade ovals not shown...)

(9,109 more confident ovals above these not shown...)



The Comparison of Votes Cast shows the difference in the vote count between the ClearAudit results and the legacy voting system. The ballot count matches perfectly; however, ClearAudit found 4 more votes.

How can we confirm this result quickly?

By clicking on the “4,” the “Oval Visualization Report” is generated. This unique report shows the least confident votes for the “Yes” vote. While it is not known how the legacy system adjudicated a given ballot, we can clearly see that the least confident 20 votes showed clear intent for the “Yes” choice. Clicking on any oval brings up its ballot.

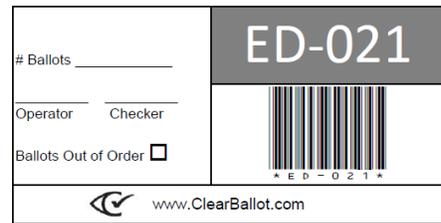
Clear Ballot’s web-based software captures each ballot image from the election using Fujitsu scanners and provides visual verification and easily generated reports to confirm accuracy of the results.

To audit the recall election, two Fujitsu commercial, high-speed scanners (which each scanned an average of 5,000 ballots an hour) were set up in the El Paso County Election Operations Center.



*Preserving and Automating the Ballot Chain-of-Custody*

The 66 boxes in which the ballots were stored and sealed were opened by El Paso elections office staff, cataloging each step. Two additional staff scanned the ballots as results were displayed automatically on screen, and ballots were then returned to their boxes. An Audit label was affixed to the box to track the location of ballots using Clear Ballot software. The two county employees then resealed each box to complete the process. The entire operation took less than four hours and provided a clear analysis of the election results.



After the ballot images were captured, Clear Ballot’s software digitally sorted the ballots to create an election library. The software then audited the election through visual verification technology and quickly generated digital reports, allowing for a swift and thorough validation of the voting results.

The procedures included two employees cataloging each time a seal was broken to open a ballot box, the movement of the boxes, and the contents of the box. Employees noted that Clear Ballot’s digital election library and inventory list would prove even more helpful, allowing the location of ballots to be digitally stored. Clear Ballot’s patented software allows officials to analyze ballot images using Visual Verification, and confirms correct adjudication.

To help automate the ballot chain-of-custody, Box Report provides a detailed description of the contents in each ballot box including the number of ballots, how many are unreadable, which scanners were used and the scanning operator’s performance. Each ballot box is given an identification number, which links to the visualization of its content.

BoxID	Ballots	Unreadable	Scan Station	Scanner Model	Scanner Serial	Scan Duration	Ballots Per Hour
ED-021	585	0	ScanStation09	FUJITSU fi-6800dj	100295	0:05:15	6,686
ED-030	128	0	ScanStation09	FUJITSU fi-6800dj	100295	0:01:09	6,678
ED-008	150	0	ScanStation09	FUJITSU fi-6800dj	100295	0:01:21	6,667
ED-027	199	0	ScanStation09	FUJITSU fi-6800dj	100295	0:01:48	6,633
ED-028	99	1	ScanStation09	FUJITSU fi-6800dj	100295	0:00:54	6,600

## 4.8 Arapahoe County, Colorado

**Project:** Conduct the largest risk-limiting audit ever attempted using a single ballot cast vote record

**Equipment & Software:** 2 Fujitsu 6800 high-speed scanners; ClearCount scanning, tabulation and reporting software.

**Training:** Clear Ballot staff trained staff in the Arapahoe County election department to operate Fujitsu scanners and view automatically generated digital and printable reports

**Support:** On site, post-election support

### *Largest Ever Single Ballot Risk-Limiting Audit*

In November 2013, Clear Ballot performed a Risk-Limiting Audit (RLA) pilot in Arapahoe County providing on-site support and training. The process was done in-line with the election, with the county scanning on Sequoia 400C high-speed scanners. Scanning for the RLA were two Fujitsu 6800 scanners which were fully able to keep up with the 400C.

The unreadable ballot count was a striking difference between the two scanning technologies: out of nearly 140,000 ballots cast, the 400C out-stacked over 1,000 ballots that required manual duplication; the Fujitsu scanners were able to read all but 12 ballots.

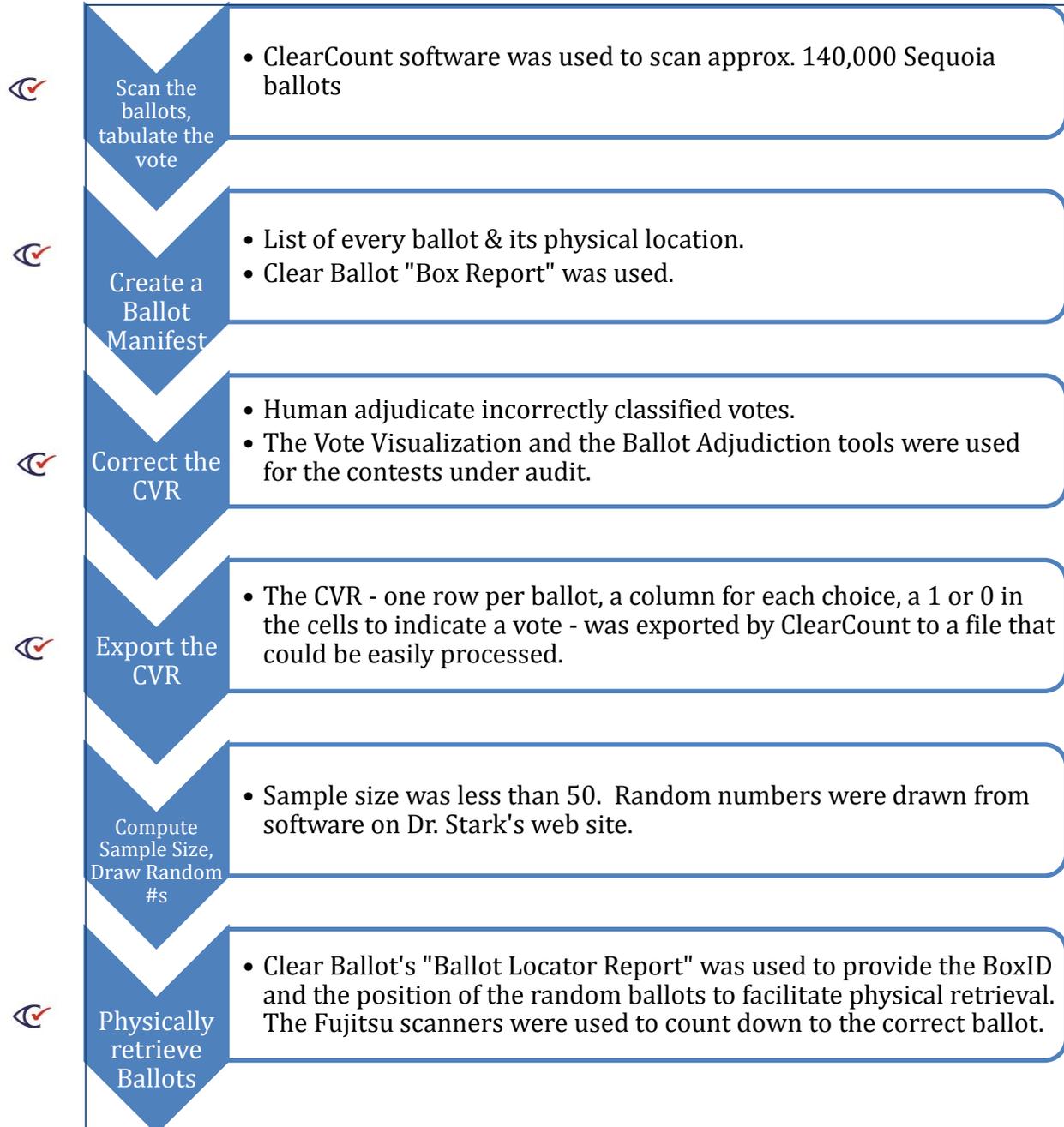
### *The Risk Limiting Audit*

While most audits try to answer the question, “Did the voting system work as designed,” a Risk Limiting Audit is a statistical audit that tries to answer the question, “Did the right winner win?”

Colorado has been a pioneer in piloting RLA in elections. One of the main issues is the number of randomly selected ballots that it takes to achieve statistical significance. That number varies inversely with the margin of the contest: closer races require more randomly selected ballots; very close races may require a full manual recount. The inventor of the Risk Limiting Audit methodology, Dr. Philip Stark, Chair of the Department of Statistics at U.C. Berkeley, California, recommended to CDOS that Clear Ballot be brought in under an EAC grant to help devise a more streamlined approach to conducting the RLA. The Arapahoe pilot, completed in 1 day, was one of the largest elections the RLA team had done and it was one of the fastest ever conducted. Clear Ballot’s methodology made that possible.

Unlike audits that had been done in counties like Boulder, Colorado, where as many as 9,000 ballots were hand sampled, the Arapahoe RLA pilot used a “single-ballot cast vote record (SB-CVR)” as the basis of selecting random ballots. Less than 50 ballots were required to achieve statistical significance using a SB-CVR.

The steps taken to conduct the Arapahoe RLA pilot and the Clear Ballot tools used are show below:



 Denotes use of Clear Ballot software



#### 4.9 Additional Business Experience by Clear Ballot Staff

##### A) Ana Maria Quevedo

Ana Maria Quevedo has over 15 years of election experience. Ana Maria has managed implementations of nationwide \$50Million+ ballot optical scan equipment and countywide \$26Million+ DRE projects.

##### *Election Systems and Software, Omaha, NE*

##### 1. Lead Project Manager, Miami-Dade County, 7,200 touch screen units (2002- 2005)

- Project: Miami Dade County project management consisted of a large-scale implementation of a \$26Million automated voting system (7,500 touch screen units) in complex cultural and political environment. At the time, Miami Dade County had over 900,000 registered voters, 580 polling locations, 767 precincts and 22 early voting sites. Ballot was printed in three languages and in some elections; ballot styles ran 5 pages per voter with over a million returned absentee ballot cards.
- Reference: Lester Sola –Internal Services Director, [solal@miamidadegov](mailto:solal@miamidadegov) Office: 305-375-2363
- Timeline: Assisted Miami Dade County elections department from February 12, 2002 through March 15, 2005
- Hardware: 7200 iVotronic DRE units, ten M100 precinct scanners and eight M650 central ballot scanners.
- Software: Unity EMS which included several modules: election data manager, ballot image manager, ballot on demand, hardware programming manager, data acquisition manager and election reporting manager
- Training: Poll worker training provided. Trained County trainers and served as training coordinator in 2002. Election staff training provided. Trained County elections staff on equipment acceptance testing, election programming, ballot layout, Logic and Accuracy tests, Election Night reporting and post-election audits
- Support: Provided support for early voting, Election Day voting and post-election activities
- PM Services: Ana had principal responsibility for large-scale implementation of the \$26Million automated voting system (7,500 touch screen units) in complex cultural and political environment. This required election programming software training for Elections Department IT personnel and warehouse staffers, assistance with State system certification, and substantial training. Training was provided for County warehouse personnel on precinct tabulator testing procedures to be performed prior to deployment to polling location, and training and management of 55



temporary election preparation employees who assisted the County with election coding logic and accuracy testing, equipment warehouse preparation, helpdesk support on election day, poll worker training, election day field support and election night result tabulation.

In addition Ana functioned as on-site specialist for hardware and software in all election tasks including election programming, ballot layout, L&A testing, early voting, Election Day support and canvassing. She conducted warehouse review, provided recommendations for touch screen preparation and testing, assisted the development of Election Day procedure manuals for the use of precinct officials, and performed key election tabulation and results data transmission role for 150 County elections.

Ana developed, in coordination with the Supervisor of Elections, training and related documents and procedures pertaining to the pre-election, Election Day procedures including testing protocols and timetables. She also performed quality control of the programming and tests for over 150 official elections conducted with the touch screen tabulators – iVotronic –, M100 precinct scanner and M650 absentee central scanners.

Finally, Ana assisted with contract negotiations, project accounting, resource management and invoice collection

## 2. Lead Project Manager, Placer County, CA, 200+ precinct ballot scanner units (2000)

- Project:** Placer County project management that consisted in a six-month equipment rental agreement. The engagement included precinct equipment, laptops for transmission of precinct cartridges from regional sites, election night reporting and canvassing support, ballot printing services, poll worker training services, and assistance with voter outreach campaign.
- Reference:** Ryan Ronco –Assistant Recorded- Registrar of Voters,  
[Rrconco@placer.ca.gov](mailto:Rrconco@placer.ca.gov), Office: 530-886-5650
- Timeline:** Assisted Placer County elections department from August 2000 through January, 2001
- Hardware:** Over 200 M100 precinct scanners
- Software:** Unity EMS
- Training:** Poll worker, “train the trainer”, election staff. Trained County trainers on pollworker training and equipment demos for outreach purposes. Also trained Elections IT personnel on election night reporting to allow county to perform their election canvassing.
- Support:** Provided support for early voting, Election Day voting and post-election activities



PM Services: Coordinated hardware and software preparation, election programming, ballot layout, pollworker training, Election Day field support, precinct data transmission and Election Night tabulation and reporting.

3. On-site Lead Project Manager, Country of Venezuela, 7,300+ precinct scanners (1998- 1999)

**Project:** The vote automation in Venezuela consisted in a very complex implementation of 7,300 OMR ballot scanners; a \$50Million+ contract. At the time, the country of Venezuela had over 12 Million registered voters, over 5,000 polling locations. Ballots were printed in colors and candidate pictures were mandatory.

**Reference:** Allan Benek, former ES&S Director of Customer Services, *Cell: 402-321-3855*

**Timeline:** Assisted Venezuelan National Electoral Council (CNE) from July 1998 through March 1999

**Hardware:** 7,300 M100 precinct scanners

**Software:** Unity EMS

**Training:** Poll worker training provided. Trained County trainers and rendered training coordinator duties in 2002. Election staff training provided. Training coordinator. Assisted with CNE pollworker trainers and warehouse personnel training

**Support:** Provided Election Day support at help desk at election headquarters

**PM Services:** On-site lead project manager. Assisted with software and hardware customization to ensure that system met local requirements. Resource management. Assisted with warehouse inspections and provided recommendations for equipment preparation and testing. Oversaw equipment acceptance testing. On-site pollworker training coordinator. Assisted the development of election day procedure manuals for the use of precinct officials

**B) Carolyn Kelley**

Carolyn Kelley has over 20 years of election experience. Some installations Carolyn has managed include NYS \$75M+ project with optical scan election district system w/ADA components, NV statewide system for 12M with DRE precinct tabulators using a verivote printer (national lead product) plus optical scan central count for mail ballots, and City and County of San Francisco \$10M system with DRE precincts tabulators + optical scan precinct tabulators & central count for mail ballots.



*Sequoia Voting Systems, Denver, CO*

1. Regional Project Manager, New York State, 75M (2008)

**Project:** New York project management consisted of 7 regions for a large-scale implementation of ImageCast Optical Scan Tabulators with Accessibility Components as Plan B, Phase 1 statewide system change.

**Reference:** Veronica Spencer – Former Sequoia Director of Support Services,  
[Fiesta93@comcast.net](mailto:Fiesta93@comcast.net), Mobile: 734.707.5780

**Timeline:** February 19, 2008 through closeout of Plan B, Phase 1, December 9, 2008

**Hardware:** 6.5K ImageCast Optical Scan Tabulators w/Accessibility Components,

**Software:** Democracy Suite EMS system, RTR Reporting

**Training:** Poll worker training provided, train-the-trainer sessions were conducted at regional training sites. County election staff was trained on equipment acceptance testing, Logic and Accuracy tests, Operations and maintenance, election night reporting and post-election audits.

**Support:** Provided for early voting, election day voting and post-election activities:

**PM Services:** Regional responsibility for 14 counties in the implementation of a \$75M contract for ImageCast Precinct Base Scanners w/accessibility components. Election definition programming was provided by Sequoia EMS coders for the Primary and General Election Phase 1 rollout assistance. 10K machine cartridges and backups were programmed for each election.

Regional training was conducted for county warehouse personnel on the optical scanner tabulator operation, maintenance and storage procedures. Site surveys were performed to determine if facilities met recommended storage and staging specifications. Trained and managed county staff with equipment setup, accuracy testing, equipment warehouse preparation & logistics, helpdesk support on election day, poll worker training, election day field tech support, and election night logistics.

Provided on-site and phone support for hardware and software in all election tasks including importing election programming files, layout proofing, L&A testing, loading election definition onto scanner cartridges, audio ballot file preparation/proofing, early voting, and election day support.

Assisted the implementation team with training and related documents and procedures pertaining to change management, training, best practices, voter outreach, and Election Day procedures. Assisted with contract requirements validation, subsequent sales orders, RMAs for repairs or replacements, resource management, and receivables.



2. Senior Project Manager, State of Nevada, DRE w/Verivote Printer+ optical scanner units for absentee central count (2004)

**Project:** This project was for a statewide voting system for 1.1 Million registered voters in 1,814 precincts. The installation consisted of precinct tabulators with Verivote Printers. Optical scan manual-feed units and central count units were included for absentee tabulation. Verivote Printers were a national lead product that was still in certification compliance review at the project initiation.

**Reference:** Harvard “Larry” Lomax, Registrar of Voters, Clark County, NV, *Office:* 720.455.8683

**Timeline:** Project initiation was March 2004 through November 2004. General operations and maintenance and additional training deliverables continued to October 2005.

**Hardware:** 1935 AVC Edge 2 DRE w/Verivote printer & audio devices, 5 400-C central count tabulators, and 33 Insight Manual feed Optical Scan Absentee tabulators,

**Software:** WinEDS Election Management Systems.

**Training:** Poll worker training provided, plus regional Train-the Trainer workshops. In addition election staff training provided.

Change management regional workshops were conducted to enable a smoother transition. Familiar naming conventions were used to aid with the adjustment. I provided training for the county staff on Operations and Maintenance, Acceptance Testing, L&A, storage and deployment. The team trained Elections personnel on WinEDS tally, election night reporting, and audit.

**Support:** Support provided for early voting, Election Day voting and post-election activities

**PM Services:** Coordinated all aspects of implementation from ordering, manufacturing, delivery, testing, training, and support. Conducted joint weekly NSOS/County/PM project status review and update. Established warehouse layout plans and performed site surveys. Obtained jurisdictional information and reporting requirements to prepare for data migration.

Assisted with voter outreach/education materials. Conducted on-going new system demos and meetings with community groups.

Regional training was conducted for county personnel on the Insight scanner and AVE Edge DRE operation, maintenance, and storage procedures. Trained and managed county staff with equipment setup, accuracy testing, equipment warehouse preparation & logistics, helpdesk support on Election Day, poll worker training, election day field tech support, election night logistics, and WinEDS tally and reporting.

Sequoia provided the optical scan ballot layout, DRE election definition files, and assistance with preparing the machines cartridges for proofing and L&A.



Coordinated with the State of Nevada on their Election Night results upload development for the statewide reporting website portal. The project was transferred to maintenance and support through the NSOS Service Bureau set-up needs and extended warranty.

3. Senior Project Manager, City and County of San Francisco (2006-7 )

- Project: This project was a mixed solution with DRE, Optical Scan Precinct tabulators, and Optical Scan Central Count tabulators. The contract was 10M in a jurisdiction of 4.4K registered voters. The election definition was coded in English, Spanish, Mandarin and Cantonese.
- Reference: Beth Lipski, Project Manager for San Francisco, [bethlipski@yahoo.com](mailto:bethlipski@yahoo.com), Cell: 650.218.0596
- Timeline: January 2006 to November 2007
- Hardware: 610 AVS Edge 2 w/VeriVote Printer, 610 Optical Scan Precinct tabulators, 2 400-C Optical Scan Central Count tabulators,
- Software: WinEDS Election Management Software
- Training: Poll worker training provided, plus train-the-trainer for county staff and poll worker training support was provided. Training was provided for all election staff.
- Support: Support provided for pre-election, early voting, election day voting and post-election activities
- PM Services: The following project management services were provided:
- On-site lead project manager communication and coordinating with the SF Project Manger
  - Assisted with software and hardware procurement tracking and acceptance planning.
  - Assisted with transition warehouse planning and relocation.
  - Reviewed and established Network/Hardware requirements for EMS System and absentee central count system. Validated and confirmed access and security specifications
  - Established Central and Remote Tally Plan
  - Assisted with the media outreach and voter education planning.
  - Coordinated with the technical support staff for election creation for both the DRE and Optical Scan Ballots, Sample ballots, and audio programming in four languages.
  - Assisted development of manuals, procedures, and forms for pre-election preparation, early vote, L&A, Operations and Maintenance, warehouse staging and logistics to poll sites, and Election Day procedure manuals.



- Conducted and coordinated training sessions for pre-election, EV, Election Day, L&A, poll workers, and E-Day field technicians.
- Development of Ranked Choice Voting Module was completed, tested, and delivered.
- WinEDS training sessions, including the Ranked Choice Voting deliverable, tally, and reporting, were also completed.
- Project closeout was convened with on-going support and maintenance.



## 5.0 Prior Proposals

Below is a list of proposals Clear Ballot has submitted. The proposals include various elements pertinent to the Colorado RFP, including EAC Grants, ClearCount product capabilities, and ballot style validation.

State of Florida Bid Submitted: October 1, 2011 Result: Awarded	Kurt Browning Former Secretary of State, Florida
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The Florida Election Transparency Project is the first ever large-scale attempt to verify elections cast on paper ballots across multiple voting systems – independently, quickly, accurately, uniformly and completely. The project was started by Secretary of State Kurt Browning. It was a year-long pilot program involving the Supervisors of Elections in seven (Bay, Citrus, Leon, Madison, Okaloosa, Duval, and Indian River) Florida counties. Four elections were selected: the 2010 General, 2012 Presidential Preference Primary, 2012 State Primary and the 2012 General.

Counties vastly improved their ballot procedures over the four elections, as they were able to see the detail behind the location of ballots. The success of the project resulted in Florida implementing Florida Statute 101.591 that allows for independent, automated audit of the voting system. It is the first automated audit statute in the nation, and will put Florida on the leading edge of election integrity and transparency.

St Lucie County, Florida Bid Submitted: June 21, 2013 Result: Awarded	Gertrude Walker Supervisor of Elections
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In response to two close elections during the 2012 General Election, St Lucie County reached out to Clear Ballot to rescan 100% of her ballots and use the software to confirm the vote counts and ballot location. In addition to the two very close races, St Lucie has experienced Voting System failures during those races. Unfortunately without proper ballot inventory software tools; it's difficult to keep track of ballots. Close races require manual recounts, which are time consuming, prone to error and risk meeting deadlines.

In July 2013, St Lucie used Clear Ballot to independently audit the vote. ClearAudit's ballot inventory system helped St Lucie digitally organize the election and allowed St Lucie to account for all box and ballot locations. As the ballots were being scanned, St Lucie was able to use ClearAudit's visual verification technology to review ballots and confirm accuracy.

Putnam County, Florida Bid Submitted: September 29, 2013 Result: Awarded	Charles Overturf Supervisor of Elections
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### ClearAudit Software

Putnam County purchased ClearAudit in September 2013, and used the product to audit the November 2013 municipal election. Putnam is a great example of the scalability of the Clear Ballot solution. Using a Fujitsu fi-6670 scanner, a less expensive option than the high speed fi-6800, Putnam was able to get the idle scanner for a county of their size (44,000 Registered Voters). The Clear Ballot team installed the ClearAudit system in October 2013, and provided training to the county team. They picked up on the process very quickly, and used it successfully in their 2013 municipal election.

State of New York	Robert Warren
Bid Submitted: January 10, 2012	Certification Manager
Result: Awarded EAC Grant	NY State Board of Elections

### Post-Election Audit, EAC Grant

Clear Ballot conducted five post-election audit pilots in three counties (Monroe, Saratoga, and Schenectady) in 2012 and 2013. In New York, audits are conducted by the tabulator, and Clear Ballot performed the audits on both ES&S and Dominion precinct scanning machines.

Upon completion of the Testing Phase in the original contract, county election commissioners have asked that certain features be added to the Clear Ballot software. As an amendment to the contract, Clear Ballot completed two additional phases: Election District (ED) based reporting tool and an audit reconciliation feature.

The NY State Board of Elections was so impressed by the software and positive feedback from county officials that it asked Clear Ballot to go through NY Central Count Certification. The results of the EAC Grant and pilots were written up by the NY State Board of Elections.

State of Colorado	Christi Coburn
Bid Submitted: November 30, 2012	Colorado Division of Elections
Result: Awarded EAC Grant	

### Risk Limiting Audits, EAC Grant

The major objectives of the CDOE in securing the services of a Post-Election Audit System and a Risk Limiting Audit System proposal were to:

1. Provide each jurisdiction an independent, user friendly, and transparent validation that a voting machine accurately counted and aggregated votes;
2. Develop a RLA process that can be performed successfully with a variety of voting technologies and vendors.

Clear Ballot performed public demos in El Paso County and at the Secretary of State's Office in Denver in April 2013. In November 2013, Clear Ballot performed a Risk-Limiting audit pilot in



Arapahoe County. The process was done in-line with the election, with the county scanning on their voting system scanners, and then scanning on Fujitsu scanners.

El Paso County, Colorado	Wayne Williams
Bid Submitted: August 20 and November 7, 2013	Clerk & Recorder
Result: Awarded Both Projects	

### **Recall Election Audit**

For the first time in Colorado State history, two State Senators were recalled during special elections held on September 10th, 2013. In an effort to show constituents the integrity of the recall election, El Paso County Clerk and Recorder, Wayne Williams, asked Clear Ballot to conduct an audit of the election to confirm the highly publicized election was counted accurately.

### **Recount Election Support**

Clear Ballot will assist the El Paso County Clerk and Recorder's Office in preparation for an expected recount of the Harrison School District Board of Directors election. Per Colorado law the recount must be conducted on the same certified equipment as the original count, and the unique services offered by Clear Ballot allow preparation for a recount to occur faster and cheaper than previously employed methods. All ballots from the 2013 Coordinated Election are currently stored in the order they were counted, meaning that ballots for the recount are dispersed between 269 boxes each containing about 600 voted ballots. With the electronic images, Clear Ballot will help the Clerk and Recorder's Office locate each of the approximately 8,039 ballots from Harrison School District 2 intermingled with the 150,000 ballots cast county-wide.

State of New Hampshire	Anthony Stevens
Bid Submitted: July 25, 2012	Deputy Secretary of State, Director of
Result: Awarded Project	Elections

### **Automated Ballot Style Validation**

For elections where federal or statewide contests appear on the ballot, the New Hampshire Secretary of State is responsible for creating and printing election ballots used by towns and municipalities. Unless rigorous checks are tested and in place, errors may be introduced that may require printing some or all of the State's ballots again.

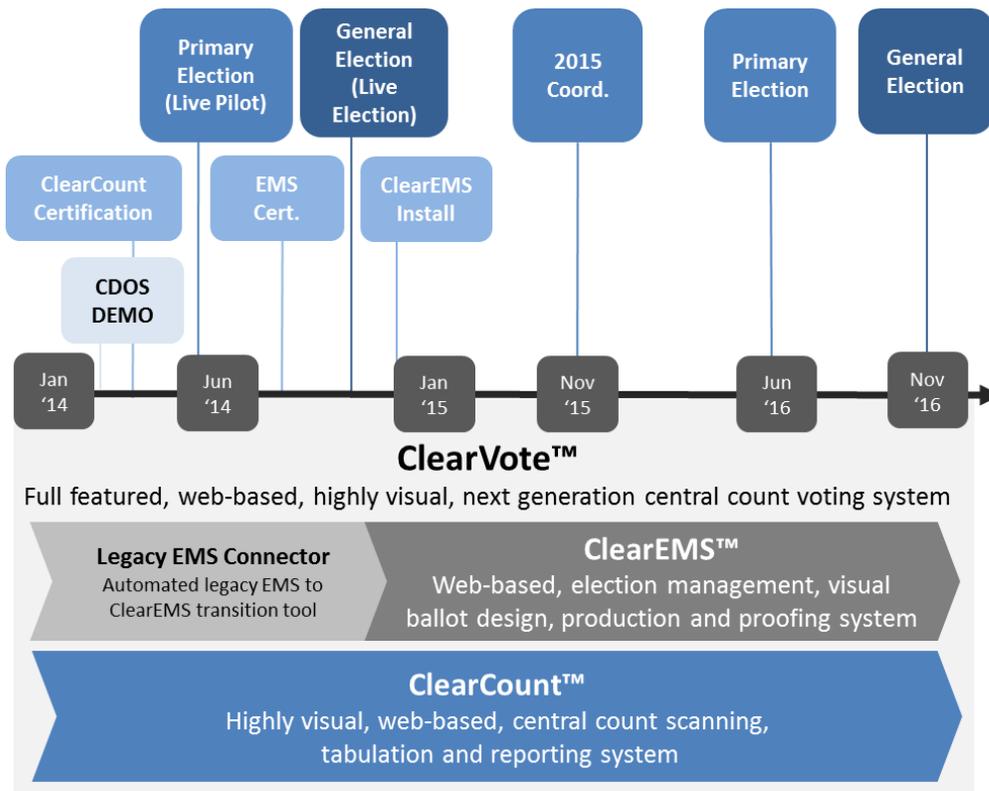
The Clear Ballot has developed an automated software procedure to perform validity checks on ballots. These validity checks are designed to identify errors and inconsistencies in ballots across potentially hundreds of ballot styles. They have been successfully used in two prior elections in New Hampshire – the 2010 State Primary and the 2012 Presidential Preference Primary and were used again by New Hampshire to perform validity checks ahead of the 2012 General Election.

## 6.0 Project Approach

### 6.1 Project management

Clear Ballot has a formal process and tools for managing the design, implementation, training and support for transitioning Colorado to a new uniform voting system. Our staff has experience with past elections, has managed implementation and integration of new technology with legacy systems, and has directed and managed training programs. This section highlights our processes, people and reporting tools that would be used.

The rollout of ClearVote in Colorado will be carried out in an easy transition as set out in the diagram below.





## 6.2 UVS software

The Clear Ballot voting solution has been developed using state-of-the-art technology, including a modern software architecture that supports flexibility and scalability. We believe that we meet all the goals of the election process. Any features described in this RFP, and in Section 12.0 hereof in particular, which are not offered by Clear Ballot, are minor or necessary only if legacy voting systems were to be used. We have provided a GAP analysis on technical features described in the RFP that supplements our answers to Section 12.0 (*see* Appendix A hereto).

The Clear Ballot solution includes the ClearVote product, services and support. ClearVote has two major modules - ClearEMS, which is in the final stages of development, and ClearCount, which is a commercialized product for use today.



<p><b>ClearEMSTM</b></p> <p>Web-based, election management, visual ballot design, production and proofing system</p>
<p><b><u>Data Repository</u></b></p>
<p><b>Jurisdictional</b></p> <p>Districts, precincts, splits</p>
<p><b>Election-specific</b></p> <p>Contests, vote rules, choices, parties, languages, rotation, etc.</p>
<p><b><u>Ballot Design &amp; Production Suite</u></b></p>
<p><b>Ballot Style Layout</b></p> <p>Highly visual, drag-and-drop, error checking</p>
<p><b>Ballot Proofing</b></p> <p>Visual error identification (e.g. mark bleed-through detection)</p>
<p><b>Ballot Production</b></p> <p>Automated ballot production, stubs, cut-marks</p>



## ClearCount™

Highly visual, web-based, central count scanning, tabulation and reporting system

### Ballot Scanning

High-speed, networked COTS scanners, three price points

### Tabulation

Tabulates ballots from *all* major voting system vendors, flags unreadable ballots

### Electronic Adjudication

Visual voting & proofing for unreadable or override, automated recordkeeping

### Reporting

Visual reporting, election reports, administrative reports

### *Advanced Features*

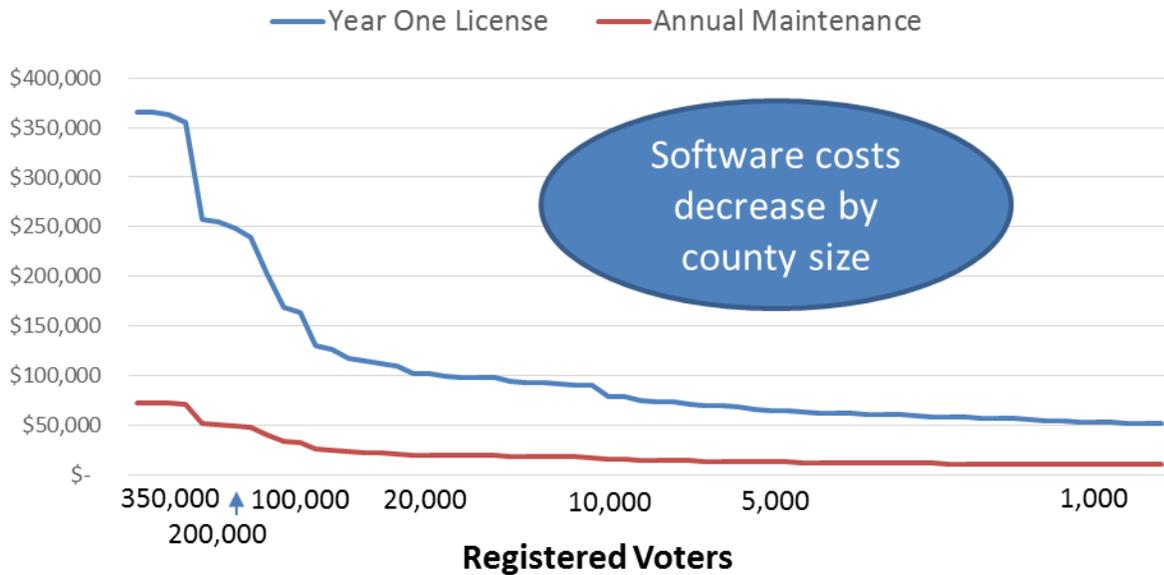
### Recount Support

Visual adjudication, automated recordkeeping

### Post-Election Audit

Single-ballot risk limiting audit, tabulator and precinct level audits

Because of the software architecture of ClearVote, pricing can be more in line with county budgets. ClearVote offers two pricing models, (1) a perpetual software license purchased in year one with annual maintenance and support fees and (2) a subscription model without the large upfront license cost and annual payments which include licensing, maintenance and support. ClearVote pricing varies depending on the size of the county, so it can be cost efficient for all counties. Remember, one size does NOT fit all, and Clear Ballot has a solution tailored for each county.



### *Technical Description of Clear Ballot Software*

The Clear Ballot software was developed on Python version 2.7.3 and JavaScript (the JavaScript version is the version that is included on the particular Web browser being used).

Clear Ballot does use open source software, but no other proprietary third-party software. All API libraries are open source. The scan server and database server run open source Ubuntu Linux.

The following is a list of all third party software used.

1. Client and Server
  - Python framework ("python", 2.7.4)
  - Python MySQL dB library ("python-mysqldb", 1.2.3-1ubuntu1)
  - Python Imaging library (PIL) ("python-imaging", 1.1.7+2.0.0-1ubuntu0.1)
  - PyInstaller (2.0)
2. Server-specific 3rd-party software:
  - Operating System (Ubuntu 13.04-server-amd64)
  - Database Server ("mysql-server", 5.5.32)
  - Web Server ("apache2", 2.2.22-6ubuntu5.1)
  - Web Server FCGID module ("libapache2-mod-fcgid", 1:2.3.7-0.ubuntu2)
  - File Server ("samba", 2:3.6.9-1ubuntu1.1)



- Python web.py library ("python-webpy", 1:0.37+20120626-1)
- 3. Client-specific 3rd-party software:
  - Python Twain library (1.0.5)
  - Python Pywin32 library (2.1.6)
- 4. Browser-specific 3rd-party software:
  - Javascript "jQuery" library (1.10.2)
  - Javascript "jQuery-migrate" library (1.2.1)
  - Javascript "Bootstrap" library (2.3.2)
  - Javascript "tooltip" library (1.3)
  - Javascript "DataTables" library (1.9.4)
  - Javascript "FixedHeader" library (2.0.6)
  - Javascript "TableTools" library (2.1.5)
  - Javascript "Chosen" library (1.0.0)
  - Javascript "hotkeys" library (no version, dated May 25, 2013; <https://github.com/jeresig/jquery.hotkeys>)
  - Javascript "pep" library (no version, dated Oct 4, 2013; <https://github.com/briangonzalez/jquery.pep.js>)
  - Javascript "LESS" library (1.3.3)

Clear Ballot will use one of two options to fix any open source coding issues: we may code around the problem so that the problem is avoided, or we may fix the problem in the open source code itself. If the latter, we will work with the third party software supplier to make sure that they integrate those solutions at a later date. In no case will a third party vendor inhibit Clear Ballot's ability to provide a solution to the problem.

Similarly Clear Ballot will code around any problems encountered in COTS binaries, as well as any web browser deficiencies. With respect to Microsoft Windows, the Clear Ballot development group will work with Microsoft technical support, as do other developers.

Clear Ballot has a strong partnership with our recommended hardware vendor, Fujitsu. Over the years, there have been many instances where we have reported problems with the Fujitsu software, and Fujitsu has responded with bug fixes in a prompt manner. Fujitsu is supporting Clear Ballot on this RFP proposal.

### *EMS-Independent Election Definition*

The ClearCount system uses a Ballot Definition File (BDF) that is independent of the EMS that is used to create the blank ballot PDFs. Clear Ballot software analyzes each Blank Ballot PDF for an election and extracts a set of information that is used to create the BDF. Each election that is created is loaded with a BDF that contains data on every style of ballot that will be used



for every precinct. ClearCount uses the information taken from the BDF to recognize and then tabulate the images of the ballots that are scanned into the system. Because the BDF is drawn directly from the PDFs that are sent to the printer, potential errors in election programming are significantly reduced. Any differences in the ballots are carried through to the BDF and thus easily to identify when the election is being validated at the various testing phases. Clear Ballot has successfully analyzed ballots from each of the EMS's that are currently used in Colorado.

### *Technical Description of Clear Ballot Scanning Options*

Since the solution is scalable, the voting system may be deployed on a single scan server, multiple scan stations, or one or more electoral voting stations as described below:

1. *A single Scan Server.* This server hosts a database used to record the election tabulation results; a file system used to store the voted ballot images and an HTTP server and Web applications used to setup the election and generate reports. The current version of the ClearVote Scan Server runs Ubuntu Linux. The database engine is MySQL. The HTTP server is Apache that dispatches to code written by Clear Ballot.

The currently supported versions of this third party software are:

- Ubuntu Linux: 13.04-server-amd64
- MySQL 5.5.32
- Apache: 2.2

2. *One or more Scan Stations.* These stations consist of a commercial-off-the-shelf hardware scanner connected to a scan station computer. The scanners scan the ballots. The computers analyze the ballots, send the tabulation results to the database server via MySQL transactions written by Clear Ballot, and send the .jpg ballot images using HTTP transactions written by Clear Ballot in order to store images on the scan server's file system.

The product design is flexible regarding which scanners, which choice of computer, and which operating system those computers use. The current version of ClearVote requires Fujitsu scanners connected to computers running Microsoft Windows.

The currently supported third party components are:

- Microsoft Windows: Windows 7 or Windows 8
- Fujitsu software: ScandAll Pro 2.0.7
- Fujitsu scanners models: 6800, 6670, 6140

The choice of scanning station computer is currently a decision made by the county.

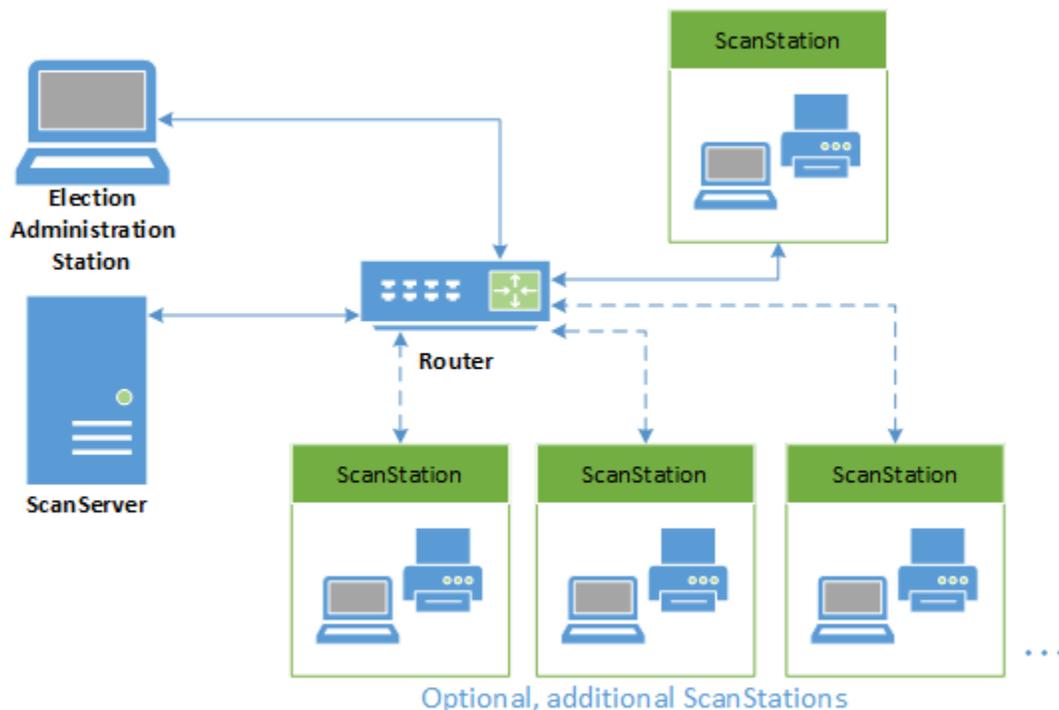
3. *One or more Election Administration Stations (e.g., laptops).* These stations run a browser, which access web pages written by Clear Ballot and which reside on the scan server. The web pages allow the administrator to:
- Design ballots (part of ClearVote)
  - Create user accounts on the scan server for election officials so that they scan ballots and administer the election.
  - Setup, start, and shutdown the election.
  - Analyze the tabulation results in order to:
    - Delete a box of ballots so that the Scan Stations may rescan them.
    - Re-vote ballots that couldn't be processed by the Clear Ballot tabulation software.
    - Generate reports, such as the Statement of Votes Cast.

The currently supported browsers are:

- Internet Explorer
- Chrome
- Firefox
- Safari

No browser plugins are required.

### Scanning Stations Configuration





### *Source Code and Escrow*

Clear Ballot provides its solution in the form of object code to its customers. Source code is not provided, but Clear Ballot is willing to answer any technical and proprietary questions about its software under a non-disclosure agreement.

Clear Ballot is willing to escrow the software with a third-party escrow agent approved by Clear Ballot and CDOS in accordance with standard industry practice. The version number of the relevant software will be displayed for both the software deployed and the software escrow, and therefore may be easily compared to assure that any escrowed software is the same version as that deployed.

## **6.3 UVS hardware - specs and preventative maintenance schedules**

### **6.3.1 Hardware configurations that scale with size of county**

As described in the Technical Description of Scanning Operations, ClearCount utilizes solely Commercial-Off-The-Shelf (COTS) hardware to control cost while providing reliability and ease of replacement for each component. ClearCount allows each county to determine the proper type and amount of equipment necessary to meet its requirements. The majority of the customization comes in the decision of which scanners to use and whether to purchase or rent that capacity. Counties may choose to purchase a baseline number of scanners for most elections and then scale up by renting additional scanners of various models to meet the needs of specific elections (i.e. a Presidential Election).

We have set out typical configurations that are based on size of counties, from the largest with greater than 75,000 registered voters to the smallest with less than 10,000 registered voters.

The wide range of options in Fujitsu scanners, allows Clear Ballot to employ a custom solution for every county. Clear Ballot knows that one size does NOT fit all, and works with counties to provide a custom implementation depending on the size and needs of the county. This not only applies to the hardware solutions, but also the ClearVote software. ClearVote software architecture allows pricing to be variable, and Clear Ballot recognizes the variance of county budgets.

The analysis on the following pages highlights the scanner models for counties large, medium and small, while also looking at the all-in cost with scanners and ClearVote software. Clear Ballot's wide range of COTS scanners and modern software architecture allow not only for lower all-in upfront costs, but also a lower eight year all-in total cost. This is important to meet the budgets of all counties.

**One Size Does NOT Fit All**

Clear Ballot and Fujitsu have a solution tailored for counties large to small

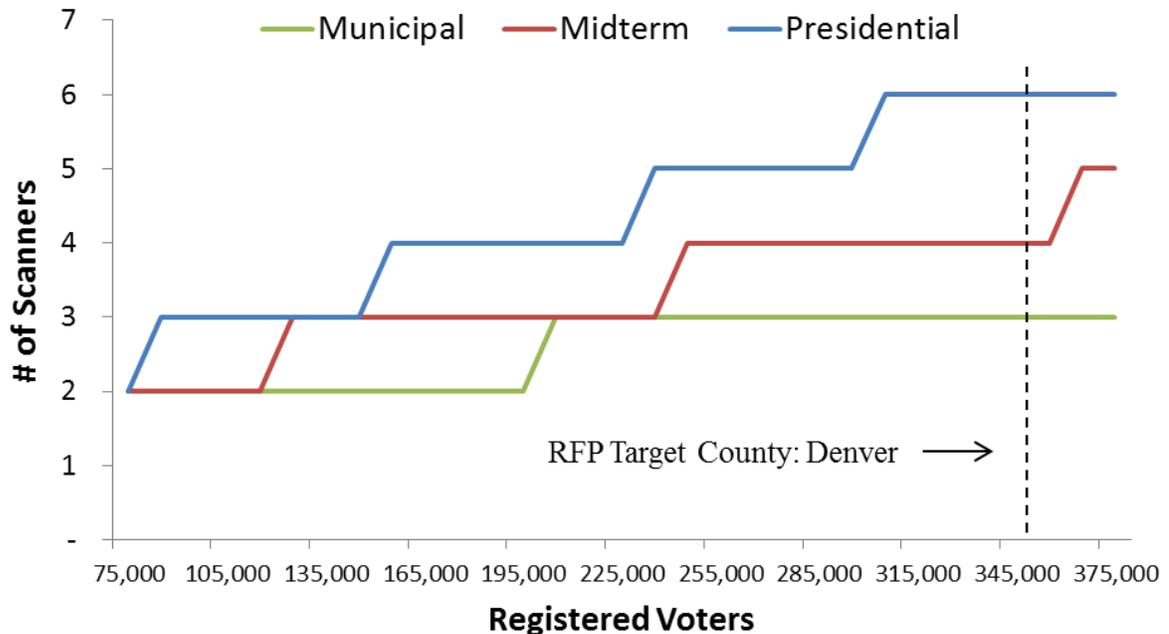
## Large Counties

Greater than 75,000 registered voters

Each county in this group would use fi-6800 scanners. The exact number for each county would vary depending on registered voters and county preferences. The chart below details scanner needs for peak election demand and also includes one additional scanner to add greater capacity or as a spare.

### fi-6800 Scanners Needed per County Size

\*includes one spare scanner



**Scanner Price: \$15,223 / each**  
Speed: 3,500-4,500 ballots / hour

## Medium Counties

10,000 - 50,000 registered voters

Each county in this group would use one fi-6670 for their peak election demand and one additional to add greater capacity or as a spare.

Average ClearVote Software and Hardware Cost for Medium Size * (Includes Maintenance)	
Year One	\$141,108
Year Two	\$22,148
<b>Total Eight Year Cost:</b>	<b>\$342,104</b>



**Scanner Price: \$3,793 / each**  
Speed: 3,000 ballots / hour

## Small Counties

Less than 10,000 registered voters

Each county in this group would use one fi-6140 for their peak election demand and one additional to add greater capacity or as a spare.

Average ClearVote Software and Hardware Cost for Small County * (Includes Maintenance)	
Year One	\$85,459
Year Two	\$14,631
<b>Total Eight Year Cost:</b>	<b>\$212,691</b>



**Scanner Price: \$1,400 / each**  
Speed: 1,400 ballots / hour

\* Software prices vary by size of county. Counties can choose which scanners best fit their needs. Year One costs include: ClearVote software license and one year of software warranty, scanners (assumptions shown above for county size), and four years of scanner maintenance. Annual costs include software maintenance and additional four years of hardware maintenance in year five.

### 6.3.2 Hardware component requirements

Below are the requirements for individual hardware components as well as Clear Ballot recommended and tested models for each piece. With CDOS approval, counties may substitute COTS hardware of alternative make and manufacture that meets the general requirements should a county need to deviate from the recommended models. Clear Ballot intends to continually test and certify new equipment that will allow counties to continue to progress along the technological curve and to take advantages of changes in price and quality of various component options.

#### *ScanStation Computer Requirements*

- Windows 7 or Windows 8 operating system
- 4 core / 8 thread processor
- 4+ Gb of RAM (8+ is recommended)
- 500+ Gb of disk space
- Giga-bit LAN connection
- Enabled with USB 2.0 or higher

#### *ScanServer Requirements*

- Laptop or desktop
- 4 core / 8 thread processor
- 8+ Gb of RAM
- 500-750+ Gb of disk space
- Giga-bit LAN connection
- The original operating system of the ScanServer computer does not matter. As part of the ClearAudit installation, the ScanServer computer's operating system will be overwritten with Ubuntu Linux.

#### *Election Administration Station Requirements*

- Windows 7 or Windows 8 operating system
- 4 core / 8 thread processor
- 4+ Gb of RAM
- 500+ Gb of disk space
- Giga-bit LAN connection
- Enabled with USB 2.0 or higher

*Clear Ballot Tested Models for ScanStations, ScanServers, and Election Administration Stations*

HP ProBook 4540s



Specifications:

- x64-based PC
- Intel Core i7-3612QM CPU @2.10 GHz, 4 Cores, 8 Logical Processors
- 8.00 GB RAM
- 650+ GB Hard Disk
- Windows 7 or 8

Toshiba Satellite L855



Specifications:

- x64-based PC
- Intel Core i7-3630QM CPU @ 2.40 GHz, 4 Cores, 8 Logical Processors
- 6.00 GB RAM
- 650+ GB Hard Disk
- Windows 7 or 8

### Scanner Requirements

Clear Ballot requires the use of the fi-6800, the fi-6670, or the fi-6140 for scanning purposes.

		Scanning Speed: 8.5" x			County Size	Price*
Model		11"	14"	18"		
	<b>fi-6800</b>	6,000	4,500	3,100	Large County More than 75k voters	\$15,223
	<b>fi-6670</b>	5,000	3,500	2,800	Medium County Between than 10-75k voters	\$3,793
	<b>fi-6140</b>	3,600	1,500	1,400	Small County Less than 10k voters	\$1,400

☒

\* Clear Ballot and Fujitsu have developed special pricing for Colorado counties, assuming the purchase of four years of maintenance support, which is highlighted in the Post-Implementation Support Cost Table.

The model of scanner selected should depend on the average number of ballots received by the county in each election. Each county should buy at least two scanners (so that there is always at least one scanner in case of failure). Clear Ballot has observed that some customers in other states have shown a tendency towards purchasing more scanners than they would expect to require to ensure redundancy and to increase whole system throughput.

For counties that may be faced with a single countywide election that has an expected turnout that is larger than normal, or which have a significantly larger election once every four years, Fujitsu does have a scanner rental program for existing customers that will allow counties to scale up the number of ScanStations being used to meet demand. For many counties, it likely makes sense to purchase and maintain a baseline number of scanners and then arrange to rent additional scanners for those times when a high voter turnout is expected or when multi-card ballots are being used. Clear Ballot solutions are designed so that no election information (ballot images or audit) is stored in the Fujitsu scanner. The leasing of additional machines to augment the scanning capacity of counties is therefore simplified: the scanner may be transported as

needed, and easily returned, without additional costs or duties related to the deletion of election information and without risk of compromising any sensitive election data.

For additional information please see the *Fujitsu Scanners* section in the Company Product Overview.

#### *Router Requirements*

- Gigabit Router
- 4+ ports (8 suggested for larger counties)

Clear Ballot Tested Model: Linksys EA2700 Router



#### *Ethernet Cables*

Gigabit Ethernet cables are required for the system to function properly.



#### *Switch (Optional)*

Switches allow counties to increase the number of ScanStations that they use beyond the number of ports that are available in the router. Switches are also an effective way to enable better utilization of available space (e.g. two groups of ScanStations on either side of a room, each connected to a central router via switches).

Clear Ballot Tested Model: TRENDnet 8-port Gigabit Switch





### *Preventative Maintenance Schedule*

With the exception of the scanners, there only preventative maintenance require for the hardware components is to ensure that they are stored in a controlled indoor environment, do not come into contact with liquids, and do not get prohibitively dusty.

For preventative maintenance schedule for Fujitsu scanners, see *Fujitsu Scanner Maintenance* in section 6.9 Support.

## **6.4 Database**

### *1) Database system being proposed*

Clear Ballot is using MySQL version 5.4.32. There are no special utilities or backup considerations.

### *2) Describe any techniques used to secure the data*

The architecture of our product provides strong security because of the way data is handled, i.e. there is no data resident on a scanner or voting machine. We secure the data and data files through a combination by physical security of the server, not storing any data on the scan stations or administrative stations, and use of a client/server interface for all database operations. The client/server interface is protected by role-based access control lists (ACLs) stored on the server. These ACLs protect both the web and MySQL database transactions. Network communication is restricted to connections over a closed Ethernet. There are no wireless or Internet connections. There is nothing in the product that requires that the system be connected to the Internet for the maintenance, operation, or administration of the product.

### *3) Database backup and disaster recovery*

Backup and disaster recovery is handled by the system's ability to backup the database and related ballot images to an external hard drive that may then be physically secured by the customer.

### *4) Describe the technical requirements of county computers used to store the database.*

For detailed information on the specifications that are used to store the elections, please see section 6.3 Hardware above.

### *5) Affirmation*



CDOS or the County will be sole owner and custodian of all election related data in the system provided by Clear Ballot and shall have the unrestricted right to access and use that data. It is not possible for Clear Ballot to interfere with access to that data. The software provided with the Clear Ballot voting system (ClearVote and ClearCount) is sufficient to provide access to that data, and no further assistance from Clear Ballot is needed.

## 6.5 Data migration

### 1) Describe your approach to data migration.

A clear advantage of the Clear Ballot solution is our ability to work with any other EMS. Clear Ballot has produced tools to parse and import PDF files produced by the election department (by their EMS ballot creation software) that are exact copies of the PDFs sent to the printing company. We can parse and import PDFs for ballots of every format used in the United States (including, without limitation, Premier, ES&S Unity, ES&S ElectionWare, Dominion, Hart, and Sequoia).

In addition, ClearCount will have a data import module that will be used to import and validate data from external systems such as other EMS systems or voter registration systems. When importing data from other EMS systems an import parser can be created for parsing the data from exports of the EMS. The current import module will import the data into ClearCount by using this data parser. The Election Model used by most EMS systems is almost the same and so the data import is a simple process for Clear Ballot.

The import tools have been tested in the field as a part of the ClearAudit product. These tools import election results so that audit results can be easily compared to the voting system being audited. These election result files are in a variety of formats from Premier (GEMS CSV), ES&S (EL30A text file), and Dominion ("Contests Overview" and "Results per Election District", both XLS), and will soon be available for the remaining systems (Sequoia, Hart). Clear Ballot is quite flexible about handling a wide variety of formats from vendors (the above formats illustrate the ability to handle XLS, text and CSV to name three), so long as the vendor results file contains ballot and vote totals for the desired level of detail (by Choice, by Precinct, by Counter Group).

### 2) Describe the type and level of Colorado support desired during data migration efforts.

We will need the Colorado jurisdiction to supply all PDFs used to print the ballots (one per distinct ballot style and precinct). In order to compare the results of the audit against another certified voting system, we need the Colorado county Election Department to perform the export of the election results into a file (or files), as described by our documentation.

During data migration efforts we need Colorado to provide any documentation available on the exports from the other EMS systems and the sample data to be converted.



3) *Identify any EMS of a competitor from which you have successfully converted data into your EMS.*

As described above in response to the first question in this section, we can parse and import PDF files for every type of ballot system used in the United States, and we can parse and import election results files in a variety of formats (see above). We have successfully imported results data from all of the certified voting systems used in Colorado.

## 6.6 Test Strategy

Clear Ballot has developed a rigorous test plan that can be customized to the CDOS project. The Clear Ballot test plan addresses equipment acceptance, logic and accuracy, disaster recovery, security, public audit and verification and validation.

### *Equipment*

The Equipment acceptance test first insures that the equipment is connected and operating correctly. The software is tested to insure accuracy of the system by comparing the results of previous logic and accuracy (L&A) test decks to the results of running those decks through the system running current Clear Ballot software. Version numbers are checked against the expected version number of the Ubuntu Linux software on the scan servers, and Windows on the scan stations and the administrative stations running web applications. In addition all typical web browsers, scanning equipment software, database software and the Clear Ballot software is tested. For each of the elections we perform tests on transmitting blank ballot PDFs, receiving Clear Ballot zip files containing the BDF for the election, loading test decks and running them through

### *Logic and Accuracy*

Logic and accuracy testing ensures that each scanner's cameras are producing true images and that the system's tabulation is accurate. We compare the results of scanning and tabulation on an L&A test deck against expected results.

### *Disaster recovery*

ClearCount provides a set of tools that allows the system to recover from disasters such as power failures or system crashes. By following standard Clear Ballot procedures, regular back-ups are taken of each election to allow it to be restored in the event of a catastrophic event. During the initial testing of the system at the beginning of each election cycle, the back-up and restore tools are tested to ensure their continued functionality and to provide the initial restore point of each election



### *Security test*

Security testing ensures that access procedures are secure, that the system is properly configured to store data on the proper servers, and that data access is not bypassed through any non-approved method. Since the system is not linked to the Internet, and since the design of the system avoids data and image storage on scan servers and administrative servers, there is security inherently built into all Clear Ballot software that limits the security testing needed.

Role-based access is tested in three classes of the database including MySQL, Clear Ballot web-based applications, and an Election (one database per election). Access to the database is dependent on levels setup by the Clear Ballot web tools and tested for various roles and access issues (e.g. Voting System Administrator, Election Database Administrator, Ballot Remaker, Delete Box, Scan Station Operator, Report Producer).

### *Public Testing and Audits*

Public tests and audits are performed to create public confidence in the integrity of the election. ClearCount operates in accordance with all current Colorado laws and regulations regarding the public testing and audits. Additionally, ClearCount provides a unique set of tools to identify and resolve discrepancies between the initial tabulated result and the public audit results using its single ballot cast vote record and the vote visualization tool. These tools improve the value of the public audits and testing because observers can easily see and comprehend the circumstances that cause the discrepancies to arise.

### *Verification and Validation procedures*

During the creation of the election definition, verification and validation testing ensures that the BDF files are constructed correctly and that each ballot style can be processed correctly. For the remainder of the election, the vote visualization report and the option to view a ballot's adjudication visually overlaid onto the ballot image provide election officials with a powerful suite of tools to verify and validate the system and its results at each step in the election process. Clear Ballot training provides the basic procedures as well as best practices to use the tools to diagnose potential issues

## **6.7 Training - include any self-paced training products**

The Clear Ballot training program consists of in-person training with Clear Ballot instructors, self-paced training videos, and extensive product documentation. Together they provide complete training for all roles in an election. Clear Ballot's training is comprehensive, effective, and timely, while at the same time seeking to minimize county costs.

Clear Ballot recommends that two individuals from each county, at a minimum, attend each in-person training course. The optimal class consists of two people each from eight counties plus



two state officials, for a class size of 18 people. Clear Ballot provides one trainer assistant per every five students, to ensure adequate support for all participants. However, based on the RFP as amended October 23, 2013, we are designing training for five target county representatives plus two state officials.

Some in-person Clear Ballot training courses include a “Train the Trainer” component designed to facilitate cost-effective team training.

**Note:** During the first phase of the ClearCount rollout, which does not include a full EMS, EMS training is not included in the courses listed below.

### 6.7.1 Clear Ballot led training

Clear Ballot provides the following in-person training taught by Clear Ballot instructors in Target County:

Course Sequence	Course Name	Audience	Class Size	Length in Hours
1	ClearCount Overview	All	Up to 7	4
2	ClearCount Installation and Setup (includes hands-on lab)	Supervisors, System Administrators, Staff*	Up to 7	8
3	ClearCount Operations and General Maintenance (includes L&A Testing) Printed ballots (test deck) required for L&A hands-on lab)	Supervisors, Staff*	Up to 7	16- 18
4	Using the ClearCount Election Reports (including remaking and adjudication). Includes hands-on lab	Supervisors, Clerks	Up to 7	4 – 6
5	ClearCount System Administration. Includes hands-on lab	System Administrators, Supervisors	Up to 7	4- 6

**\*Note:** This course is intended as a “Train the Trainer” program, with supervisors being prepared to train their own staff. However, additional staff may attend (pending seat availability). If enough counties want to send additional trainees, Clear Ballot will offer additional courses at a cost set forth in Appendix C.

### 6.7.2 County-led training

This will allow those who took the “Train the Trainer” course to instruct other staffers as needed.



Course Sequence	Course Name	Audience	Class Size	Length in Hours
1	ClearCount Overview	All	To be determined by county	4
2	ClearCount Operations and General Maintenance (includes L&A Testing)	Scanner Operators, Prep Staff	To be determined by county	16 - 18

### 6.7.3 Course descriptions

- **ClearCount Overview.** This class provides a high-level introduction to the end-to-end ClearCount system. It consists of lecture and demonstration.
- **ClearCount Installation and Setup.** This class provides a hands-on walkthrough of setting up the COTS hardware and ClearCount software, as well as testing the installation and system hardening. It also covers breaking down the system and packing it for storage. Initial acceptance testing of hardware is covered by the vendors from which the hardware is procured. Clear Ballot will provide training on how to ensure that initial configuration is performed properly and provide testing materials that can be used to verify system settings.
- **ClearCount System Administration.** This class covers system, database, and user administration.
- **ClearCount L&A Testing.** This class covers the ClearCount L&A testing procedure.
- **ClearCount Operations and General Maintenance.** This class, a combination of lecture, demonstration, and hands-on practice, covers the full range of activities that take place on Election Day, including the scanning process and associated activities. It also covers routine and general maintenance tasks.
- **Using the ClearCount Election Reports.** This class, consisting of lecture and hands on practice, teaches election officials and supervisors how to use the ClearCount Election Reports and how to do digital adjudication.

### 6.7.4 EMS Training

When the Clear Ballot EMS is introduced at the beginning of the data migration period, an additional class will be added to the course schedule, which will train election supervisors and system administrators on basic and intermediate use of ClearEMS. This class will be provided for all counties adopting ClearEMS. For those counties that choose to adopt the entire Clear Ballot system following the initial data migration period, they will receive the ClearEMS training during an extended set of Clear Ballot-led training sessions that includes the training for the remainder of the system.



Course Sequence	Course Name	Audience	Class Size	Length in Days	Location
6	ClearEMS Overview and Use	Supervisors, System Administrators	Up to 8	5	Target County

### 6.7.5 Training location

Class locations as well as times are scheduled in consultation with the counties. In the case of the target county, trainings will be held in a county’s warehouse or tabulation room, to reduce costs. In other cases, trainings might be held in a regional training center (ideally, but not necessarily, a larger county’s warehouse or tabulation room).

### 6.7.6 Training equipment

Target county training will take place on the target county’s equipment (scanners, computers, and router). In general, counties will be trained using their own equipment, to ensure a smooth transition from training to election. In addition, the host county should provide a projector, a DVD player, and ten 6’ x 3’ tables for the duration of the training. Finally, each county should bring some of its own test ballots.

Clear Ballot will provide the trainers, manuals, videos, target cards, box labels, and any signs necessary for classes.



### 6.7.7 Self-paced training and documentation

The jurisdiction’s election staff has access to the following ClearCount documentation and training resources.

Role	Documentation							Videos								
	Election Preparation and Installation Guide	System Operations Procedures	ClearCount Checklists	Scanner Operator's Guide	Maintenance Manual	Fujitsu ScandAll PRO V2.0 User's Guide	Fujitsu Operator's Manual	Overview	Creating an Election	Set up scanning location & HW	Ballot Prep & Scanning	Troubleshooting Scanners	Scanner Cleaning & Maintenance	Corrective Maintenance	Ballot Registration Error Handling	Using ClearResults Election Reports
Supervisor	X	X	X	X				X	X	X	X	X	X	X	X	X
IT Admin/Sys Admin	X	X			X	X	X	X		X		X	X	X		
Record-keeper			X	X				X			X					
Scanner Operator			X	X				X			X					
Prep Staff			X	X				X			X					
Scanner Maintenance and Troubleshooting			X		X	X	X	X		X	X	X	X	X		

### 6.7.8 State support required

Following the target period, Clear Ballot will coordinate with the State and Counties on establishing eight regional training sites where election staff can gather for in-person training. These sites may be required to accommodate training up to eight counties. Clear Ballot can also scale this plan based on the number of counties adopting the system during a given election cycle. New hires for counties already participating, representatives from counties newly adopting the system, and those needing to be re-trained can participate in regional training programs in subsequent election cycles.

Clear Ballot will also provide in-person training for the staff of a county that requests a dedicated in-person training program (or portion of a training program) at a cost set forth in Appendix C.

### 6.7.9 Scanner operator and prep staff training

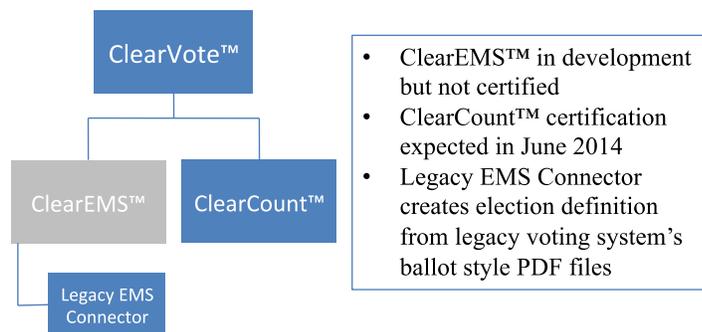
Training provided to supervisors will prepare them to train scanner operators and prep staff in their county. Scanner operator training manuals will be made available to counties in digital format. In addition, several of the ClearCount training videos are targeted to scanner operators and prep staff and may be viewed on demand. Clear Ballot can provide a scope of work and pricing if counties need assistance with scanner operator training sessions.

## 6.8 Implementation

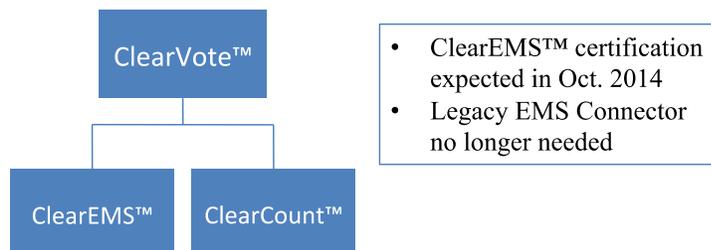
### 6.8.1 Planning

The Clear Ballot implementation plan covers the entire scope of the project and work from contract award to certification of election results. A core part of this plan is to prepare users of the system in advance of the rollout, coupled with expected acceptance testing, training and deployment. We are proposing a phased approach that will allow counties to use Clear Count's LegacyEMS Connector to existing EMS systems in 2014 as a transition to the full ClearVote system in subsequent elections.

#### *Phase One*



#### *Phase Two*



## 6.8.2 Implementation schedule

### *Experience*

The management team of Clear Ballot has extensive experience in managing large software projects that involve: certification, source code control, change management, quality engineering, issue tracking (including customer feedback), training the field sales and sales engineers, coordination with the help desk quality assurance team. Two examples:

Under Tim Halvorsen, Clear Ballot's CTO, the Lotus Notes code base grew to 30 million lines of code, was ported to four operating systems and was localized in 21 countries. The engineering team was located in more than a dozen sites around the world. The software was extensively and continuously tested. Formal usability testing was done on each major release. Input and suggestions from customers were tracked, analyzed and, if scheduled for development, communicated to the field organization and to the customer(s) who suggested the change.

Under Tab Iredale, Clear Ballot's Chief Architect, GEMS, the election industry's first comprehensive Election Management System, was developed and deployed. To this day, GEMS still has one of the largest installed bases of any EMS in the industry. In addition to being the architect and lead software engineer, Tab was instrumental in bringing GEMS through several federal EAC certifications as well as a number of State certifications.

### *Overall Approach:*

The Clear Ballot founders have experienced the development, launch and growth of extraordinarily successful products in their respective industries - Lotus Notes in the private sector domestically and internationally and GEMS in the regulated election industry. The lessons learned and mistakes made from our collective experience carry over and inform this project. These include:

#### ***Eliminate impediments to a quick start***

Clear Ballot's approach to the UVS will eliminate two major impediments: 1) the early requirement for county staff to learn a new ballot layout and production system (EMS) and 2) the need to invest in single-use, proprietary hardware.

As noted in the Executive Summary, Clear Ballot is able to draw on the development of its ClearAudit product – specifically, its Legacy EMS Connector software – that can independently develop the election definition from the PDF files used to print ballots for each of Colorado's four certified voting systems. This tool will allow the early participants to begin using the ClearVote scanning, tabulation and reporting subsystem (ClearCount) and still generate ballots, L&A test decks, and also allow them to program their assistive voting hardware in the same way as before.



With capital costs under scrutiny by every County Board of Supervisors, any proposal to invest in single-use, proprietary hardware will likely be delayed – especially if the new vendor wants to substitute one legacy system for another and require that perfectly good equipment be discarded. With an all-COTS hardware plan, where equipment can be mixed and matched, the capital outlay in 2014 will be minimal.

***Build trust, create and communicate early successes***

It is difficult to overstate the importance of this approach to the project. We see no reason why counties who need to move quickly cannot do so by the June 2014 primary. Based on the work Clear Ballot just finished in El Paso County and Arapahoe County, there is ample evidence that staff training is minimal and that once the basic procedures are ironed out with CDOS, it will be possible to bring a new county on from scratch in a week to ten days.

For counties looking to start with the June 2014 Primary, Clear Ballot recommends that its system be used in parallel with the county's primary voting system as the best way to build trust – just as was done successfully in Arapahoe County's Risk Limiting Audit Pilot. We will bring the tools to bear from our ClearAudit product to show visually that ClearCount's scanning and tabulation software is as accurate as the software of the certified voting system – just much faster and easier to use.

We anticipate that CDOS will want to lead a stakeholder outreach program during the UVS implementation. In addition to the counties that are not yet participating, we expect that members of the State Legislature, candidates for office, political parties, the media, interest groups and citizens will want to and will expect to hear progress reports on the UVS. Clear Ballot's unique visualization tools will be instrumental in building excitement and maintaining support for this project. Our experience in building and implementing successful marketing programs will ensure timely and effective communications with all of the stakeholders of a new election system.

***Lay the groundwork for a fast but late certification***

Clear Ballot has already engaged with SLI Labs in Denver to begin testing the accuracy and functionality of the ClearVote scanning, tabulation and reporting subsystem – called ClearCount. This is the software that has been submitted for certification to the New York State Board of Elections as a central count voting system. SLI's testing will be able to draw on the extensive library of ballot images and the detailed results from the legacy system's EMS from more than 40 past elections.

The nation's major voting system manufacturers have been tested already; depending on its size, as many as 45,000 points of comparison have been independently computed and compared in a single election. An enormous amount of data is available for functional testing for each of the certified voting system manufacturers including ballot rotation, multi-card ballots, split precincts, cross-endorsed candidates, multiple language support, landscape or portrait orientation, different ballot sizes, etc.



Our goal is to get SLI up to speed in building the test harnesses so that when ClearVote (ClearCount + ClearEMS) is ready to enter certification – i.e. once Colorado’s requirements have been incorporated – the groundwork will have been laid to certify it quickly.

***Be upfront about risk***

It is our experience that successful projects are done in a collaborative environment where there is trust between the parties.

Clear Ballot is fully cognizant that this proposal will look risky to CDOS. The company’s size and depth of election experience do not and cannot match that of its legacy competitors. Yet, we submit this proposal with every confidence that a sea change in the election industry is already underway. Decades old product architectures, reliance on single-use, proprietary hardware designs, or proprietary software modifications to COTS hardware all work to lock a county into another decade of low innovation and high costs.

This proposal represents a clear alternative – one that we believe in less than two years will look like the safe bet. Simply stated, Clear Ballot’s technology will put counties on a lower cost curve:

- Increments to scanning capacity can be purchased inexpensively, rented or even borrowed from nearby counties,
- Training costs and support costs will drop as familiar, easy-to-use interfaces replace legacy EMS software,
- Assistive voting systems – now consuming as much as 40% of a county’s capital budget for elections - will become significantly less costly as the industry’s vendors find that they can provide products with substantially less investment in software.

***The Management of Change***

Change is inevitable. The challenge and our goal will be to identify the software and procedural changes quickly enough so that there is time to modify the software, test it, document the changes and run the updated code through certification. That is why getting a jump on certification with SLI Labs and an early start with the 2014 primary election is so critical. It gives SLI time to build the systems needed for a fast turnaround in certification and for Clear Ballot, CDOS and the early adopters the time to identify, make and document the changes and certify them in time for the November 2014 General Election.

Here are some of the changes CDOS and Colorado’s Counties can expect to see with ClearVote early on and over time:



1. No more hand feeding ballots. Ballot scanning will be done on modern COTS scanners that automatically feed ballots. Ultrasonic sensors will automatically stop the scanner when two or more ballots are pulled through.
2. Digital out stacking will replace physical ballot out stacking. All ballots can be treated the same way including those with write-ins, overvotes and error ballots. Once they are scanned they can be immediately placed in sealed retention boxes.
3. Physical ballot duplication can be replaced with digital duplication in a fraction of the time. Ballots that cannot be automatically processed (e.g. damaged ballots) can be digitally voted, visually checked and a record of the human adjudication will be automatically logged. The voter's original intent remains unaltered.
4. Logic and Accuracy checks will be familiar but get a lot quicker. Clear Ballot's L&A procedures separate the test of the scanners' cameras (the "accuracy" part) from the tabulator's ability to recognize each ballot style and produce the correct results (the "logic" part). During the first few elections, test decks with a known Statement of Votes Cast can be generated by hand or automatically generated and printed on a ballot-on-demand printer. Later, as CDOS becomes comfortable with the automated approach, the rules can be changed so that ballot images are used to test logic instead of physically scanning test decks. In this way, significantly more rigorous logic testing can be done without impacting staff time.
5. With a Central Count architecture, programming, managing and worrying about memory card failure will become a thing of the past. The election definition will be kept in a central ScanServer and distributed to one or more ScanStations without any physical intervention.
6. Ballot Chain-of-Custody, over time, will become fully and uniformly automated. For example, mail-in ballots will be processed in the normal way – (i.e. envelope opening, signature verification and voter credit established). Ballot bins with ballot counts will be delivered from the Mail Ballot Team to the Ballot Scanning Team. The Ballot Scanning Team will compare its count against the Mail Ballot Team's count and resolve any discrepancies on the spot. Early and Election Day ballots that are cast at Voting Centers will be dropped into a sealed ballot box and brought back to the Election Operations Center for tabulation. A fully automated report will show the physical location (i.e. the Box ID) of every ballot. Should any ballot need to be physically retrieved, ClearVote's Ballot Locator Report will provide the exact location of the physical ballot within its retention box.



7. The workload of the Canvassing Board will become faster and easier. Compared to current methods, the duplication of unreadable ballots can be completed and checked in a fraction of the time. When elections are close, the Canvassing Board can easily review and, if necessary, override decisions made by the ClearVote tabulation software. All Board decisions are automatically logged and become part of the ballot's provenance.
8. The public audit will become faster, more meaningful and with less staff impact. ClearVote was designed to be independently audited – especially Risk Limiting Audits techniques. Ballot manifests showing the chain of custody (see #6 above) and the physical location of every ballot can be automatically generated. Tools exist for Canvassing Boards to easily identify, correct and record potentially misclassified votes. Single ballot cast vote record reports can be produced prior to the audit. Random selection of ballots that need to be physically retrieved can be done efficiently for statewide contests as well as local, precinct-level elections. Finally the election log can be exported in machine-readable format and made a part of the artifacts of the audit.
9. Reporting to CDOS will become almost completely automated. As counties and CDOS begin to fully grasp the power of ClearVote, Clear Ballot's engineering staff will respond to change requests to further automate and streamline results reporting to CDOS.
10. Recounts will become faster, less costly and more transparent. Clear Ballot's powerful visualization capabilities will allow the challenger, winner and their supporters to see the likely result of a careful and protracted hand count and one of them can decide for themselves whether or not to gracefully withdraw.
11. Public records requests, over time, will be easier to fill. Reports can be mailed as attachments in PDF or machine-readable formats (i.e. directly usable by Excel).
12. CDOS, with uniform and consolidated reporting by counties in machine-readable formats, will have the unique ability to increase election transparency by providing public access to election data.

## 6.9 Support

The objective of Clear Ballot Customer Support is to earn and maintain customer trust and satisfaction. The Clear Ballot Customer Support organization provides in-person as well as remote support during all phases of the election.

The Clear Ballot Help Desk is available by telephone or email. Alternatively, customers may enter their issues into Clear Ballot's secure defect-tracking system. Customers can also access the Clear Ballot online FAQ (knowledge base), which is updated regularly, and the online user



forums. For mission-critical matters during the election period, Clear Ballot technical staff are on the ground in the state and ready to assist counties.

Clear Ballot Customer Support works closely with our training and documentation staff to ensure that all materials are accurate, comprehensive, and up to date. If support on a procedural or non-proprietary matter is required, Clear Ballot Customer Support may arrange a web conference or demonstration.

On an ongoing basis, Clear Ballot hosts User Group meetings. Statewide user group meetings may be held, as well as national group meetings with key accounts. Key accounts can provide useful product feedback and system enhancement recommendations.

**Note:** The details provided below are based on serving the Colorado Target County of 350,000 voters, as defined in Colorado RFP Amendment 2.

### **6.9.1 Clear Ballot issue and support levels**

In discussing technical support, Clear Ballot uses the following issue and support level definitions.

Issue levels:

- Level 1: Standard – Maintenance issues, questions on operations, requests for customization or changes, and so on.
- Level 2: Priority – Problems that may impair but not disable the system.
- Level 3: Critical – Issues that will prevent the system from functioning in the near term.
- Support levels:
  - Tier 1 support is addressed by the Help Desk.
  - Tier 2 support may involve the deployment of local Clear Ballot staff.
  - Tier 3 support involves expert Clear Count development staff.

### **6.9.2 Clear Ballot support staff**

The Clear Ballot Customer Support organization includes the following staff members:

- Statewide Project Manager(s): project management personnel on the ground
- Customer Support Representatives available by phone or internet
- Clear Ballot Technicians available on the ground
- Fujitsu support organization. Fujitsu support staff will be available on Election Day and can be reserved for the entire day by a single county or by CDOS to support the elections of a region.

Any contractual agreement with Clear Ballot includes detailed breakdown of included support tasks and rates for additional support. This includes support on the ground as well as at the Help Desk.



### 6.9.3 Clear Ballot support phases

Help Desk staffing level, availability, and expected response time vary between non-peak and peak times.

The information below is based on the target county.

Phase	Staffing Level	Availability	Response Time
Off-cycle, non-peak	Staffing for the Colorado Target County consists of one Help Desk Manager and a number of Help Desk operators based on need. On the ground, staffing consists of one Rover Coordinator and some number of Rovers.	<p>Telephone/Internet: M – F, 7 am – 5 pm Mountain Time, with next business day callback for after hours or weekend requests.</p> <p>In person support: Arranged as needed on a case-by-case basis.</p>	In-person response time will be determined by availability of personnel and proximity to an election
Peak Election Time: 60 days prior to Election Day until 18 days after Election Day (until canvassing is completed)	<p>Staffing for the Colorado Target County consists of one Help Desk Manager plus Help Desk operators based on need. On the ground, there is one Rover Coordinator plus roving support technicians based on the number of counties.</p> <p>Clear Ballot and Fujitsu will work in tandem to ensure that sufficient coverage is present for both scanner support and Clear Ballot system support.</p> <p>For each regional training center, one trainer/support person will be present.</p>	<p>Telephone/Internet: 24 hours a day, 7 days a week.</p> <p>In person support: Arranged as needed on a case-by-case basis. Clear Ballot will maintain a team based around Colorado to enable swift response time during peak election time.</p>	<p>Telephone/Internet: a one-hour response time, with priority given to higher-level issues if necessary.</p> <p>Support levels will be assigned by the Clear Ballot help desk. Response time will be based on resource availability and severity of the system issue reported by the County.</p>



#### **6.9.4 Transitioning support**

The Clear Ballot service model focuses on education as well as support. Through a combination of thorough, hands-on training and inclusive Customer Support, Clear Ballot strives to build county confidence and self-sufficiency. While Clear Ballot Support expects to be closely involved in early elections, over time counties should be able to transition to in-house experts and/or a local third party for many of the more routine support requests. Clear Ballot commits to working with CDOS to ensure that such a transition will occur smoothly and will not result in interrupted service or substandard results for counties. One model is to encourage large counties to assist smaller counties should support issues arise.

#### **6.9.5 Warranty period support**

A warranty period of one year is provided. Clear Ballot warrants that during the Warranty Period, the Licensed Software will operate in substantial conformance with our written specifications. All warranty claims not made in writing during the Warranty Period will be deemed waived. The warranty is contingent on the proper installation and use of the Licensed Software as described in our written documentation. Clear Ballot further warrants it will use commercially reasonable efforts to screen the Licensed Software prior to delivery to Customer for viruses, Trojan horses and other malicious code.

#### **6.9.6 Maintenance support**

Because ClearCount runs on all COTS hardware, Clear Ballot divides its maintenance scheme into three sections:

- Software maintenance
- Fujitsu scanner maintenance
- Other hardware maintenance

##### **Software maintenance**

Clear Ballot will provide counties with updates and changes to the system following certification of those changes by CDOS.

##### **Fujitsu scanner maintenance**

In the ClearCount system, the scanners constitute a key component of the solution. Counties should always have at least one spare scanner available in case a scanner suffers a critical failure during an election. The backup scanner should go through L&A testing along with the rest of the system hardware so that it can be used in the election. Counties using fi-6670s or fi-6800s should purchase the 3-year ScanCare package for the first three years of the use of those scanners. Counties should continue to purchase ScanCare package in one or three year increments for the duration of their usage of those scanner models. If a county should purchase the fi-6140z, they



should order the Advance Unit Replacement (AUR) plan for the first four years using that scanner or for the duration of its use. Counties that have purchased the ScanCare package will receive 2-3 preventative maintenance visits each year (2 for the fi-6670; 3 for the fi-6800). Counties should schedule one of these visits prior to each election to ensure that the scanners remain in good working condition.

Preventative maintenance for the Fujitsu scanners includes both scanner cleaning and consumable replacement. Fujitsu recommends that scanners be cleaned in accordance with published Fujitsu cleaning procedures and materials each time the machine has scanned 10,000 sheets of paper. The consumables inside Fujitsu scanners should be changed once every 360,000 scans or once a year. Should performance degrade, cleaning or consumable replacement may need to occur sooner than the recommended cleaning schedules. Counties must consult the appropriate Fujitsu documentation or Fujitsu Customer Support to confirm the proper course of action to improve performance. Clear Ballot best practice includes ensure that a full set of back-up consumables should be available for each scanner during each election to ensure that proper performance can be easily maintained.

#### **Other hardware maintenance**

ClearCount is built upon commodity COTS hardware, so counties are advised to obtain comprehensive warranty agreements where available. As with scanners, the county should have at least one laptop to serve as a back-up ScanStation, an additional router, and extra Ethernet cables. A full warranty for the laptops will allow a defective laptop to be fixed or replaced between elections. Some counties find that it is simpler and more cost-effective to simply replace a defective laptop computer rather than repair it. For details on the requirements for individual system components, see section 6.3 above.

#### **6.9.7 Election setup support**

**Note:** During the initial implementation period, counties will continue using their current EMS to perform election database set-up and ballot layout. During this phase, Clear Ballot will support election activities starting with BDF creation through Election Night reporting and the canvassing process.

Once the counties have migrated to the Clear Ballot EMS, Clear Ballot election setup support will include troubleshooting assistance with initial election setup tasks, such as precinct definition and ballot creation. See Section 6.8

For election setup, Clear Ballot offers the following support:

- Technical Support personnel can be deployed to counties during the election setup phase for the negotiated rate.
- Clear Ballot telephone and online support are available on extended hours, as described in “Clear Ballot support phases” above.



*\*For specific timelines for Election Setup Support, L&A testing, and Support Windows, please refer to the 2014 Implementation Calendar in Section 6.8.2*

### 6.9.8 On-site support

The following Clear Ballot support staff will be on the ground in Colorado during the election period:

- Project Manager- Number of days to be determined
- On-site support can be provided to counties for assistance during pre-L&A, L&A, Election Day and canvassing process.

The table below lists the areas within election setup that Clear Ballot supports, along with a description of the support available.

Election setup task	Clear Ballot support?	Support description
Election and ballot setup	Remote Support Help Desk Help Desk On-Site @ CDOS Central office	Create BFDs from ballot proofs ClearVote set-up & operation (*) Fujitsu Scanner Set-Up/Config (*) Project Manager
Voting equipment preparation	Help Desk Help Desk Help Desk On-Site @ CDOS Central office	ClearVote system operation (*) Fujitsu Scanner operation (*) Pre-L&A tests support (*) Project Manager
L&A test setup and execution	Help Desk Help Desk Help Desk On-Site @ CDOS Central office	ClearVote software support (*) Fujitsu Scanner HW support(*) Tally/Election reporting issues(*) Project Manager

Notes:

- (\*) Counties may request on-site support assigned during this election task at the on-site support rate.
- Project manager and help desk support resources will escalate system issues to vendor's tier 2 and tier 3 support levels as needed.
- 24/7 Help desk support will start 60 days before the pilot election and will remain assisting the CDOS and counties until the canvassing is completed.

### 6.9.9 L&A testing support

During L&A testing, Clear Ballot remote technical support will be available to assist in troubleshooting issues that arise. If an issue cannot be solved remotely, Clear Ballot can dispatch a technician to the County to provide in-person support for the L&A test at the on-site support rate set forth in Appendix C.



### **6.9.10 Election Day support**

Clear Ballot will have roving staff member (“rovers”) available on Election Day for technical support. Rovers will be located at key regional sites so that each rover can cover eight counties within reasonable driving distance. Rovers will be dispatched to counties to assist with critical (Level 3) system issues. Help Desk resources will prioritize assistance and determine where rovers should go on-site, based on the nature of the problem.

### **6.9.11 Clear Ballot Support portal**

Clear Ballot Customer Support will be accessible via phone, e-mail, and a secure web portal on the Clear Ballot website. Clear Ballot will respond to issues raised through one of these channels promptly, with the precise response time depending on the election phase, as described in “Clear Ballot support phases” in section 6.9.3.

The secure web portal will allow counties to submit issues, browse past issues and solutions, and engage a forum for county administrators to assist one another in determining and disseminating best practices and answers to common questions. While Clear Ballot reserves the right to moderate the forum, it does not plan to restrict the statements made by county representatives on the forum, nor does it take responsibility for any views expressed, suggestions provided, or information posted by non-Clear Ballot personnel.



### 6.9.12 Election processes support

Election task	Clear Ballot support?	Support description
Mail ballot delivery and return	Help Desk	ClearVote system operation
	Help Desk	Fujitsu scanner operation (*)
	Help Desk	Pre-L&A tests support (*)
	On-Site @ CDOS Central office	Project Manager
Early voting	Help Desk	Clear Ballot Customer Support (*)
	Help Desk	Fujitsu scanner HW support(*)
	On-Site @ CDOS Central office	Project Manager
Election day voting	Help Desk	Clear Ballot Customer Support (*)
	Help Desk	Fujitsu Scanner HW support(*)
	Help Desk	Tally/Election reporting issues(*)
	On-Site @ CDOS Central office	Project Manager

Notes:

- (\*) Counties may request on-site support assigned during this election task at the on-site support rate.
- Project manager and Help Desk support resources will escalate system issues to the vendor’s Tier 2 and Tier 3 support levels as needed.
- 24/7 Help Desk support will start 60 days before the pilot election and will continue assisting the CDOS and counties until the canvassing is completed.



### 6.9.13 Post-election support

Post-election task	Clear Ballot support?	Support description
Canvassing	Help Desk Help Desk Help Desk On-Site @ CDOS Central office	Clear Ballot Customer Support Fujitsu Scanner HW support(*) Tally/Election reporting issues(*) Project Manager
Fujitsu maintenance	On-site	Preventive maintenance (**)
Election database back up	Help Desk	Clear Ballot Customer Support
On-going support and maintenance	TBD	TBD

#### Notes

- (\*) Counties may request on-site support assigned during this election task. The on-site support fee will be provided upon request.
- (\*\*) Fujitsu scanners must be covered under a Fujitsu maintenance agreement.
- Project manager and help desk support resources will escalate system issues to the vendor's Tier 2 and Tier 3 support levels as needed.
- 24/7 help desk support will start 60 days before the pilot election and will continue assisting the CDOS and counties until the canvassing is completed.



## 7.0 Sample Reports

### 7.0 Sample Reports

ClearVote generates numerous reports that provide organized and easily understood displays of voting election history and results. The advanced architecture of ClearVote also supports customized reports as may be requested by the State.

#### *Election Management System*

- Election Creation
- Ballot Creation

#### *ClearCount Dashboard and Reporting*

- Visualization Report
  - All Visualization
  - Candidate Visualization
  - Oval Hover Review
  - Ballot Review
  - Ballot Adjudication
  - Write-ins
- Statement of Votes Cast
  - By Precinct
  - By Counter Group
  - By Party
- Statement of Ballots Cast
- Contest Report
- Ballot Reports
  - Ballot Image Report
  - Ballot Style Report
- Precinct Report
- Box Report
- Scan Station Report
- Unreadable Ballots
  - Unreadable Ballot Report
  - Visualization of Unreadable Ballots

Note: These reports are samples; they are subject to change up until certification.

## Election Creation

Clear Ballot Election Management System provides an intuitive template to create an election allowing each category to be defined and customized.

# ClearBallot EMS

Logout

Election > 1 > DistrictCategory >

- + Language
- + VoterGroup
- DistrictCategory
  - + Jurisdiction Wide
  - + Congress
  - + State Senate
  - + State Assembly
  - + City
  - + School
- + Precinct
- + Contest
- + BallotSet
- + CounterGroup
- + VoteCenterCategory
- + Log

## DistrictCategorys

Add
Delete

Info
DistrictCategorys
Districts

Search:

		Sort_seq	Name	Districts.count
<input type="checkbox"/>	Edit	10	Jurisdiction Wide	1
<input type="checkbox"/>	Edit	10	Congress	10
<input type="checkbox"/>	Edit	20	State Senate	10
<input type="checkbox"/>	Edit	30	State Assembly	10
<input type="checkbox"/>	Edit	40	City	10
<input type="checkbox"/>	Edit	50	School	10

Showing 1 to 6 of 6 entries

## Ballot Creation

The Ballot Creation user interface allows customizing ballot layout and visual ballot proofing tools.

ClearBallot EMS
Logout

Election > 1 > Contest > 7 > edit >

- + Language
- + VoterGroup
- + DistrictCategory
- + Precinct
- Contest
  - + Jurisdiction Wide
  - + Congress 10
  - + Congress 20
  - + Congress 30
  - + Congress 40
  - + Congress 50
  - + Congress 60
  - + Congress 70
  - + Congress 80
  - + Congress 90
  - + Congress 100
  - + State Senate 10
  - + State Senate 20
  - + State Senate 30
  - + State Senate 40
  - + State Senate 50
  - + State Senate 60
  - + State Senate 70
  - + State Senate 80

### Contest

Save
Reset
Cancel

<b>Name</b>	Congress 20th District	<b>Sort_seq</b>	70
<b>Short_name</b>	Cong 20th Dist	<b>Abbreviation</b>	CONG20
<b>Contesttype</b>	Candidate	<b>Vote_for</b>	1
<b>District</b>	Congress 20	<b>Votergroup</b>	Non-Partisan
<b>Contestrotation</b>	No Rotation	<b>Rotation_districtcategory</b>	Jurisdiction Wide
<b>Pref. Contest</b>	No Primary Preference	<b>SPty Contest</b>	No Straight Party
<b>Recall Contest</b>	No Recall		

**Ballottext**

English
Spanish
Chinese
Korean
Tagalog

Edit
Format

↶ ↷
Arial Narrow
8pt
**B**
*I*
☰ ☷ ☹ ☺
☰ ☷ ☹ ☺
☰ ☷ ☹ ☺
☰ ☷ ☹ ☺

Congress 20th District

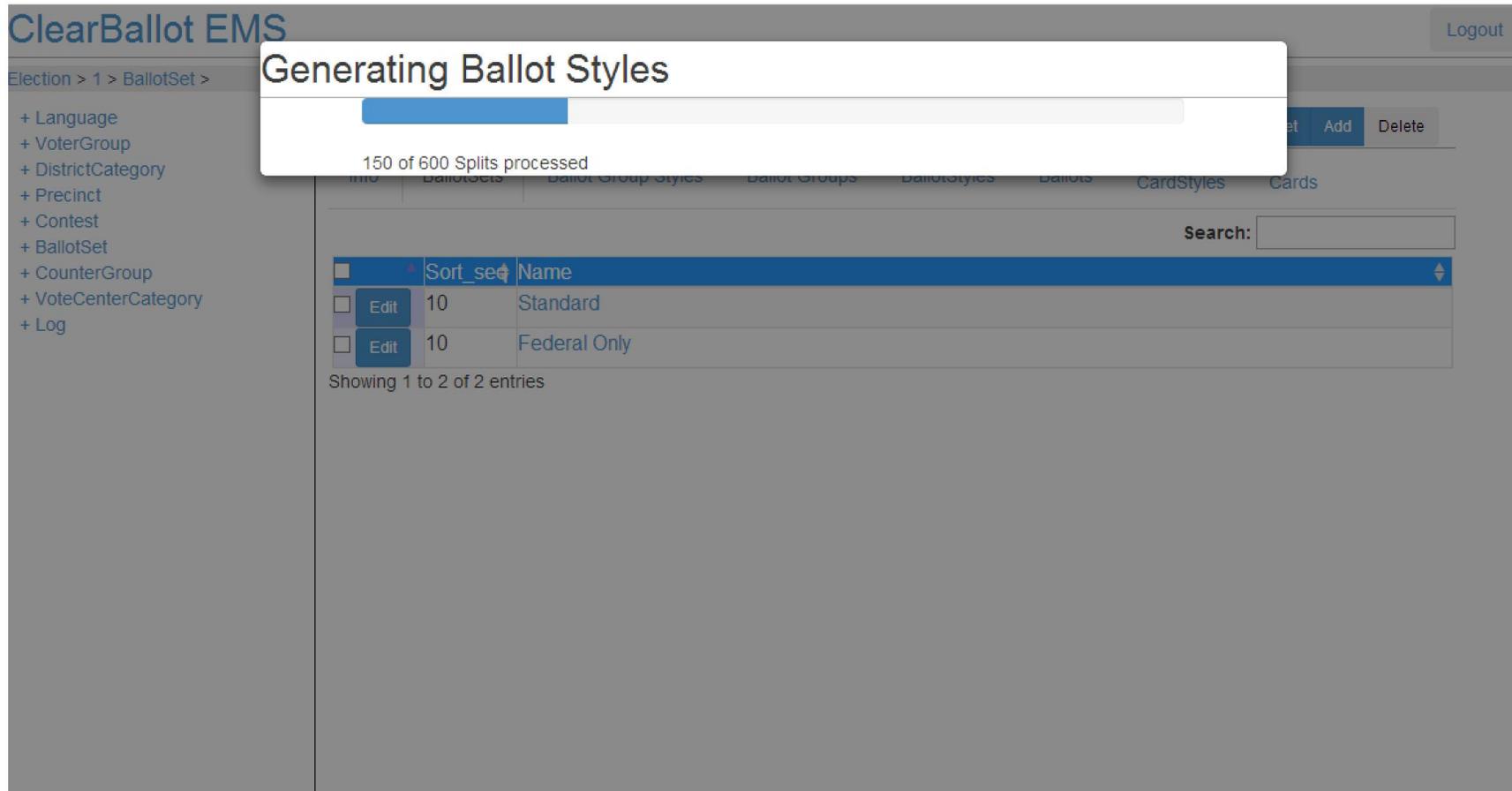
Vote For One (1)

p » span » strong » span

Clear Ballot - 71 Summer Street, Boston, MA 02110 – [www.clearballot.com](http://www.clearballot.com)  
71/236

## Ballot Creation

Ballot Styles and sample ballot styles are easily generated and modified digitally.



ClearBallot EMS Logout

Election > 1 > BallotSet >

- + Language
- + VoterGroup
- + DistrictCategory
- + Precinct
- + Contest
- + BallotSet
- + CounterGroup
- + VoteCenterCategory
- + Log

### Generating Ballot Styles

150 of 600 Splits processed

Sort\_seq Name

<input type="checkbox"/>	Edit	10	Standard
<input type="checkbox"/>	Edit	10	Federal Only

Showing 1 to 2 of 2 entries



## Dashboard

The Dashboard Report gives an overview of an entire election. Each link (light blue) leads to a detailed report that can be viewed, printed or exported.

**State Senate D11 Recall Election, Sep 10, 2013, El Paso County, CO**

### Dashboard

Election Reports		Election Activity Log	
<a href="#">Statement of Votes Cast</a>		<a href="#">Election Activity Log</a>	
<a href="#">Statement of Ballots Cast</a>			
<a href="#">Marginal Vote Visualization</a>			
<a href="#">All Write-in Visualization</a>			

Election Data		
Primary Voting System		Premier
Approx Ballot Image Dimensions		8.5" x 11.0"
# Ballot Styles	1	
# Contests	2	
# Choices	4	
# Parties	2	
# Counter Groups	7	
# Precincts	1 out of 1	

Ballot Scanning Operations		
Scan Date		2013-09-24
# Scanners	2	
# Boxes Scanned	66	
# Pages scanned (ballots and non-ballots)	18,054	
# Non-Ballots	108	
Unreadable Ballots (Needing Review)	7	
Unreadable Ballot Rate	0.04%	
# Distinct Causes of Unreadable Ballots	7	

Ballot Reconciliation		Ballot Reconciliation
Total Cards Scanned (Paper)	17,946	
Cards Automatically Tabulated		17,940
= Initial Tabulated Card Discrepancy (Audit - PVS)		-6

Visual Review & Reconciliation		
Unreadable Ballot Images Needing Review		0
FYI: Determined to be a non-ballot	1	
Occluded or incomplete image		0
Multiple overlapping ballots		0
Ballots Reviewed & Tabulated		6
<b>Final Card Discrepancy</b>		<b>0</b>

© Copyright Clear Ballot Group, 2013

## All Vote Visualization Report

The Vote Visualization Report provides a visual depiction of an entire election. Least confident marginal votes are displayed first allowing Election Supervisors to hover over an oval to see the candidate zone or click on an oval to view the entire ballot and check any vote within question. The Vote Visualization Report initially shows the first 100 least confident votes, overvotes and undervotes and non-votes and allows you to expand the section to view more. Vote Visualization allows an Election Supervisor to quickly determine if any ballots or votes need review.

Clear Ballot

General Election, Nov 6, 2012, Arapahoe County, CO  
Vote Visualization for All

Pages: 100 | Counter Group: All | # Ovals: 100 | Change

**Least Confident Votes for All**  
2,884 non-displayable remainder ovals not shown...  
 4,276,300 more confident ovals shown (these not shown...)



**All Overvotes for All**



**Least Confident Undervotes for All**  
427 non-displayable remainder ovals not shown...

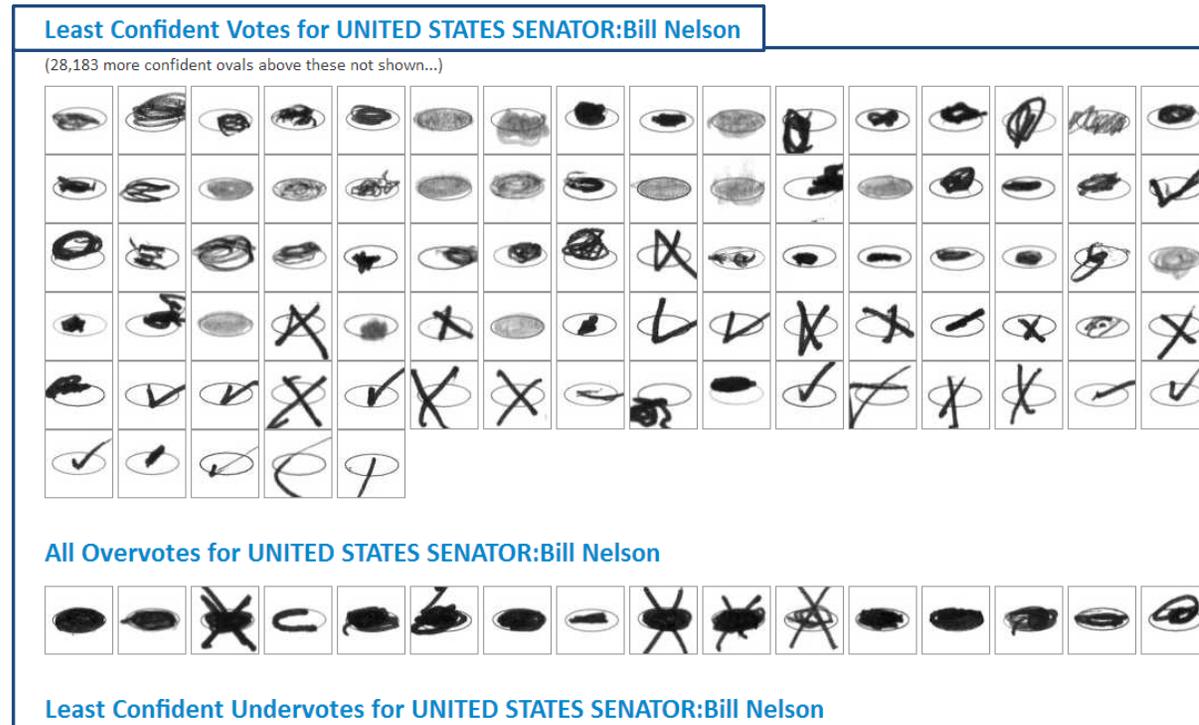
<input type="radio"/> Evan Power	<input type="radio"/> William Howell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Evan Power	<input type="radio"/> William Howell
<input type="radio"/> William Howell	<input type="radio"/> NO	<input type="radio"/> YES	<input type="radio"/> Evan Power	<input type="radio"/> Evan Power	<input type="radio"/> Blas J. Gomez	<input type="radio"/> Tabitha Frazier	<input type="radio"/> YES
<input type="radio"/> Blas J. Gomez	<input type="radio"/> William Howell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Blas J. Gomez	<input type="radio"/> Evan Power	<input type="radio"/> Evan Power
<input type="radio"/> Ryan Terrell	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> NO	<input type="radio"/> William Helmich	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Blas J. Gomez	<input type="radio"/> Lorin Ann Pratt	<input type="radio"/> Evan Power
<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Blas J. Gomez	<input type="radio"/> William Howell	<input type="radio"/> Evan Power	<input type="radio"/> Blas J. Gomez	<input type="radio"/> William Howell	<input type="radio"/> William Howell	<input type="radio"/> Ryan Terrell
<input type="radio"/> Ryan Terrell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Tabitha Frazier	<input type="radio"/> YES	<input type="radio"/> William Howell	<input type="radio"/> William Howell	<input type="radio"/> William Howell
<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> William Helmich	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Tabitha Frazier	<input type="radio"/> William Howell	<input type="radio"/> William Howell
<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> Evan Power	<input type="radio"/> Blas J. Gomez	<input type="radio"/> Lorin Ann Pratt	<input type="radio"/> Lorin Ann Pratt	<input type="radio"/> Evan Power	<input type="radio"/> Ryan Terrell
<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Tabitha Frazier	<input type="radio"/> NO	<input type="radio"/> Tabitha Frazier	<input type="radio"/> NO - Against the 1/2% (0.5 cents) tax
<input type="radio"/> William Howell	<input type="radio"/> Evan Power	<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> NO	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Blas J. Gomez	<input type="radio"/> Martha Lang
<input type="radio"/> William Howell	<input type="radio"/> William Howell	<input type="radio"/> Evan Power	<input type="radio"/> Evan Power	<input type="radio"/> Evan Power	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Blas J. Gomez
<input type="radio"/> Martha Lang	<input type="radio"/> Blas J. Gomez	<input type="radio"/> William Howell	<input type="radio"/> William Howell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Ryan Terrell	<input type="radio"/> Evan Power	<input type="radio"/> Phyllis Basch Smith
<input type="radio"/> Phyllis Basch Smith	<input type="radio"/> Martha Lang	<input type="radio"/> Tabitha Frazier	<input type="radio"/> Martha Lang	<small>(1,176,629 more confident ovals not shown...)</small>			

**Least Confident Nonvotes for All**  
3,721 non-displayable remainder ovals not shown...  
 18,800,891 more confident ovals not shown...



## Candidate Vote Visualization Report

In addition to the All Vote Visualization, you can also look at the visualization by each candidate. It is very important if there is a close race, as you can immediately take a deeper look into the votes for each of those candidates, without having to wade through votes from the entire election.



 Bill Nelson	DEM	 Bill Nelson	DEM
 Bill Nelson	DEM	 Bill Nelson	DEM

### Oval Hover Review

The Vote Visualization Report provides an overview of the votes for an entire election or a given candidate. In each of these reports hovering over an oval displays each candidate zone for a given race. The hover provides an in depth review of each specific oval, the vote choice, the voter's party, the precinct in which it was voted, the counter group and other specifics about the software's confidence level of the vote cast.

**Least Confident Vote**  
(28,183 more confident ovals)

EV-083+10767.jpg		UNITED STATES SENATOR (Vote for One)	
Choice	UNITED STATES SENATOR:Bill Nelson	<input type="radio"/>	Connie Mack REP
Party	DEM	<input checked="" type="radio"/>	Bill Nelson DEM
Precinct	11	<input type="radio"/>	Bill Gaylor NPA
CounterGroup	EV	<input type="radio"/>	Chris Borgia NPA
OvalDensity	11.76	<input type="radio"/>	Write-in
ZoneDensity	4.31		
Oval Count	28301st-most confident vote 5th-least confident vote		

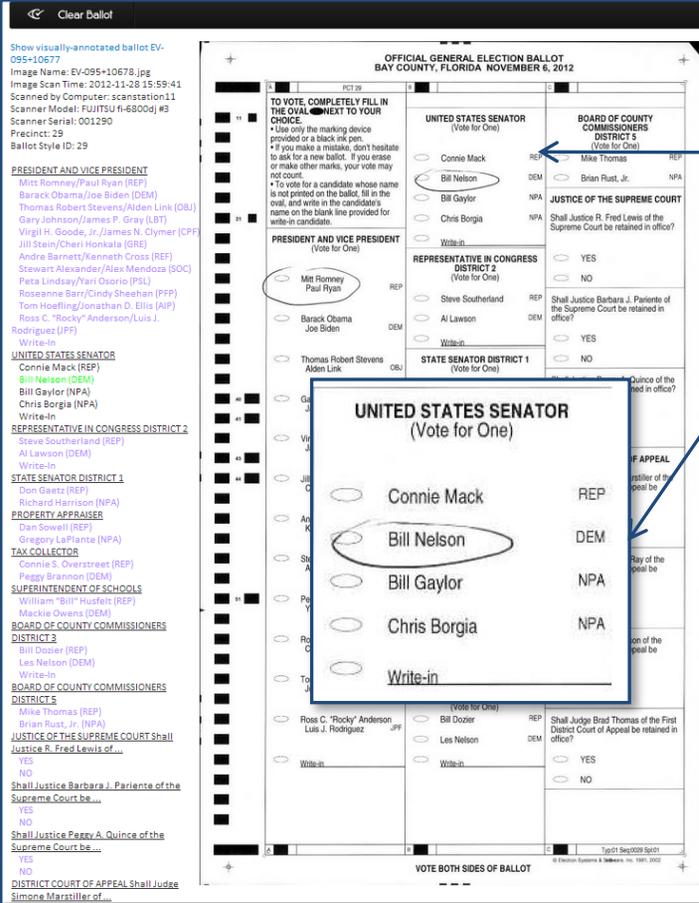
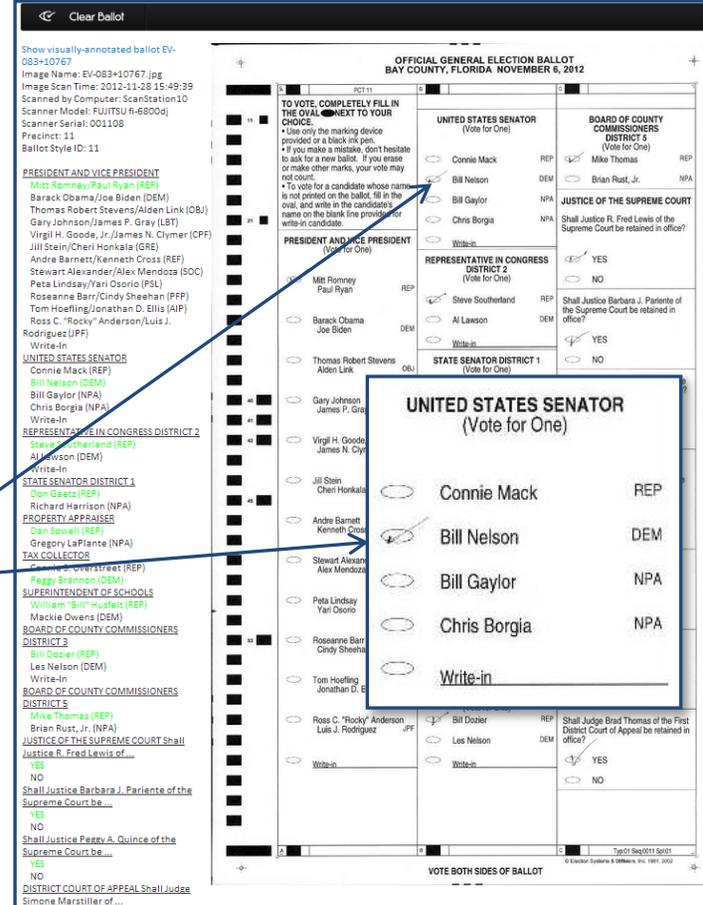
**All Overvotes for UNITED STATES SENATOR:Bill Nelson**

**Least Confident Undervotes for UNITED STATES SENATOR:Bill Nelson**

Bill Nelson DEM	Bill Nelson DEM
Bill Nelson DEM	Bill Nelson DEM

## Ballot Review

Each oval in the Vote Visualization links to the oval's ballot. It allows election officials to review the entire ballot instantly, confirm the mark, and if necessary determine voter intent by reviewing other contests on the ballot.

## Ballot Adjudication and Provenance

Ballot Adjudication and provenance allows election officials to confirm the adjudication of each contest on the ballot. The Ballot Provenance is everything that is known about the ballot including

- Box location,
- Date and time of scan
- Scanner model and serial number
- ScanStation Name
- Ballot Style ID
- Precinct ID
- If the ballot cannot automatically tabulated:
  - The reason the ballot failed tabulation.
  - Person performing initial adjudication – date/time
  - Person making final approval – date/time

Show visually-annotated ballot EV-083+10767  
Image Name: EV-083+10767.jpg  
Image Scan Time: 2012-11-28 15:49:39  
Scanned by Computer: ScanStation10  
Scanner Model: FUJITSU fi-6800dj  
Scanner Serial: 001108  
Precinct: 11  
Ballot Style ID: 11

OFFICIAL GENERAL ELECTION BALLOT  
BAY COUNTY, FLORIDA NOVEMBER

TO VOTE, COMPLETELY FILL IN THE OVAL NEXT TO YOUR CHOICE  
• Use only the marking device provided or a black ink pen.  
• If you make a mistake, don't hesitate to ask for a new ballot. If you erase or make other marks, your vote may not count.  
• To vote for a candidate whose name is not printed on the ballot, fill in the oval, and write in the candidate's name on the blank line provided for write-in candidate.

**PRESIDENT AND VICE PRESIDENT**  
Write-in  
Barack Obama/Joe Biden (DEM)  
Thomas Robert Stevens/Alden Link (OBJ)  
Gary Johnson/James P. Gray (LBT)  
Virgil H. Goode, Jr./James N. Clymer (CPF)  
Jill Stein/Cheri Honkala (GRE)  
Andre Barnett/Kenneth Cross (REF)  
Stewart Alexander/Alex Mendoza (SOC)  
Peta Lindsay/Yari Osorio (PSL)  
Roseanne Barr/Cindy Sheehan (PPF)  
Tom Hoefling/Jonathan D. Ellis (AIP)  
Ross C. "Rocky" Anderson/Luis J. Rodriguez (JPF)

**UNITED STATES SENATOR**  
Write-in  
Connie Mack (REP)  
Bill Nelson (DEM)  
Bill Gaylor (NPA)  
Chris Borgia (NPA)

**REPRESENTATIVE IN CONGRESS DISTRICT 2**  
Write-in  
Steve Southerland (REP)  
Al Lawson (DEM)

**STATE SENATOR DISTRICT 1**  
Write-in  
Don Gaetz (REP)

**PROPERTY APPRAISER**  
Write-in  
Richard Harrison (NPA)

**TAX COLLECTOR**  
Write-in  
Gregory LaPlante (NPA)

**SUPERINTENDENT OF SCHOOLS**  
Write-in  
Mackie Owens (DEM)

**BOARD OF COUNTY COMMISSIONERS DISTRICT 1**  
Write-in  
Bill Dozier (REP)  
Les Nelson (DEM)

**BOARD OF COUNTY COMMISSIONERS DISTRICT 2**  
Write-in  
Brian Rust, Jr (NPA)

**JUSTICE OF THE SUPREME COURT SHALL JUDGE B. FRED LEWIS OF ...**  
YES  
NO  
Shall Justice Barbara J. Pariente of the Supreme Court be ...  
YES  
NO  
Shall Justice Peggy A. Quince of the Supreme Court be ...  
YES  
NO  
DISTRICT COURT OF APPEAL SHALL JUDGE SIMONE MARATHIER OF ...  
YES  
NO  
Shall Judge Stephanie Ray of the First District Court of ...  
YES  
NO  
Shall Judge Ron Swanson of the First District Court of ...  
YES  
NO  
Shall Judge Brad Thomas of the First District Court of ...  
YES  
NO

**UNITED STATES SENATOR (Vote for One)**  
Connie Mack (REP)  
Bill Nelson (DEM)  
Bill Gaylor (NPA)  
Chris Borgia (NPA)  
Write-in

**REPRESENTATIVE IN CONGRESS DISTRICT 2 (Vote for One)**  
Steve Southerland (REP)  
Al Lawson (DEM)  
Write-in

**STATE SENATOR DISTRICT 1 (Vote for One)**  
Don Gaetz (REP)  
Richard Harrison (NPA)  
Write-in

**PROPERTY APPRAISER (Vote for One)**  
Gregory LaPlante (NPA)  
Write-in

**TAX COLLECTOR (Vote for One)**  
Connie S. Overstreet (REF)  
Peggy Brannon (DEM)  
Write-in

**SUPERINTENDENT OF SCHOOLS (Vote for One)**  
William "Biff" Hueltel (REF)  
Mackie Owens (DEM)  
Write-in

**BOARD OF COUNTY COMMISSIONERS DISTRICT 1 (Vote for One)**  
Bill Dozier (REP)  
Les Nelson (DEM)  
Write-in

**BOARD OF COUNTY COMMISSIONERS DISTRICT 2 (Vote for One)**  
Bill Dozier (REP)  
Les Nelson (DEM)  
Write-in

**Shall Judge Brad Thomas of the First District Court of Appeal be retained in office?**  
YES  
NO

**Shall Judge Brad Thomas of the First District Court of Appeal be retained in office?**  
YES  
NO

VOTE BOTH SIDES OF BALLOT

Show visually-annotated ballot EV-083+10767  
Image Name: EV-083+10767.jpg  
Image Scan Time: 2012-11-28 15:49:39  
Scanned by Computer: ScanStation10  
Scanner Model: FUJITSU fi-6800dj  
Scanner Serial: 001108  
Precinct: 11  
Ballot Style ID: 11

**PRESIDENT AND VICE PRESIDENT**  
Mitt Romney/Paul Ryan (REP)  
Barack Obama/Joe Biden (DEM)  
Thomas Robert Stevens/Alden Link (OBJ)  
Gary Johnson/James P. Gray (LBT)  
Virgil H. Goode, Jr./James N. Clymer (CPF)  
Jill Stein/Cheri Honkala (GRE)  
Andre Barnett/Kenneth Cross (REF)  
Stewart Alexander/Alex Mendoza (SOC)  
Peta Lindsay/Yari Osorio (PSL)  
Roseanne Barr/Cindy Sheehan (PPF)  
Tom Hoefling/Jonathan D. Ellis (AIP)  
Ross C. "Rocky" Anderson/Luis J. Rodriguez (JPF)

**UNITED STATES SENATOR**  
Write-in  
Connie Mack (REP)  
Bill Nelson (DEM)  
Bill Gaylor (NPA)  
Chris Borgia (NPA)

**REPRESENTATIVE IN CONGRESS DISTRICT 2**  
Write-in  
Steve Southerland (REP)  
Al Lawson (DEM)

**STATE SENATOR DISTRICT 1**  
Write-in  
Don Gaetz (REP)

**PROPERTY APPRAISER**  
Write-in  
Richard Harrison (NPA)

**TAX COLLECTOR**  
Write-in  
Gregory LaPlante (NPA)

**SUPERINTENDENT OF SCHOOLS**  
Write-in  
Mackie Owens (DEM)

**BOARD OF COUNTY COMMISSIONERS DISTRICT 1**  
Write-in  
Bill Dozier (REP)  
Les Nelson (DEM)

**BOARD OF COUNTY COMMISSIONERS DISTRICT 2**  
Write-in  
Brian Rust, Jr (NPA)

**JUSTICE OF THE SUPREME COURT SHALL JUDGE B. FRED LEWIS OF ...**  
YES  
NO  
Shall Justice Barbara J. Pariente of the Supreme Court be ...  
YES  
NO  
Shall Justice Peggy A. Quince of the Supreme Court be ...  
YES  
NO  
DISTRICT COURT OF APPEAL SHALL JUDGE SIMONE MARATHIER OF ...  
YES  
NO  
Shall Judge Stephanie Ray of the First District Court of ...  
YES  
NO  
Shall Judge Ron Swanson of the First District Court of ...  
YES  
NO  
Shall Judge Brad Thomas of the First District Court of ...  
YES  
NO

## Write-in Visualization Report

The Write-in Visualization Report provides complete visualization of all write-ins in an election. Write-ins can be viewed by each contest or the overall election. Each write-in shown in the report below is linked to its corresponding ballot. This report alone has proven to reduce the time counties spend reviewing write-ins by over 90%.

Clear Ballot

General Election Nov 6, 2012, Larimer County, FL  
Vote Visualization for President: Write-in  
Precinct: All County Group: All # Date: 100 Change

Least Confident Votes for President: Write-in  
(10 more confident or less above than not shown...)

Rick Santorum	RON PAUL	Ron Paul	Jesus	Ron Paul	Dr. Ron Paul	Ron Paul
John McCain	Jon Stewart	RON PAUL	Ron Paul	Bobby Jindal	Ron Paul	John McCain
RON PAUL	Ron Paul	Jesus Christ		Clayton Powell	RON PAUL	Ron Paul
Bill Clinton	Big Bird	RON PAUL	Stuart F. Williams	Peacher McGhee	Ron Paul	Asha McCain
Stephen Colbert	TO JAKES	Ron Paul	Timothy M. Hollic	Ron Paul	Ron Paul	Ron Paul
Ron Paul	RON PAUL	Ron Paul	Ron Paul	Hanther Spivey	Ron Paul	Ron Paul
Ron Paul	Sen. Lindsay Graham (R-SC)	JOHN HUNTSMAN	Ron Paul	Jesus Christ	Denver	None
Daniel Tosh	Richard Leland Bow	Ron Paul	RON PAUL	Hilary Clinton	Abigail Hofmann	Ron Paul
Bryan J. Barcon	MICKEY MOUSE	RICHARD LUGAR	Like it matters	Ron Paul	Ron Paul	Hilary Clinton
Ron Paul	Ron Paul	Bill Clinton	Herma Cain	Ron Paul	Scott Walker	Ron Paul
God Help us!	Bill Cowart	Ron Paul	NANAPA Lynden Louchery Glass	RON PAUL	RICHARD LUGAR	Ron Paul
RON PAUL	Ron Paul	Ron Paul	John Bush	RON PAUL	Hilary Clinton	Jesus Christ
RON PAUL	Rudy Giuliani	RON PAUL	RICK SANTORUM	Ron Paul	Ron Paul	Ron Paul
None of the above	DARNALD DUCK SPEEDY GORZOLA	OFFAH	Hilary Clinton	Jesus	Ron Paul	Ron Paul



## Statement of Votes Cast

The Statement of Votes Cast Report provides a summary of votes for each candidate choice. The number of ballots for the contest and the number of votes, overvotes, undervotes and non-votes for each choice are displayed in the report with each number linking to the corresponding ballots and vote visualization.

Clear Ballot
[Redacted]

**General Election, Nov 6, 2012, Leon County, FL**

**Statement of Votes Cast**

Filter table:

Precinct:  Counter Group:  Change

Choice	Ballots with Contest (*)	Votes	Over Votes	Under Votes	Non Votes	Links
<b>PRESIDENT</b>						
Barack Obama	148,517	90,558	3	368	57,588	⋮
Mitt Romney	148,517	55,619	0	368	92,530	⋮
Gary Johnson	148,517	1,134	1	368	147,014	⋮
Write-in	148,517	310	0	368	147,839	⋮
Jill Stein	148,517	231	1	368	147,917	⋮
Roseanne Barr	148,517	102	1	368	148,046	⋮
Virgil H. Goode, Jr.	148,517	61	0	368	148,088	⋮
Thomas R. Stevens	148,517	46	0	368	148,103	⋮
Ross C. Anderson	148,517	32	1	368	148,116	⋮
Tom Hoefling	148,517	20	0	368	148,129	⋮

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### Statement of Votes Cast by Precinct

The Statement of Votes Cast by Precinct Report shows the vote totals for a given choice in a specific precinct. Each precinct can be sorted and viewed individually by each candidate choice. Within the report each vote total links to vote and ballot visualization.

Clear Ballot

**General Election, Nov 6, 2012, Leon County, FL**  
**Statement of Votes Cast by Precinct**

Filter table:

Precinct:  Counter Group:

Choice	Precinct	Ballots with Contest (*)	Votes	Over Votes	Under Votes	Non Votes	NumBoxes	Links
<b>PRESIDENT</b>								
Barack Obama	2305	3,819	3,102	1	9	707	51	
Barack Obama	1321	3,062	2,838	0	6	218	47	
Barack Obama	1309	2,152	2,106	0	3	43	33	
Barack Obama	2507	2,399	1,884	0	4	511	42	
Barack Obama	5260	2,731	1,797	0	2	932	47	
Barack Obama	3501	2,364	1,749	0	10	605	45	
Barack Obama	4119	3,689	1,718	0	10	1,961	44	
Barack Obama	2511	2,236	1,695	0	2	539	48	
Barack Obama	4125	3,810	1,625	0	2	2,183	50	
Barack Obama	3411	2,237	1,551	0	5	681	52	

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### Statement of Votes Cast By Counter Group

The Statement of Votes Cast By Counter Group Report shows a given candidate choice and a breakdown of votes, overvotes, undervotes and non-votes from each counter group.

Clear Ballot

General Election, Nov 6, 2012, Leon County, FL  
Statement of Votes Cast by Counter Group

Filter table:

Precinct:  Counter Group:

Choice	Counter Group	Ballots with Contest (*)	Votes	Over Votes	Under Votes	Non Votes
PRESIDENT						
Barack Obama	ED	72,535	41,649	2	157	30,727
Barack Obama	EV	44,893	30,774	1	50	14,068
Barack Obama	AB	30,321	17,665	0	136	12,520
Barack Obama	OT	768	470	0	25	273

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### Statement of Ballots Cast by Precinct

The Statement of Ballots Cast by Precinct Report gives a summary of each precinct, the number of ballots cast in each precinct and the number of boxes from each precinct. This report provides Election Supervisors with a complete inventory system including box numbers and ballot locations within boxes. Clicking on a value in the NumBox column will show the location of ever ballot having that precinct and counter group.

Clear Ballot

General Election, Nov 6, 2012, Leon County, FL

Statement of Ballots Cast by Precinct

Filter table:

Precinct:  Counter Group:

Precinct	Ballots	NumBoxes
1203	3,603	42
1205	1,162	35
1230	802	32
1251	91	17
1255	1,130	30
1257	928	21
1259	167	17
1301	1,234	25
1302	1,024	32
1303	2,190	37

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## Contests Report

The Contests Report provides an overview of each contest in an election. In detail, the report displays the number of choices in each contest and the number of precincts involved in each. Links to boxes, ballots and votes are provided to view ballot and vote visualization. This report also provides winners for each contest and percentage margin.

Clear Ballot

**General Election, Nov 6, 2012, Leon County, FL**

**Contests Report**

Filter table:

Precinct:  Counter Group:

ContestID	Contest	Vote Rule	# Choices	# Precincts	# Boxes	# Ballots	Properly Voted	Under Voted	Under Voted %	Over Voted	Over Voted %	Margin	Margin %	Winner(s)
1	PRESIDENT	1	13	134	532	148,517	148,146	368	0.25%	3	0.00%	34,939	23.58%	Barack Obama
2	US SENATOR	1	5	134	532	148,517	143,213	5,303	3.70%	1	0.00%	47,751	33.34%	Bill Nelson
3	US REPRESENTATIVE D2	1	3	134	532	148,517	143,142	5,374	3.75%	1	0.00%	33,411	23.34%	Al Lawson
4	STATE ATTORNEY	1	2	134	532	148,473	139,731	8,741	6.26%	1	0.00%	6,631	4.75%	William N. Meggs
5	STATE SENATOR D3	1	2	134	532	148,473	140,614	7,859	5.59%	0	0	74,944	53.30%	Bill Montford
8	STATE REP D7	1	2	4	62	3,846	3,664	182	4.97%	0	0	628	17.14%	Halsey Beshears
7	STATE REP D9	1	2	83	408	94,517	89,124	5,392	6.05%	1	0.00%	20,840	23.38%	Michelle R Vasilinda
6	SHERIFF	1	2	134	532	148,473	139,058	9,415	6.77%	0	0	52,574	37.81%	Larry Campbell
9	SUPERINTENDENT SCHOOLS	1	2	134	532	148,473	137,887	10,584	7.68%	2	0.00%	91,136	66.09%	Jackie Pons
22	SUPREME CT - LEWIS	1	2	134	532	148,473	129,325	19,147	14.81%	1	0.00%	64,513	49.88%	YES

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## Ballot Image Report

The Ballot Image Report provides images of every ballot in an election. The report displays both sides of a ballot, the scan time, any errors that may have occurred, review status, the precinct in which the ballot was voted, the ballot style and the ballot identification number, which is a serial number in order to locate and identify each ballot. Ballots can be viewed one per page or as thumbnails for quicker review. The fast forward button may be clicked up to four times to rapidly page through the ballot images.

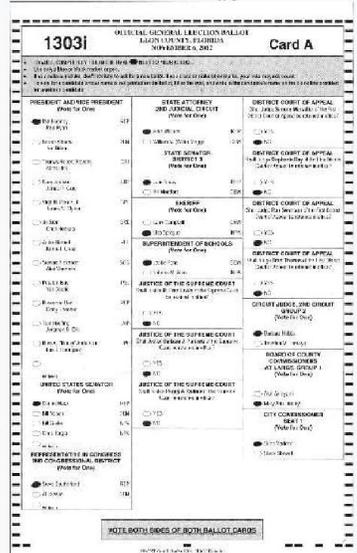
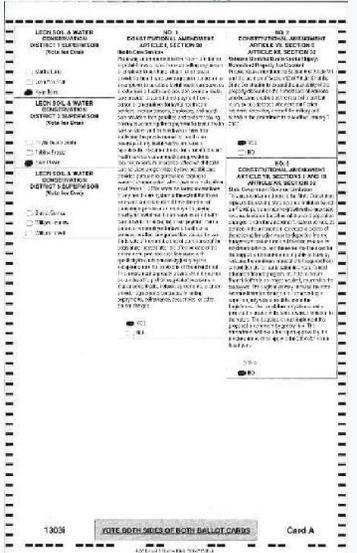
Clear Ballot
[REDACTED]

General Election, Nov 6, 2012, Leon County, FL  
Ballot Images

Filter table:

Thumbnail Size:

entries per page 1 to 1 of 100,000

Side 1 Image	Side 2 Image	Scan Time	Registration Error(s)	Review Status	Precinct	Ballot Style	BallotID
 <p>AB-001+10003.jpg</p>	 <p>AB-001+10004.jpg</p>	2012-12-04 09:48:56			1303	1	AB-001+10003

## Ballot Image Thumbnails

Ballot thumbnail images provide a quick overview of cast ballots. This view, for example, can be used to identify non-ballot images quickly.

Clear Ballot
[REDACTED]

**General Election, Nov 6, 2012, Leon County, FL**

**Ballot Images**

Filter table:

Thumbnail Size:  Change

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Side 1 Image	Side 2 Image	Scan Time	Registration Error(s)	Review Status	Precinct	Ballot Style	BallotID
AB-001+10003.jpg 	AB-001+10004.jpg 	2012-12-04 09:48:56			1303	1	<a href="#">AB-001+10003</a>
AB-001+10005.jpg 	AB-001+10006.jpg 	2012-12-04 09:48:57			1303	1	<a href="#">AB-001+10005</a>



## Ballot Styles Report

The Ballot Styles Report summarizes each ballot style used in an election. The report lists ballot styles, the number of ballots voted with each ballot style, the number of precincts using each ballot style and each ballot identification number. The Sample Ballot ID column shows a representative ballot having that style.

Clear Ballot
[Redacted]

General Election, Nov 6, 2012, Leon County, FL Filter table:

### Ballot Styles

BallotStyleID	Ballots	# Precincts	Sample BallotID	Blank Ballot PDF File Name
1	30,841	24	AB-001+10003	Default-1-1203-NP-FB.pdf
2	144,648	134	AB-001+10007	Default-2-1203-NP-FB.pdf
3	43,581	41	AB-018+10007	Default-3-1230-NP-FB.pdf
4	5,061	9	AB-012+10005	Default-4-1251-NP-FB.pdf
5	43,759	37	AB-031+10003	Default-5-1257-NP-FB.pdf
6	3,848	4	AB-022+10017	Default-6-2251-NP-FB.pdf
7	1,061	1	AB-023+10003	Default-7-2252-NP-FB.pdf
8	12,476	9	AB-024+10009	Default-8-2303-NP-FB.pdf
9	1,747	5	AB-022+10169	Default-9-2355-NP-FB.pdf
10	2,603	2	AB-018+10107	Default-10-2503-NP-FB.pdf

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## Precinct Report

The Precinct Report summarizes each precinct's ballot style, the number of ballots within each precinct as well as the number of boxes in each precinct with a certain ballot style. The report provides links to visualization of each precinct's ballot.

Clear Ballot

General Election, Nov 6, 2012, Leon County, FL

Precinct Report

Filter table:

Box:  Ballot Style:

Precinct	BallotStyleID	Ballots	# Boxes With Precinct/Style
1203	1	1,821	43
1205	1	587	34
1301	1	634	25
1303	1	1,118	37
1309	1	2,152	34
1311	1	425	21
1313	1	1,337	36
1315	1	182	20
1317	1	1,069	36
1319	1	1,126	37

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## Box Report

The Box Report provides a detailed description of the contents in each ballot box including the number of ballots, how many are unreadable, which scanners were used, the scanning duration and the number of precincts in each ballot box. Each ballot box is given an identification number, which allows the ballot images to be displayed.

←
Clear Ballot

**General Election, Nov 6, 2012, Leon County, FL**

**Box Report** Filter table:

Precinct:  Counter Group:  Contest:  Change

BoxID	Ballots	Unreadable	%	Scan Station	Scanner Model	Scanner Serial	Start Scan Time	End Scan Time	Scan Duration	Ballots Per Hour	# Precincts
AB-001	355	0	0.00%	ScanStation09	FUJITSU fi-6800dj	001243	2012-12-04 09:48:25	2012-12-04 09:53:55	0:05:30	3,873	2
AB-002	383	0	0.00%	ScanStation08	FUJITSU fi-6800dj	001242	2012-12-04 09:46:42	2012-12-04 09:55:11	0:08:29	2,709	2
AB-003	410	0	0.00%	ScanStation10	FUJITSU fi-6800dj	001244	2012-12-04 09:40:37	2012-12-04 09:53:57	0:13:20	1,845	2
AB-004	123	0	0.00%	ScanStation10	FUJITSU fi-6800dj	001244	2012-12-04 09:55:57	2012-12-04 09:58:53	0:02:56	2,516	2
AB-005	476	0	0.00%	CBG_Scanner_04	FUJITSU fi-6670dj	700347	2012-12-04 10:54:10	2012-12-04 11:05:54	0:11:44	2,434	2
AB-006	68	0	0.00%	ScanStation08	FUJITSU fi-6800dj	001242	2012-12-04 11:14:17	2012-12-04 11:15:21	0:01:04	3,825	2
AB-007	406	0	0.00%	ScanStation08	FUJITSU fi-6800dj	001242	2012-12-04 09:56:29	2012-12-04 10:07:54	0:11:25	2,134	2
AB-008	381	0	0.00%	CBG_Scanner_02	FUJITSU fi-6800dj	001290	2012-12-04 12:12:18	2012-12-04 12:21:02	0:08:44	2,618	2
AB-009	512	0	0.00%	ScanStation09	FUJITSU fi-6800dj	001243	2012-12-04 09:56:17	2012-12-04 10:04:06	0:07:49	3,930	2
AB-010	629	1	0.16%	CBG_Scanner_02	FUJITSU fi-6800dj	001290	2012-12-04 11:57:01	2012-12-04 12:10:48	0:13:47	2,738	2

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## Scan Station Report

The Scan Station Report provides detailed scanner specifications and its performance during an election. The report gives information about the number of ballots each scanner scanned, the number of boxes completed, the operation time and the number of ballots per hour. The box number links to ballot visualization within each box. Performance statistics about each scanner operator are also available. This information can be used to identify above average operators.

Scan Station	Boxes	Ballots	Unreadable	%	Scanner Model	Scanner Serial	Start Scan Time	End Scan Time	Scan Duration	Ballots Per Hour
beast	1	1	0	0.00%			2013-02-18 12:16:34	2013-02-18 12:18:00	0:01:26	42
CBG_Scanner_01	57	31,423	17	0.05%	FUJITSU fi-6800dj #3	001482	2012-12-04 09:34:54	2012-12-05 14:36:24	1 day, 5:01:30	1,083
CBG_Scanner_02	51	29,141	23	0.08%	FUJITSU fi-6800dj	001290	2012-12-04 09:46:36	2012-12-05 14:45:24	1 day, 4:58:48	1,006
CBG_Scanner_03	53	30,021	16	0.05%	FUJITSU fi-6800dj	001290	2012-12-04 09:33:30	2012-12-05 14:44:21	1 day, 5:10:51	1,029
CBG_Scanner_04	23	12,185	9	0.07%	FUJITSU fi-6670dj	700347	2012-12-04 10:35:40	2012-12-05 14:35:01	1 day, 3:59:21	435
CBG_Scanner_05	57	33,859	15	0.04%	FUJITSU fi-6800dj	001569	2012-12-04 09:31:19	2012-12-05 14:40:28	1 day, 5:09:09	1,161
CBG_Scanner_06	31	16,784	52	0.31%	FUJITSU fi-6670dj	000081	2012-12-04 10:03:33	2012-12-05 14:38:40	1 day, 4:35:07	587
ScanStation08	61	30,998	18	0.06%	FUJITSU fi-6800dj	001242	2012-12-04 09:46:42	2012-12-05 14:41:52	1 day, 4:55:10	1,072
ScanStation09	66	33,868	12	0.04%	FUJITSU fi-6800dj	001243	2012-12-04 09:48:25	2012-12-05 17:10:34	1 day, 7:22:09	1,080
ScanStation10	65	37,017	27	0.07%	FUJITSU fi-6800dj	990002	2012-12-04 09:40:37	2012-12-20 15:41:05	16 days, 6:00:28	95

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Filter table:

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### Distinct Causes of Unreadable Ballots Report

The Unreadable Ballot Report gives a description of each error message within an election and links to each ballot with a specific error allowing visualization and remaking of the ballot if needed.

Clear Ballot

General Election, Nov 6, 2012, Leon County, FL  
Distinct Causes of Unreadable Ballots

Filter table:

ErrorMessage	BallotsWithErrors	BallotsRemade
Image height (...) is not a normal ballot - scanner probably pulled in more than one page (MULTI-GRAB)	5	5
Invalid Side1 checksum (...)	13	13
Invalid Side2 Date in code channel	14	14
Mis-read of Side2 code channel (...)	12	12
No timing marks found; probable non-ballot	534	0
Possible tear in BOTTOM code channel	1	1
Rotated image once, and still have more timing marks on bottom than top	2	2
Timing marks found on one side, but not on the other side	4	4
Wrong number of LEFT timing marks (...)	33	33
Wrong number of RIGHT timing marks (...)	106	106

10 entries per page 1 to 10 of 11

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## Ballot Images Needing Review Report

The Ballot Images Report of ballots needing review provides a description of the issue and ballot visualization. The report gives an image of each ballot, the time it was scanned, the error, the review status, ballot style and ballot identification number. Many of the scanning errors are the result of folded corners or torn pages. Election officials can review the ballot image and remake the ballot if it was not tabulated.

Side 1 Image	Side 2 Image	Scan Time	Registration Error(s)	Review Status	Precinct	Ballot Style	BallotID
		2012-12-04 12:00:37	Side 1: Invalid Side2 Date in code channel! Side 2: Invalid Side2 Date in code channel!	Reviewed and tabulated	1321	2	<a href="#">AB-010+10417</a>
		2012-12-04 12:10:33	Side 1: Invalid Side1 checksum (3 vs. 1)	Reviewed and tabulated	1507	2	<a href="#">AB-021+10741</a>
		2012-12-04 10:18:17	Side 1: Wrong number of RIGHT timing marks (47 at most, expected 53)	Reviewed and tabulated	2358	2	<a href="#">AB-028+10271</a>
		2012-12-04 10:59:30	Side 2: Mis-read of Side2 code channel (986)	Reviewed and tabulated	4167	5	<a href="#">AB-038+10735</a>



## Database Event Log Report

The Database Event Log provides a detailed report of the election process. The time and process each scanner was operating and any messages delivered to the scanning operator. This log is another indicator of the security Clear Ballot has implemented across its entire solution.

⏪
Clear Ballot

General Election, Nov 6, 2012, Leon County, FL Filter table:

### Database Event Log

Time	Source	Database	User	Machine	Severity	Message	URL
2012-12-04 09:09:50				CBG_SCANNER_06		Started Tue Dec 4 09:09:48 2012	
2012-12-04 09:10:36				CBG_SCANNER_06		ScoringProcess1: Total of 0 ballots, 0 image files, 0 ballots with errors, 0 images with errors	
2012-12-04 09:10:36				CBG_SCANNER_06		ScoringProcess1: Total elapsed time = 46.88 secs, averaging 0.0 msec/file, averaging 0.00 images/sec, averaging 0.00 ballots/sec	
2012-12-04 09:10:36				CBG_SCANNER_06		ScoringProcess2: Total of 0 ballots, 0 image files, 0 ballots with errors, 0 images with errors	
2012-12-04 09:10:37				CBG_SCANNER_06		ScoringProcess2: Total elapsed time = 46.96 secs, averaging 0.0 msec/file, averaging 0.00 images/sec, averaging 0.00 ballots/sec	
2012-12-04 09:10:37				CBG_SCANNER_06		Ended Tue Dec 4 09:10:36 2012	
2012-12-04 09:10:50				CBG_SCANNER_06		Started Tue Dec 4 09:10:49 2012	
2012-12-04 09:11:04				CBG_SCANNER_06		ScoringProcess1: Total of 0 ballots, 0 image files, 0 ballots with errors, 0 images with errors	
2012-12-04 09:11:04				CBG_SCANNER_06		ScoringProcess1: Total elapsed time = 14.66 secs, averaging 0.0 msec/file, averaging 0.00 images/sec, averaging 0.00 ballots/sec	
2012-12-04 09:11:05				CBG_SCANNER_06		ScoringProcess2: Total of 0 ballots, 0 image files, 0 ballots with errors, 0 images with errors	

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## 8.0 Sample Project Artifacts

Clear Ballot has substantial experience planning, managing and implementing voting system projects and use special planning tools and communication methods to ensure that the State and Clear Ballot are aligned throughout the process. Examples of what has been used in the past in generic form is included in Appendix B. We would propose working with the State to use tools and processes that are customized to the State and that reflect best practices in program management.



## 9.0 General Questions

1. What staff support from CDOS and counties do you envision needing during the implementation of the UVS in a county? Identify each resource by location (CDOS or county), role or responsibility, technical skills needed, suggested expertise in years, and any clarifying comments.

Answer: Clear Ballot understands that counties will adopt the selected UVS at their own pace and, accordingly, it is unlikely that even a majority of counties will move to the new system at the outset. To minimize cost and administrative burden Clear Ballot expects / requests that CDOS provide the following services during the initial implementation phase (2014):

- **Forecasting:** Clear Ballot expects a quarterly forecast of the counties expected to adopt the UVS in the next six months.
- **Contracting:** Clear Ballot expects that the counties will purchase the UVS and support services off of a standardized contract with pre-negotiated prices and terms.
- **CDOS Staff Training:** In the initial implementation, Clear Ballot expects that CDOS staff will organize and participate in a pilot training program with selected counties to review and critique Clear Ballot's training curriculum. CDOS will have staff with a minimum of 5 years of election experience in the areas of election definition, tabulation, reporting, integration with SCORE and election night reporting.

**Coordinated County Training:** Clear Ballot expects CDOS will coordinate training schedules with each county.

2. How many county implementations do you feel you could support simultaneously?

Answer: Clear Ballot is proposing an accelerated pilot program beginning with the State Primary election of 2014. Training time will be significantly reduced as it is assumed that the pilot counties will use their existing EMS for ballot preparation. Assuming contract award will be on schedule; Clear Ballot estimates that it could support 17 initial pilots as shown in the table below.

	Stage 2	Stage 3
	June 2014 State Primary	Nov. 2014 General
Registered Voters		
Over 300,000	2	4
50,000 – 300,000	5	12
Less than 50,000	10	20
Total	17	36



3. What are your coverage, terms, and duration for warranties of the hardware, software, and other deliverables provided pursuant to this RFP?

ClearVote software has a one (1) year warranty period, post implementation. Fujitsu hardware is covered under the four (4) year maintenance contract.

4. What are your coverage, terms, and duration for maintenance of the hardware components of your UVS solution?

Answer: All of hardware required to perform an election with Clear Ballot's software is COTS. This includes scanners, laptop PCs, server PCs, external disk drives (used for backups), etc. Clear Ballot will stipulate the minimum requirements for each hardware component and obtain indicative pricing from a selected set of manufacturers compatible with Clear Ballot's software. This pricing will include equipment pricing, warranty and support options. It will then be the responsibility of CDOS to arrange for the state agency responsible for contract administration to negotiate final hardware pricing and maintenance agreements conditions for the COTS hardware required under this procurement.

As the COTS hardware specifications evolve over time, as they inevitably will, Clear Ballot will provide updates to the equipment specifications. It will be the State's responsibility to update its pricing schedule so that counties will have the latest pricing, terms and conditions when procurements are made.

5. What is your coverage, terms, and duration for licensing of the software components of your UVS solution?

ClearVote offers two pricing models, (1) a perpetual software license purchased in year one with annual maintenance and support fees and (2) a subscription model without the large upfront license cost and with annual payments which include licensing, maintenance and support. Because of the software architecture of ClearVote, pricing can be more in line with county budgets. ClearVote pricing varies depending on the size of the county, so it can be cost efficient for all counties. Remember, one size does NOT fit all, and Clear Ballot has a solution tailored for each county.

6. Are updates and modifications to the UVS because of legislative mandates a part of your support agreement or are they custom enhancements?

Answer: Legislative mandates may have unpredictable costs and therefore, unless *de minimus* as determined by Clear Ballot, will be considered custom enhancements.



7. What is the certification status of each component within your proposed solution? Include a matrix showing the following:

Item	Status
Component Identification	Components have been identified in accordance with Florida examination process.
Federal certification date	None
The federal certification standard currently met (e.g. 2005 VVSG)	None
State certifications	In progress as Central Count
Projected certification date and standard if not currently certified	Q2:14
Projected certification date and standard for a future planned upgraded certification	Q3:14

8. What features of your proposed solution exist to ensure ballot secrecy? Please describe those features.

Answer: Clear Ballot is proposing a central count solution. It is expected that ballots arriving for tabulation in the county’s central count facility will be anonymous and therefore no further secrecy requirements will be necessary. If this assumption is wrong, Clear Ballot will work with CDOS to develop a satisfactory procedure for ensuring ballot secrecy.

9. What is your organizational chain-of-command for escalating problems needing resolution?

Clear Ballot values communication between all members of the organization. On the engineering front, Clear Ballot uses an advanced bug-tracking program, which alerts senior technical members, including CTO Tim Halvorsen of any problems immediately. The senior technical members then immediately connect to discuss the problem and work towards a solution. Issues that arise on the project management front will immediately be brought to the project manager, who will then alert CEO Larry Moore or the Account Manager. This team of three, in addition to the team member who first noticed the problem, will connect immediately to work towards a solution. One of the defining benefits of Clear Ballot is that the organization has kept the team lean to focus the company’s full attention on the project at hand.



10. What purchase options do your company offer (e.g. payment in full upon delivery, financing, leasing)?

ClearVote software payment is due in full upon delivery. However, during the development of ClearEMS, counties using ClearCount will only be required to pay 60% of their license fee, with the remaining 40% due when ClearEMS is certified and available to the county.

Fujitsu offers multiple options, including a leasing program for counties who are already customers and need to add capacity for peak demand periods.

11. What is the maximum number for each of the following items that your Election Management System allows:

- Precincts - Unlimited
- Contests - Unlimited (may require multi-page ballots)
- Candidates - Limited by number of voting positions and paper size
- Political Parties - Unlimited
- Ballot Styles - Unlimited
- Precincts per Ballot Style - Unlimited
- Ballot Styles per Precinct - Unlimited
- Other limitations?

12. What interface capabilities, with the CDOS voter registration system (SCORE), can your Election Management Software provide? Is there a defined extract format for precinct and district definitions, registration statistics, and candidate or contest information that is or may be made compatible with SCORE? What interface data formats are available (e.g. EML, XML, CSV, and ASCII)?

Answer: Clear Ballot has extensive experience and expertise in connecting with external systems. For example, with ClearAudit the PDF files for each voting system manufacturer was parsed to produce a canonical set of ballot definition files. In addition, the formats of the detailed Statement of Votes Cast were parsed for each manufacturer's EMS so that the audit results could be compared with the legacy voting system's results. Accordingly, Clear Ballot views its ability to connect with SCORE – as has been done by at least four voting system vendors – to be of very low risk.

13. What are the security features and capabilities of your proposed system and processes? Include the following areas in your response to this question:

- How do you protect the audit logs (e.g., encryption, hashing)? -
  - See Section 12.0, Req. ID H-1 for details.
- Does your system documentation contain suggested security auditing procedures? If so, please provide.



- Security auditing procedures will be developed and documented in consultation with CDOS and SLI Labs.
- Do you provide an executable application whitelist with digitally signed programs?
  - The server is setup from scratch as an appliance (like a router) and nobody ever logs into it directly. So there are no non-whitelisted applications on the server. When ClearCount is submitted to SLI for certification, this decision will be reviewed.
  - Clear Ballot provides documentation about how to setup and administer the Windows policy settings. These settings provide the ability to both specify and enforce an application white-list.
- How does your system prevent unauthorized, non-whitelisted applications from running?
  - See the answer to the preceding question.
- What specific hardening procedures and standards are your voting devices held to?
  - See the answer to the preceding question. There are no devices other than the client and server computers. The COTS scanner does not use loadable software. The COTS drivers are provided by the scanner manufacturer, and the driver configuration data is setup by the Clear Ballot software and cannot be adjusted externally.
- What database encryption mechanisms are used by your system for data at rest and in transit? Please describe, in detail, all uses of data encryption/decryption in your proposed solution.
  - The ClearVote product is a central count only solution and as a result tabulation data is never transmitted from one location (e.g., a precinct or polling site) to another.
  - At the central count location all the equipment is physically secured by a protected room. The ballot images and their tabulation data are transmitted over a closed local area network contained within the protected room.
  - The election department is responsible for the physical security of both the equipment and any backup data.
- What password features are included in your proposed solution (e.g., complexity, reuse)?
  - Clear Ballot documents recommendations for choosing good passwords and the dangers of reusing a previously used password. Users cannot specify or change their own passwords; that is done by the election administrator. That administrator is expected to use, at a minimum, those recommendations when assigning passwords.



- Is there any remote communication technology associated with your proposed solution? If so, explain.
    - No
  - What processes are you using for source code review and compiler security verification?
    - Clear Ballot uses internal source code review throughout its development process.
    - Clear Ballot currently has no process for verifying the integrity of the compiler once it has been installed. However, during the certification step, extensive comparative functional testing will be done against known results from every manufacturer supported. Finally, the visual capabilities of ClearVote’s tabulation software provide a further check on the integrity of the software.
  - What independent security audits has your proposed system received?
    - None. However, ClearAudit is currently undergoing central count certification in New York State.
14. What post-election audit capabilities are provided by your system and what processes or procedures do you offer to support a post-election audit, including a risk limiting audit? ClearVote was designed with post-election audits in mind, e.g.
- To support risk-limiting audits, i.e. produce a single ballot cast record with a record of votes for every choice on every ballot (we support vote cast record and ability to retrieve the ballot)
  - In addition to cast vote record the unique ballot identifier provides all the info needed to trace/retrieve the physical ballot
  - This has been tested in Arapahoe county
15. To what extent, if any, do the hardware and software products you are proposing to Colorado meet the requirements of Section 508 of the Rehabilitation Act of 1973 and subsequent amendments to that Act?
- Clear Ballot is proposing a central count solution so the requirements do not apply. We intend to provide interfaces to assist organizations selected by CDOS to provide assistive voting equipment. See the “Assistive Voting” section in the Executive Summary.
16. What products or services do you provide in the areas of Voter Education and Voter Outreach? This is an informational question only.

Answer: We anticipate that CDOS will want to lead a stakeholder outreach program during the UVS implementation. In addition to the counties that are not yet participating, we expect that members of the State Legislature, candidates for office, political parties, the media, interest groups and citizens will want to and will expect to hear progress reports on the UVS.



Clear Ballot's unique visualization tools will be instrumental in building excitement and maintaining support for this project. Our experience in building and implementing successful marketing programs will ensure timely and effective communications with all of the stakeholders of a new election system.



## 10.0 Preliminary Project Schedule and Staffing Plan

The following chart sets out a schedule beginning with the award of the contract through certification of General Election results. In some cases the responsibility for particular milestones or tasks is solely with Clear Ballot or CDOS or a County, and in other cases it will be shared responsibility that requires a strong working relationship among the parties.

Description	Dates	Responsible
Contract award	2/6/2014	CDOS
Executed contract	2/28/2014	CDOS-Clear Ballot
Project implementation begins	3/3/2014	CDOS-Clear Ballot
Kick off meeting at CDOS offices in Denver	3/4/2014	CDOS-Clear Ballot
Provide Implementation Project Plan to CDOS	3/28/2014	Clear Ballot
Order Fujitsu equipment	3/10/2014	Clear Ballot
County orders laptops and DHCP router	3/10/2014	County
Laptops and DHCP router received	3/24 – 3/29/2014	County
Delivery Fujitsu scanners to Counties	3/24 – 4/5/2014	Clear Ballot
Train County warehouse staff acceptance testing	4/8 – 4/26/2014	Clear Ballot- County
County performs Fujitsu scanner acceptance testing (*)	4/8 – 4/26/2014	County
County sign off – Fujitsu scanner bill of lading	4/30/2014	County
Train Counties Clear Ballot system @ 8 locations -15 people/class. <i>Each course runs 3-4 days, 3 trainers/class-</i>	4/15 – 5/10/2014	Clear Ballot -3 trainers County/CDOS
County install scanning stations and Clear Ballot servers (*)	4/22 – 5/13/2014	County/Clear Ballot
County runs mock election – test Clear Ballot system (*)	4/22 – 5/13/2014	County/Clear Ballot
Federal ballot mailed – Primary election 6/24/14	5/16/2014	County
County finalizes primary election coding	5/20/2014	County
Ballot proofing	5/20 – 5/22/2014	County
County submit ballot PDFs to Clear Ballot	5/22- 5/24/2014	County/Clear Ballot
County order ballots	5/22 – 5/24/2014	County
County receive ballots from printer	5/25 – 5/29/2014	3 <sup>rd</sup> party printer
Clear Ballot generates and tests BDFs	5/23 – 5/31/2014	Clear Ballot



Description	Dates	Responsible
County downloads & test BDFs (*)	5/26 – 6/7/2013	County/Clear Ballot
County certifies State transmission file – reporting (*)	5/26 – 6/7/2013	County/CDOS
Logic and Accuracy test (*)	6/2 -6/8/2104	County/CDOS/Clear Ballot
County starts processing mail-in ballots (*)	6/9/2014	County/Clear Ballot
Help Desk set-up	6/8- 6/10/2014	County/CDOC/Clear Ballot
Help Desk supports EV and ED voting	6/12- 6/25/2014	County/CDOC/Clear Ballot
Early voting (*)	6/12 – 6/21/2014	County/CDOC
Primary Election (*)	6/24/2014	County/CDOS/Clear Ballot
Deadline for Federal ballot returns	7/2/2014	County/CDOS
Provisional ballot processing (*)	6/24 – 7/8/14	County/CDOS/Clear Ballot
Canvassing complete	7/11/2014	County/CDOS
Certify election results	7/12/2014	County/CDOS



General Election	Dates	Responsible
Fujitsu scanner preventive maintenance (*)	9/2 – 9/17/2014	County
Start General election programing	8/26 /2014	County
Federal ballot mailed – General election	9/20/2014	County
County finalizes general election coding	9/27/214	County
Ballot proofing	9/21 – 9/24/2014	County
County submit ballot PDFs to Clear Ballot	9/24- 9/27/2014	County/Clear Ballot
County order ballots	9/25 – 9/27/2014	County
County receive ballots from printer	9/30 – 10/3/2014	3 <sup>rd</sup> party printer
Clear Ballot generates and tests BDFs	9/26 – 9/30/2014	Clear Ballot
County downloads & test BDFs (*)	9/27 – 10/2/2014	County
County certifies State transmission file – reporting (*)	10/2 – 10/6/2014	County/CDOS
Logic and Accuracy test (*)	10/4 – 10/8/2014	County/CDOS/Clear Ballot
AB ballots mailed	10/13/2014	County
Help Desk set-up	10/17- 10/20/2014	County/CDOC/Clear Ballot
Help Desk supports EV and ED voting	10/20- 11/4/2014	County/CDOC/Clear Ballot
County starts processing mail-in ballots (*)	10/22/2014	County
Early voting (*)	10/20 – 11/2/2014	County/CDOC
General Election (*)	11/4/2014	County/CDOS/Clear Ballot
Deadline for Federal ballot returns	11/12/2014	County/CDOS
Provisional ballot processing (*)	11/4 – 11/18/14	County/CDOS
Canvassing complete	11/21/2014	County/CDOS
Certify election results	11/22/2014	County/CDOS



*Notes*

(\* ) Remote and/or on-site support from the vendor may be required

We are assuming that help desk will be located at the CDOS offices in Denver

Training scope - Training will be provided at County warehouse facilities. Counties will be selected as training sites based on their geographical location.

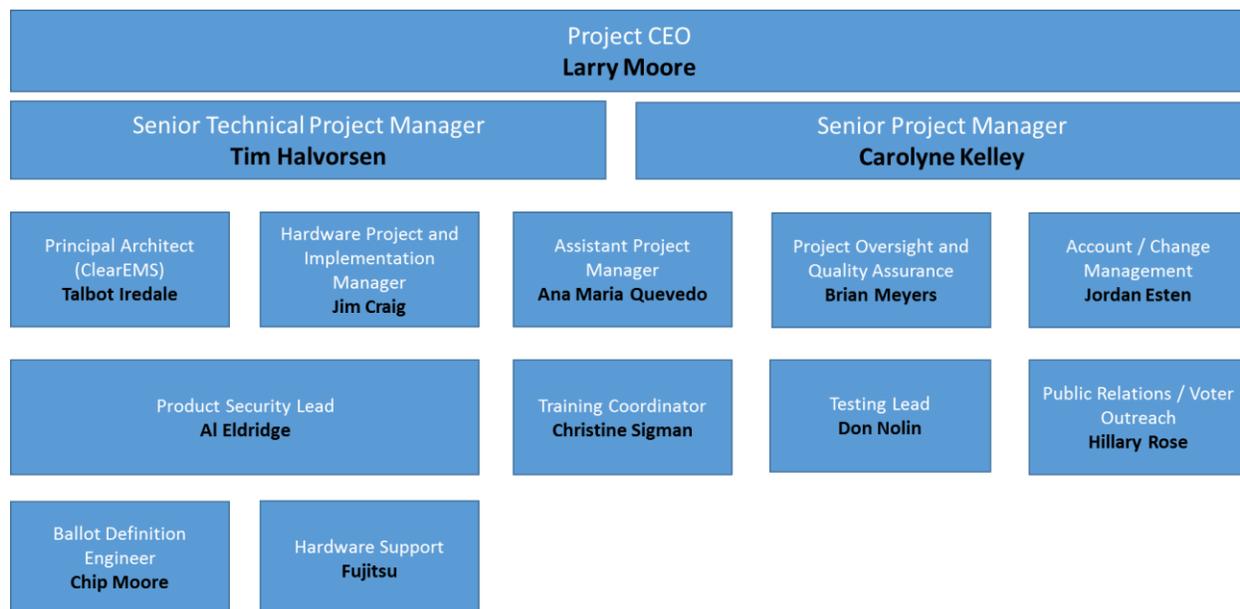
Election support plan - Election Day on-site support should be provided to large Counties. Large counties include: Arapahoe, Adams, Boulder, Denver, Douglas, El Paso, Jefferson, Larimer.



## 11.0 Proposed Staffing

Clear Ballot has experienced and qualified staff that will lead the implementation of this project. The experience gained through many past elections give them the skills, know-how and professionalism to address on the ground issues, implement the solution in a timely fashion, and ensure an error-free election.

The following chart outlines the key individuals who will be working on this project from Clear Ballot. A description of the key team member’s responsibilities for the Colorado Uniform Voting System follows the chart. Resumes and references for each team member on the chart are also included.



Clear Ballot has identified the key personnel who will act as Team Leads during the implementation, training, and support of this project:

### Larry Moore, Project CEO

Larry will provide executive level oversight of the entire organization and personnel across the project. He will ensure that the cross-functional team performs to Clear Ballot’s high standards, complies with all state requirements, and meets all time, budget and quality goals. Larry will work closely with state agencies, county leaders, testing labs and CDOS throughout the entire project.



Larry brings over 25 years of experience as an executive strategic and tactical manager. The focus of his experience has been the development, launch, marketing and implementation of mission critical software products that require broad distribution and where customer support is critical. Larry was a Senior Vice President at IBM and Lotus Development, where he led the launch and customer implementation of Lotus Notes.

Over the past five years, Larry has been involved in over 35 elections, through audit pilots, live recounts, and EAC grants. He worked closely with the Florida Secretary of State, State Legislature, County Election Supervisors, and the State Department of Elections, to institute Florida Statute 101.591, which gave Florida the nation's first independent, automated audit.

### **Carolyn Kelley, Senior Project Manager**

Carolyn has over 25 years in the election industry, and will serve as Clear Ballot's Senior Project Manager for the Colorado Uniform Voting System. Carolyn is a Colorado resident, with extensive knowledge and experience throughout the state. She will be responsible for the execution of all project deliverables and ensuring that the on-going needs of the customers are being met. Carolyn will be responsible for project plan, team resource allocation, and defining the project structure. She will ensure project delivery within budget and timeframes, which have been mutually agreed upon by the CDOS, counties, and Clear Ballot.

Carolyn has been one of the principal project leaders in major election system implementations. She has served as the project manager for a highly successful implementation for the entire State of Nevada, as well as, regional project manager for the State of New York installation. Carolyn has also served in a number of project management capacities across the United States and abroad, including 18 counties in California, York, PA, Snohomish and Pierce County, WA; Basingstoke and Deane, UK; Bernalillo County, NM.

### **Tim Halvorsen, Senior Technical Project Manager**

Tim is the overall leader of technology development and chief architect of Clear Ballot's tabulation and reporting software. He will serve as the Senior Technical Project Manager for the Colorado Uniform Voting System, in charge of all aspects of implementation, testing, development, and customization. Tim will work closely with Clear Ballot's team of engineers, county technical staff, and the CDOS, to ensure the timely delivery of all technical and product aspects of the project. Tim has been the technical project leader for live elections and pilots in over 35 counties in Colorado, Florida, and New York State.

Tim is a proven leader in the software industry as one of a small number of key designers and implementers of Lotus Notes, the initial groupware application to transform business



operations worldwide. Tim served as its CEO as well as CTO and Chief Architect, and managed over 500 engineers. He has taken the security and software from the commercially successful Lotus Notes, to design Clear Ballot's voting system, a next generation improvement on the current industry standard.

### **Talbot Iredale, Principal Architect (ClearEMS)**

Tab is the principal architect of ClearEMS, Clear Ballot's revolutionary new election management system. He is using browser-based architecture to expand the capabilities and ease of use of the election management system for election officials. In addition to designing the system, Tab is responsible for managing the team of engineers that implement and test the product.

During the Colorado project, Tab will work closely with counties and the CDOS to customize ClearEMS to fit the needs of Colorado. During phase two, Tab will be on site to assist counties and the CDOS during the implementation process. Tab is the recognized industry leader in state of the art electronic voting systems programming, with decades of experience developing election management and reporting software across several companies. He was most recently the Director of Software Development for Electronic Systems & Software, and was previously with Premier Election Solutions, Diebold Election Systems and Global Election Systems. He was directly involved with implementing voting system products in several states, and will be a key part of the Colorado implementation.

Tab's 25 years of election experience provides a knowledge resource about the election industry, including election processes, certification processes, and election security, for others in the company.

### **Ana Maria Quevedo, Assistant Project Manager**

Ana will serve as the Assistant Project Manager for the Colorado Uniform Voting System, supporting Clear Ballot's Senior Project Manager. Ana is an expert at identifying customers' needs and will be the eyes and ears on the ground for the Clear Ballot team during the implementation. Ana will work closely with the CDOS and the Clear Ballot training team to develop a training model and timing to best fit state requirements.



Ana is a bilingual expert in the election automation field. She has been a trainer and coordinator with extensive experience implementing voting systems and providing training in Florida, Texas, Nebraska, California and Venezuela.

### **Jim Craig, Technical Hardware Project Manager (Contractor)**

Jim will be the Technical Hardware Project Manager, working closely with the Clear Ballot engineering team, county technical officials, and the CDOS, in relation to Fujitsu's commercial-off-the-shelf scanners. Jim will also be heavily involved with Fujitsu scanner training for the counties. He will provide training expertise on scanners, training the trainers, users, and CDOS officials. Jim will also be heavily involved in hardware and scanner support for all counties in Colorado, by coordinating Fujitsu field engineers across the state and at national headquarters.

Jim has 30 years providing consistent high quality image capture, including providing conversion services to 36 out of the 67 Florida for Florida Clerks of the Courts, plus numerous city and county local governments, and elected offices; school boards, water management districts, Federal corps of engineers.

### **Al Eldridge, Product Security Lead**

Al is leading Clear Ballot's design and development of security systems which have the highest levels of security features and capabilities in the industry. Al works across the Clear Ballot engineering and products teams to ensure the security of all Clear Ballot products. In Colorado, he will also work closely with county technical teams, the CDOS, and other vendors during the integration process, to ensure the success of all election security measures.

Al is one of the leading security experts in the nation, having set the industrial standard for internet security at DEC and Lotus Notes. He is committed to quality improvement of security systems integrated with new architecture.

### **Brian Meyers, Project Oversight and Quality Assurance**

In Colorado, Brian will lead project oversight and quality assurance. Brian will also work closely with Jim Craig and Fujitsu representatives in Colorado and nationally to ensure that scanners are delivered on time during implementation and testing, and are working in



accordance with Clear Ballot, Fujitsu and State of Colorado standards. He has also been involved in over 20 elections with Clear Ballot, overseeing the quality and processes of each.

Brian has extensive experience in project oversight, as an Associate Consultant at L.E.K. Consulting, one of the most distinguished management consulting firms in the world.

### **Jordan Esten, Account / Change Management**

Jordan will be the lead account manager, managing relationships with county Clerks & Recorders and the CDOS. During the initial phase, he will work to educate counties across the state on the transition plan for Clear Ballot. Jordan will also lead the change management structure in Colorado, working closely with all phases and areas of the project. Jordan has been involved in over 20 elections with Clear Ballot, working closely with county and state officials during pre-election and post-election phases of each election.

Jordan was previously an investment banker at Robert W. Baird, and has significant familiarity with project finance activities and extensive experience managing client relationships during lengthy and complicated processes.

***Individual Resumes are set forth in Appendix B.***



## 12.0 UVS System Requirements

**NOTE:** Clear Ballot’s Election Management System is in the last stages of development at the time of this submission. It will be demonstrable in early 2014 and is expected to be certified in Q4 2014. The responses for Req. ID “A” below therefore refer to features and functions that will be in the product upon release.

Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-1	Allow county and state election officials the ability to generate and maintain an administrative database containing the definitions and descriptions of political subdivisions and offices within their jurisdiction.	1	This function will be implemented as either a template or the ability to restore prior elections with political subdivisions and offices only.
Election Creation	A-2	Provide definition for separate ballot styles that reflect different combinations of contests that are included depending on place of residence of the voter or similar administrative criteria.	1	The software allows creation of ballots based on place of residence, party of the voter and filtering by contests for federal only ballots and under 17 years old (e.g. in the case of a primary)
Election Creation	A-3	Provide software capability for the creation of newly defined elections.	1	
Election Creation	A-4	Provide software capability for the retention of previously defined election setups.	1	
Election Creation	A-5	Provide software capability to copy, edit, and delete previously defined elections.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-6	Generate all required master and distributed copies of the voting program in conformance with the definition of the ballot for each voting location and voting device, including devices required to facilitate mail-in voting and voters with disabilities.	1	ClearEMS supports central count tabulation & support for distributed tablet – based ADA devices.
Election Creation	A-7	Provide for all distributed copies of the voting program, resident or installed, in each voting device to include all software modules required to monitor system status and generate machine-level audit reports, to accommodate device control functions performed by voting location officials and maintenance personnel, and to accept and accumulate votes.	1	This requirement appears to be for precinct-based tabulation. Clear Ballot is proposing a central count architecture and support for ADA architectures that print a regular ballot on a Ballot-on-Demand printer.
Election Creation	A-8	Provide for a unified, integrated centralized database that allows global edits by authorized users. <b>Note:</b> Please describe how the system minimizes the need to update a particular data element in multiple locations for a change made to that data element anywhere within the database. For instance, removing a candidate that appears in multiple ballot styles or changing a voting location designation that appears in multiple places in the database.	1	The EMS uses a single database to store all data for a given election.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-9	Provide a test mode which supports testing to validate the correctness of election programming for each voting device and ballot style and ensure that the ballot display corresponds with the installed election program.	1	<p>The ability to generate test data and run an automated L&amp;A test is a function of Clear Ballot's Tabulation and Results modules. Three types of tests are supported:</p> <ul style="list-style-type: none"> <li>• Scanner functionality</li> <li>• Tabulation</li> <li>• Scalability</li> </ul>
Election Creation	A-10	<p>Be able to import electronically from the Secretary of State and counties in an agreed-upon format that contains, at a minimum, the following data:</p> <ol style="list-style-type: none"> <li>a. Full candidate name</li> <li>b. Candidate sequence, title and text of ballot questions, and voting language options</li> <li>c. Office name</li> <li>d. Contest name, including candidate name in case of retention contest</li> <li>e. Maximum number to vote for each office</li> <li>f. Party affiliation</li> <li>g. Number of eligible registered voters at the precinct</li> <li>h. Number of active registered voters at the precinct.</li> </ol>	3	<p>The requirements for this functionality are similar to other import requirements and will be added at no additional cost.</p>



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-11	Be able to export electronically to the Secretary of State and counties in an agreed-upon format that contains, at a minimum, the following information: <ol style="list-style-type: none"> <li>a. Full candidate name</li> <li>b. Office name</li> <li>c. Contest name</li> <li>d. Number of votes for each candidate and ballot question</li> <li>e. Number of votes against each ballot question</li> <li>f. Number of undervotes in each contest</li> <li>g. Number of overvotes in each contest</li> <li>h. Number of people voting by precinct and by party affiliation (if applicable)</li> <li>i. Number of registered voters at the precinct level (by party affiliation, if applicable)</li> </ol>	3	The requirements for this functionality are similar to other import requirements and will be added at no additional cost.
Election Creation	A-12	Allow EMS authorized users the ability to create custom voter instructions that may include images.	1	
Election Creation	A-13	Provide the flexibility to have an election created by an authorized user (vendor, county, state or other third party) and import or export as necessary.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-14	Accommodate multiple languages (English and Spanish required). <b>Note:</b> Please explain the capabilities of your system to handle multiple languages.	1	The basic support for languages exists in the system.  The system allows the user to define the languages required by the election and to define which languages are used by which precincts.
Election Creation	A-15	Allow for a mock election setup and support for public use prior to the initiation of a live election.	1	
Election Creation	A-16	Allow for precinct numbers containing at least 10 digits/characters.	1	
Ballot Creation	A-17	Provide for standard ballot layout prototypes to be edited for ease of election specification.	1	
Ballot Creation	A-18	Provide an authorized user the ability to customize the standard ballot layouts.	1	
Ballot Creation	A-19	Provide software capability for authorized users to create newly defined ballot layouts. The system will be designed so as to facilitate error-free definition of ballot layouts for electronic voting equipment and paper ballot optical scanning equipment. For example, the system should have the capability to report discrepancies between ballot layouts.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Creation	A-20	<p>Allow for creation of two-sided and multi-page ballots.</p> <p><b>Note 1:</b> Please explain how your system handles the creation of multi-page ballots.</p> <p><b>Note 2:</b> Please explain any built-in control your system has for preventing bleed-through ink from erroneously marking votes on both sides of a two-sided ballot.</p>	1	<p>Multi-page ballots are assigned different card IDs.</p> <p>Visual ballot proofing tools</p>
Ballot Creation	A-21	<p>Have the capability to reprogram, download, and reinstall a ballot for an electronic voting device or paper ballot optical scanner.</p> <p><b>Note:</b> Please explain the process and procedure, with time frames, required to reprogram, download, and reinstall a ballot on the voting device in the event that there is a change to a name or contest on the ballot in the final few weeks before an election.</p>	3	<p>This will be added to the system. The system will only download to the central count tabulating system.</p> <p>The procedures to support ballot programming changes, for example, with distributed ADA tablet devices will be developed in concert with the ADA tablet vendor. Clear Ballot has worked with Clemson University, operating under a grant from the EAC, to automatically program tablet devices.</p>



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Creation	A-22	For each election, generate and maintain a contest title and candidate name database and provide for the production or definition of properly formatted ballot layouts for use on paper ballots and electronic voting devices. This database will assist the operator to design and edit ballot layouts for paper ballots and electronic voting devices with a minimum amount of repetitive tasks.	1	
Ballot Creation	A-23	Provide a mechanism for the definition of the ballot, including the definition of the number of allowable choices for each office, contest, measure, and for special voting options such as write-in candidates. <b>Note:</b> Please state your solution's maximum number of potentially active voting positions (arranged to identify party affiliations if a primary election), offices and their associated labels and instructions, candidate names and their associated labels and polling instructions, and issues or measures and their associated text and instructions.	1	There is no limit to active voting positions, candidates, contests, parties or instructions subject to the requirement for readable layouts and that contests do not span sides or cards.  Expected minimum card size is 4" x 6" Maximum card size is 8.5" x 22"
Ballot Creation	A-24	Provide for the retention of previously defined ballot layouts.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Creation	A-25	Provide for the modification of previously defined ballot layouts, subject to additional security requirements, after an election has been defined.	1	
Ballot Creation	A-26	Provide for all voting options and specifications as provided for in the Colorado Revised Statutes, including the requirements for a recall election and instant runoff voting (IRV) (section 1-7-1003, C.R.S.). <b>Note:</b> Ranked Voting Methods, including IRV, are currently features used in local jurisdiction elections and not at the State or County level. However; since counties often conduct elections for local jurisdictions, please explain the capabilities of your system to create and process a ballot that contains one or more contests requiring a ranked voting and tabulation process.	3	IRV will be supported in a future release
Ballot Creation	A-27	Generate sample ballots for each ballot style that will not be accepted or counted by a scanner.	1	
Ballot Creation	A-28	Generate a consolidated sample ballot containing all races, issues and questions.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Creation	A-29	<p>Produce ballot content output for paper ballot printing, with the following capabilities:</p> <ul style="list-style-type: none"> <li>a. Accommodate non-proprietary print-ready format (e.g. PDF).</li> <li>b. Accommodate multiple stub sizes within same election.</li> <li>c. Accommodate multiple stubs on a ballot.</li> <li>d. Accommodate variable paper ballot stub sizes up to three inches.</li> <li>e. Customize paper ballots with sequential numbering and static fields on ballot stubs.</li> <li>f. Handle multiple font features.</li> <li>g. Handle special character sets associated only with non-English languages.</li> </ul> <p><b>Note 1:</b> Please provide your ballot size capabilities and layout options.</p> <p><b>Note 2:</b> Please provide information about your system's font capabilities (e.g. typefaces, sizes, kerning and leading, color, bolding, underscoring, and italics).</p>		<ul style="list-style-type: none"> <li>a. Yes</li> <li>b. Yes</li> <li>c. Yes</li> <li>d. See b</li> <li>e. Sequence numbers on individual ballots are best affixed in a post-printing operation</li> <li>f. Yes</li> <li>g. Yes</li> </ul> <p>Note 1: Ballot size from 4" x 6" to 12" x 22"</p> <p>Note 1: Layout: Portrait or Landscape, multi-column</p> <p>Note 2: Clear Ballot supports all HTML formatting options with full internationalization and support for images.</p>
Ballot Processing	A-30	Output ballot content to an election media device for use in equipment (electronic voting devices, scanners, tabulators, etc.).	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Processing	A-31	<p>Output ballot content to accommodate accessible voting, including adjustable audio and visual output.</p> <p><b>Note:</b> Please detail capacity limits of data fields for accessible voting (e.g. font sizes, display options).</p>	1	<p>Clear Ballot has worked closely with Clemson University to interface its election definition files with the tablet-based accessible voting solution. Clear Ballot's goal is to allow competitive accessible voting devices to plug-and-play with its EMS.</p> <p>Font sizes, display options, text-to-speech options are set by the accessible voting vendor.</p>
Ballot Processing	A-32	<p>Allow authorized users to electronically adjudicate ballots to reflect voter intent, while retaining the originally marked ballot image.</p> <p><b>Note:</b> Please explain the process of ballot adjudication using your system.</p>	1	<p>Unreadable ballots (ballots that cannot be automatically adjudicated) can be reviewed by a human and have their adjudication stored in the electronic database to contribute to vote totals. At no time is the original image modified.</p> <p>The process of adjudication is highly visual and includes: 1) orienting the ballot image so that it is readable and, henceforth, always properly displayed, 2) entering the precinct ID and, if necessary split detail to properly present the contests that appear on the ballot style of the unreadable ballot, 3) voting the ballot and 4) saving the results in the database.</p>



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-33	Report vote tally results by individual voting device. <b>Note:</b> For the purposes of this RFP, the Vote Results Reporting requirements are shown as part of the EMS. Some vendors may have a reporting module that is considered separate from their EMS and, if so, can explain that in their response to this requirement.	3	Vote totals subtotaled by Contest or Choice or Precinct or Counter Group or Ballot Style, but not Tabulator. This would require customization of the tabulation software.  (Our reporting module does not require the EMS to function)
Vote Results Reporting	A-34	Report vote tally results by contest jurisdiction-wide.	1	
Vote Results Reporting	A-35	Report vote tally results by contest by precinct.	1	
Vote Results Reporting	A-36	Report the total votes for each candidate for each contest, as well as by candidate by precinct.	1	
Vote Results Reporting	A-37	Report vote tally results by voting location.	3	Vote totals subtotaled by Contest or Choice or Precinct or Counter Group or Ballot Style, but not Polling Location. This would require customization of the tabulation software.
Vote Results Reporting	A-38	Report vote tally results by ballot source (e.g. Early Vote, Election Day, Mail, and Provisional).	1	
Vote Results Reporting	A-39	Report votes by ballot style.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-40	Report votes by ballot batch.	3	We do not presently report on vote totals by batch. This would require customization of the reporting module.
Vote Results Reporting	A-41	Report votes by ballot style within precinct.	1	
Vote Results Reporting	A-42	Report undervotes and overvotes in each contest, with the option to exclude from reports.	1 & 3	Reporting under and overvotes for a contest (and a candidate/choice) is a feature.  Excluding under and overvotes is not currently a feature but could be easily added.
Vote Results Reporting	A-43	Provide the capability to report ranked-choice voting results.	3	Tabulator does not currently support RCV, but this would not be difficult to add if required.
Vote Results Reporting	A-44	Report a summary of results in addition to the detailed Statement of Votes Cast reports.	1	The SOVC can be produced at up to three levels of detail – 1) Contest & Choice, 2) Contest, Choice & Precinct, and 3) Contest, Choice and Counter Group.  In addition Clear Ballot does have a “Contests” report that shows winners and margin of victory.
Vote Results Reporting	A-45	Report certified write-in candidate results in each contest with the ability to exclude from reports.	3	Do not currently have a method of distinguishing and reporting qualified write-ins (as opposed to all write-ins). But we plan to develop this feature in the next 6 months.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-46	Import election night voter registration counts for Active and Total voters and report percent turnout relevant to vote tally for both Active and Total registrations.	3	We have no Voter Registration import facility, but would be willing to work with VR vendors to import their data.
Vote Results Reporting	A-47	Report and export each report in PDF, XLS, TXT, EML, or CSV formats. <b>Note:</b> Please identify the formats available in your system.	2	We can export in PDF, XLS, CSV, TXT formats, but have no EML export as this specification is still in development.
Vote Results Reporting	A-48	Provide for Zero reports to be printed prior to first upload of voting results.	1	
Vote Results Reporting	A-49	Allow the capability to select any combination of reports to be run and logged at any time permissible.	3	
Vote Results Reporting	A-50	Provide customization of report headers (e.g. “Unofficial” or “Final Unofficial”), contest labels and print layout. <b>Note:</b> Please explain any character limitations imposed by your system on labeling, reporting or exporting.	1	Customization of report headers and footers is a standard feature of browsers
Vote Results Reporting	A-51	Include creation date, time, and page numbers on all reports.	1	



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-52	<p>When the total number of votes cast by voters on a specific ballot style/precinct or with a particular voting method or at a particular voting location is less than the currently allowed threshold of ten, the vote tallies for all such subgroups are to be reported in aggregations such that each category always contains at least ten, per section 1-8-308(b), C.R.S. This is also applicable to property owner ballots.</p> <p><b>Note:</b> Please explain how your system will accommodate this requirement for all reports to maintain voter privacy.</p>	3	We not currently support this requirement. This functionality could be added relatively easily as a post-processing step between the time a SQL query is executed and the time the report is displayed in an HTML browser. Clear Ballot requires input as to who would set the thresholds and the text message that would be displayed I the event the ballot count was less than the legal threshold.
Vote Results Reporting	A-53	<p>Allow the minimum threshold number of votes to be changed if the legal requirement changes. This requirement refers to section 1-8-308(b), C.R.S.</p>	3	See A-52
Vote Results Reporting	A-54	<p>Be able to include or exclude property owner ballot results from reports.</p>	3	We not currently support this requirement, but could, based on requirements.
Vote Results Reporting	A-55	<p>Provide an option to suppress a race or candidate from all reports, when either is withdrawn from the ballot.</p>	3	We not currently have this feature, but could easily, based on requirements.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-56	Provide an easily readable method to identify the candidate(s)/measure with the most votes in each contest. If more than one winner is possible, identify all winners. <b>Note:</b> Your system should have this feature as an option, so not used on partial results reports.	1	
Vote Results Reporting	A-57	Have the capability to report political party designation for each candidate for partisan elections.	1	
Import/Export	A-58	Import/export ballot information and voter registration information files to be exchanged from/to Colorado's centralized statewide voter registration database (SCORE).	3	The requirements for this functionality are similar to other import requirements and will be added at no additional cost.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Import/Export	A-59	<p>Display detailed upload status for each portable vote storage media unit (e.g. memory card) by polling location and counting center.</p> <p><b>Note:</b> For example, users should be able to visually confirm an exact match between the physical portable vote storage media unit being uploaded and the unit identified by the EMS. (e.g. If an authorized user is uploading "Polling Location A, Memory Card 01", onscreen the user should be able to visually confirm that the system is uploading "Polling Location A, Memory Card 01." Please explain how your solution handles this scenario.</p>	3	ClearCount™ is a central count system and does not use memory cards.
Import/Export	A-60	<p>Prevent the upload of wrong or duplicate portable vote storage media units.</p> <p><b>Note:</b> Please explain your system's safeguards against errant or multiple uploads from portable vote storage media units and how to correct the problem if it should happen.</p>	3	See A-59
Import/Export	A-61	<p>Produce and print a list, at any time in the process, showing which portable vote storage media units have and which have not been uploaded.</p>	3	See A-59



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Import/Export	A-62	Save a report to a local or portable drive for transfer to a networked computer in a non-proprietary format.	1	
Import/Export	A-63	Display error messages and instructions to recover during importing and exporting operations.	3	See A-59
Data Storage and Processing	A-64	Maintain election data in a secure environment. <b>Note:</b> Please describe how EMS data is stored and secured from unauthorized access and/or manipulation.	1	Tabulation results are stored in a networked database, accessible only from authorized client machines. Access to specific functionality is protected by access controls.
Data Storage and Processing	A-65	Provide the capability for counties to upload, from election media, externally created election setup data.	1	Currently restricted to items such as district lists and precinct lists in pre-specified formats.
Data Storage and Processing	A-66	Provide a means to upload vote count results to the EMS from vote collection/tabulation equipment.	3	See A-59 – The assumption on ADA devices is that they produce a ballot that is tabulated in the normal manner
Data Storage and Processing	A-67	Provide statistics of batches (e.g. number of ballots in each batch, number of batches pending, number of batches deleted, and number of batches saved). <b>Note:</b> Does your system have a batch size and/or number of batches limitation and, if so, what is it?	1	No limitation on # ballots in a batch/box.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Data Storage and Processing	A-68	Have the ability to delete saved ballot batches from the system. <b>Note:</b> Please explain how your system manages batch accountability identification.	1	All deletions of ballot batches are logged and only can be performed by authorized persons.  Batch accountability is done using industry standard methods from the scanning industry. This involves a pre-printed bar-coded “target” card that automatically names the batch and assigns a unique ID to every ballot image.
Data Storage and Processing	A-69	Have data backup capabilities. <b>Note:</b> Please explain any system data backup capabilities and protocols within your system.	1	The entire election database (containing all tabulation results) and the ballot images can be backed up to an external hard drive using the “Backup” feature.  Included in the Backup are all audit log entries for both the election as well as non-election specific log entries (e.g. failed login attempts)
Data Storage and Processing	A-70	Have redundancy capabilities. <b>Note:</b> Please explain any general and real time redundancy features.	1	Data Storage: Redundancy is achieved by the ability to backup each election to removable media.  Processing: During scanning there can be multiple ScanStation machines scanning and tabulating ballots in parallel.



Section B is deliberately left blank because ClearCount™ is not a polling location ballot scanning and tabulation system. See Section C instead. ClearCount does provide for support for 3<sup>rd</sup> party accessible voting devices that can print a normal ballot, which is submitted to a scanner for tabulation. Please find responses in Section D to accessible voting.

SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM B – POLLING LOCATION BALLOT SCANNING AND TABULATION EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Scanning	B-1	<p>Accurately capture votes from paper ballots.</p> <p><b>Note 1:</b> Please indicate the speed of your polling location ballot scanner.</p> <p><b>Note 2:</b> Please describe how acceptance/rejection criteria for ballot marks are established for your polling location scanner.</p> <p><b>Note 3:</b> Please explain how your polling location scanner is impacted by ballots containing fold creases or other irregularities.</p>	5	
Scanning	B-2	Notify the voter or an authorized user of errors before accepting the ballot.	5	
Scanning	B-3	Accept overvoted ballots, upon review, in a manner that allows the voter to review each case of an overvote, one case at a time, and to provide clearly understandable options to further review the ballot, or cast the ballot without further review if the voter chooses not to ask for a replacement ballot.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM B – POLLING LOCATION BALLOT SCANNING AND TABULATION EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Scanning	B-4	Accept undervoted ballots, upon review, in a manner that allows the voter to review each case of an undervote, one case at a time, and to provide clearly understandable options to further review the ballot, or cast the ballot without further review.	5	
Scanning	B-5	Handle, and reliably account for, multi-page ballots, including when the pages become separated from each other. Count votes regardless of the sequence that pages are scanned or if some pages are not scanned. <b>Note:</b> Please explain how your system reliably accounts for multi-page ballots, including when the pages become separated from each other.	5	.
Scanning	B-6	Display a Public Counter, which shows the number of ballot pages processed.	5	
Scanning	B-7	Display a Protective Counter showing the count of all ballot pages processed on the equipment, which is not reset after an election.	5	
Scanning	B-8	Accept ballots in any of the four possible orientations.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM B – POLLING LOCATION BALLOT SCANNING AND TABULATION EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Hardware	B-9	Display the unit serial number(s) of tabulation devices both physically and within any applicable software, logs, or reports.	5	
Tabulation	B-10	Have the ability to write cast vote records to an election media device during operation that the EMS can disallow from being tabulated prior to the close of polls on Election Day. <b>Note:</b> Please describe the security your equipment provides for ensuring media is not removed until procedurally authorized.	5	
Tabulation	B-11	Provide a secure means to upload vote count results to the EMS.	5	
Error Handling	B-12	Identify and reject ballots that are not valid. <b>Note:</b> Please explain how your system identifies ballots that have been printed on nonstandard paper or on a home printer.	5	
Transportability	B-13	Be easily transported by one person. <b>Note:</b> Describe the transportability characteristics of your equipment (e.g. weight, width, height, wheels).	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM B – POLLING LOCATION BALLOT SCANNING AND TABULATION EQUIPMENT</b>				
<b>Requirement Sub- Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Supplies	B-14	Provide dust-and-moisture-proof covers for transportation and storage purposes. <b>Note:</b> Please describe your equipment covers.	5	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Scanning	C-1	<p>Accurately scan paper ballots into identifiable and locatable batches.</p> <p><b>Note 1:</b> Please indicate the speed of your central location ballot scanner.</p> <p><b>Note 2:</b> Please explain how your central location scanner is impacted by ballots containing fold creases or other irregularities.</p>	1	<p>Note 1: There are three models of central count scanner designed to fit the budget of large and small counties. Speeds range from 60 – 130 pages per minute (manufacturer’s spec). Refer to the specifications of scanning performance elsewhere in this response</p> <p>Note 2: Scanner can handle fold creases extremely well, based on sensors within the scanner.</p>
Scanning	C-2	<p>Be capable of establishing single ballot batches.</p>	1	<p>A single ballot cast vote record can be produced that also allows for the physical retrieval of a given ballot. These two features enable an efficient risk-limiting-audit to be performed.</p>
Scanning	C-3	<p>Retain an electronic image of each voted paper ballot in a non-proprietary format.</p> <p><b>Note 1:</b> Please describe the format(s) you offer for ballot images. Also describe how your system handles adequate resolution of saved images relative to the paper original.</p> <p><b>Note 2:</b> Please describe how each electronic image will retain its relationship to the voted paper ballot and any reduction in resolution or compression used before retention of the image.</p>	1	<p>Note 1: High resolution images. JPEG with minimal compression, 200 dpi, 8-bit greyscale.</p> <p>Note 2: Images are stored in the same order that they are stored in the ballot storage boxes. There is no change to the resolution of the image once the ballot is scanned.</p>



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Scanning	C-4	Allow the authorized user to verify ballot quantities counted to ballots provided by batch prior to saving to the system.	3	Scanning to the database is done in continuous mode. A very efficient “delete batch” capability exists to back out a batch that does not match the expected ballot count.
Scanning	C-5	Allow the authorized user to verify ballot quantities counted to ballots provided by batch after saving to the system.	1	
Scanning	C-6	Allow the authorized user to rerun a batch of ballots, if necessary, without impacting results to date.	1	
Scanning	C-7	Have the ability to logically delete (not physically) saved ballot batches from the system. <b>Note:</b> Please explain how your system manages batch accountability identification.	1	All deletions of ballot batches are logged and only can be performed by authorized persons.
Scanning	C-8	Identify and segregate ballots or ballot images with overvotes for adjudication. <b>Note:</b> Please explain how your central count solution allows for physically locating a specific ballot in a batch of ballots.	1	Each ballot image is given a unique ID. Ballots coming off the scanner are placed in a storage box without changing their order thus preserving image-to-ballot traceability. The scanner can be used to conduct a high speed count down to the ballot in question.
Scanning	C-9	Identify and segregate ballots or ballot images with write-ins for adjudication.	1	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Scanning	C-10	Identify and segregate, for adjudication, ballots or ballot images that cannot be read.	1	
Scanning	C-11	Identify and segregate, for adjudication, ballots or ballot images that are read as blank.	3	Clear Ballot does not currently have this feature, but could easily, based on requirements.
Scanning	C-12	Provide information to an authorized user as to why a ballot was segregated.	1	
Scanning	C-13	Assign a unique number to the batch of ballots and verify that the count is zero upon beginning a scan and giving a total number of ballot pages processed at the close of the batch scan.	1	
Scanning	C-14	Handle scanning of both front and back page of a ballot when data is contained on back of ballot page.	1	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Scanning	C-15	Handle and reliably account for multi-page ballots, including when the pages become separated from each other. Count votes regardless of the sequence that pages are scanned or if some pages are not scanned. <b>Note:</b> Please explain how your system reliably accounts for multi-page ballots when pages are out of order or when all ballot pages are not returned, including when the pages become separated from each other.	1	Multi-page ballots are given a different ballot style ID.  There is no requirement that the ballot sets be voted together. With any form of vote-by-mail, any voting system would need to handle incomplete ballot sets in a multi-card ballot.
Scanning	C-16	Accept ballots in any of the four possible orientations.	1	If the ballot length is less than the throat size of the scanner, Clear Ballot will support landscape mode as well – 8 orientations.
Scanning	C-17	Display publicly the number of ballot pages processed.	1	
Scanning	C-18	Display a Protective counter showing the count of all ballot pages processed on the equipment, which is not reset after an election.	1	
Scanning	C-19	Allow the option to disable or enable the review of undervoted ballots.	1	Review (and adjudication) of any ballot is protected by access control.



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Hardware	C-20	Display the unit serial number(s) of tabulation devices both physically and within any applicable software, logs, or reports.	1	
Tabulation	C-21	Accurately capture votes marked by a voter or a ballot marking device on a paper ballot without adjusting machine thresholds. <b>Note 1:</b> Please characterize the accuracy of your central ballot scanner in capturing voter intent. <b>Note 2:</b> Please describe how acceptance/rejection criteria for ballot marks are established for your central location scanner.	1	Note 1: Our system has been tested in many pilots and has had our results compared against other certified voting systems, with extremely high levels of correlation.  Note 2: Criteria for processing ballot marks are embedded into the software, and not adjustable (by design).
Tabulation	C-22	Account for overvotes in every contest where overvotes occur. <b>Note:</b> Please explain how overvotes are handled by your system.	1	Overvotes are reported at a contest level and when a candidate “participates” in an overvote. In both cases the election identity is preserved. Overvotes are presented as a separate subtotal, and displayed in a separate category of visualization.
Tabulation	C-23	Account for undervotes in every contest where undervotes occur. <b>Note:</b> Please explain how undervotes are handled by your system.	1	Undervotes are reported at a contest level and when a candidate “participates” in an undervote. In both cases the election identity is preserved. Undervotes are presented as a separate subtotal, and displayed in a separate category of visualization.



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Tabulation	C-24	<p>Have the ability to write cast vote records to an election media device during operation that the EMS can disallow from being tabulated prior to the close of polls on Election Day.</p> <p><b>Note:</b> Please describe the security your equipment provides for ensuring media is not removed until procedurally authorized.</p>	1	<p>Access controls prevent display of tabulation results prior to the close of polls on Election Day.</p> <p>As a central count system, there are no media that can be removed. A backup to an external drive is accomplished using standard protocols to dismount a drive.</p>
Tabulation	C-25	<p>Provide a secure means to upload vote count results to the EMS.</p>	3	<p>ClearCount™ is a central count system; all tabulated results are immediately stored into the database and are available for reports the instant the last ballot is processed.</p>
Error Handling	C-26	<p>Identify and reject ballots that are not valid.</p> <p><b>Note:</b> Please explain how your system identifies ballots that have been printed on nonstandard paper or on a home printer.</p>	1	<p>Ballots that do not conform to the specifications for timing marks and invalid code channels are rejected.</p> <p>With the growing use of ballot-on-demand printers and ballots returned by UOCAVA voters, this requirement best solved procedurally.</p>



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
C – CENTRAL BALLOT SCANNING AND TABULATION EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Error Handling	C-27	<p>Continue ballot scanning while electronically or physically segregating and sorting ballots to user-identified categories that need additional attention.</p> <p><b>Note 1:</b> Please describe how your system handles these situations:</p> <ol style="list-style-type: none"> <li>Ballots are unreadable by the scanner.</li> <li>Notifying an authorized user whether a ballot has been scanned successfully or not.</li> <li>Notifying an authorized user that a ballot has been previously scanned.</li> <li>Identifies where a voter marked the box for a write-in but did not write in a name, and where the voter did not mark the box but did enter a write-in candidate on the line.</li> </ol> <p><b>Note 2:</b> Please describe how the relationship of paper ballot to ballot scan to cast vote record will be maintained when this physical or electronic sorting or segregation is taking place.</p>	1?	<p>Note 1a: Unreadable ballots are instantly recognized and electronically segregated. They can be adjudicated by authorized personnel while scanning continues.</p> <p>Note 1b: An authorized user can instantly see any unreadable ballots that have not been human adjudicated.</p> <p>Note 1c: We do not perform this behavior unless there is a unique serial number on the ballot which, according to recent Colorado case law, violates voter privacy.</p> <p>Note 1d: We can display images for ovals in this scenario.</p> <p>Note 2: Ballot images IDs have a 1-to-1 correspondence to physical ballots. If the ballots are stored in the same order that they come off the scanner, it is trivial to retrieve a ballot given its image ID.</p>



ClearCount™ is designed to interface with a 3<sup>rd</sup> party manufacturer of accessible voting equipment through an export of the election definition files that permit the accessible manufacturer to format the screen of accessible device as required, including the display of the ballot style appropriate to the vote’s address. It is expected that the manufacturer of the accessible device can print out a ballot that can be tabulated on a Ballot-on-Demand printer.

SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot	D-1	Display choices for the contests, (candidates and measures) of the election for each ballot style.	5	
Ballot	D-2	When activated for the voter, display prominent ballot identifiers, including precinct, party, and similar identifiers, in order to give the voter the opportunity to verify that they will be voting on the correct ballot.	5	
Ballot	D-3	Record each voter’s candidate and measure selections as the ballot is cast.  <b>Note:</b> This requirement is not applicable to certain ballot marking devices that depend on a produced paper ballot being processed and tabulated elsewhere.	5	
Ballot	D-4	Have a public counter that displays the number of ballots cast or marked, depending on the functionality of the electronic voting equipment.	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT</b>				
<b>Requirement Sub- Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Ballot	D-5	Make clear to the voter how to cast a ballot or print a marked ballot, such that the voter has minimal risk of doing so accidentally, but when the voter intends to cast the ballot or complete the ballot marking session, the action can be easily performed.	5	
Ballot	D-6	Assure that the ballot marking device automatically returns to a state such the next voter cannot learn how the previous voter voted, once the paper ballot is printed.	5	
Ballot	D-7	Allow voters, including voters with disabilities, to be able to review their write-in input to the ballot interface, edit that input, and confirm that the edits meet their intent.  <b>Note:</b> Please describe how voters, including voters with disabilities, will be able to review their write-in input to the ballot interface, edit that input, and confirm that the edits meet their intent.	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT</b>				
<b>Requirement Sub- Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Ballot	D-8	Provide a method by which voters with disabilities can choose the language of the ballot visually and through the audio interface.  <b>Note:</b> Please describe how your electronic voting units provide a method by which voters with disabilities can choose the language of the ballot visually and through the audio interface.	5	
Hardware	D-9	Display a Protective counter showing the count of all ballots processed on the equipment, which is not reset after an election.	5	
Hardware	D-10	Display the unit serial number(s) of tabulation devices both physically and within any applicable software, logs, or reports.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Accessibility	D-11	<p>Provide electronic voting equipment designed to allow for installation in a voting location accommodating access by voters with disabilities in compliance with the Americans with Disabilities Act (ADA), HAVA and all applicable federal and state laws that address accessibility to voting for persons with disabilities.</p> <p><b>Note:</b> Please describe how your system’s features comply with HAVA, ADA and other Federal and State laws that require accessibility for voters with a variety of disabilities, including visual or cognitive impairments. Identify the EAC standards your system meets.</p>	5	
Accessibility	D-12	<p>Meet the standards for accessible voting systems listed in section 1-5-704, C.R.S. The size of a ballot position and the font size of candidate information must be in accordance with Colorado Election Rules.</p> <p><b>Note:</b> Please stipulate the maximum available positions on the voting device, based on such size of a ballot position and the font size of candidate information, to be used for an election.</p>	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT</b>				
<b>Requirement Sub- Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Accessibility	D-13	<p>Include a privacy enclosure or voting booth that contains the electronic voting device(s) designated for voters with disabilities and complies with the Americans with Disabilities Act Accessibility Guidelines (ADAAG) providing sufficient dimensions to allow access to voters who use wheelchairs.</p> <p><b>Note:</b> Please explain how your voting device complies with all forward and side reach requirements of the ADA and ADAAG.</p>	5	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
D – ELECTRONIC VOTING EQUIPMENT**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Accessibility	D-14	<p>Include electronic voting units adaptable for voters with disabilities either through adjustability of the device or the voting booth or inclusion of an auxiliary device. The auxiliary device should also be lightweight and removable making it portable for use on a voter's lap or provide an alternative solution.</p> <p><b>Note 1:</b> Please describe your accessible alternative input devices. List such devices and explain the operation of each device and how it accommodates voters with disabilities.</p> <p><b>Note 2:</b> Please explain how your proposed system accommodates voters with visual disabilities. Include with the description how portions of the displayed ballot may be intensified and/or enhanced, in contrast and font size and then restored to the initial size.</p> <p><b>Note 3:</b> Please explain how your electronic voting device can be repositioned to accommodate a variety of voters with disabilities. Include any information about the ability of the voter to independently adjust the device.</p> <p><b>Note 4:</b> Is the voting screen glare-free regardless of positioning?</p> <p><b>Note 5:</b> Please explain any magnifying capacity of the electronic voting device.</p> <p><b>Note 6:</b> If your electronic voting unit uses an activation card, please explain how it may be used easily by voters, including voters with disabilities.</p> <p><b>Note 7:</b> Please explain how your electronic voting unit adequately provides privacy for a voter who uses a wheelchair.</p> <p><b>Note 8:</b> Please explain how a voter</p>	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Accessibility	D-15	<p>Allow for importing of audio ballot content from an outside source (e.g. candidates or pre-recorded audio.).</p> <p><b>Note:</b> Please explain the process and procedure, with time frames, required to re-program the audio read-back on the voting device in the event that there is a change to a name or contest on the ballot in the final few weeks before an election.</p>	5	
Accessibility	D-16	<p>Allow for a voter to change volume and/or speed of an audio ballot.</p> <p><b>Note:</b> Explain how the voter can fast-forward through instructions and measure text.</p>	5	
Accessibility	D-17	<p>Provide for audio instructions for the ballot and a mechanism for voters with visual impairments to cast a ballot or print a marked ballot, either on the voting unit itself or on a separate device designed for this purpose. The process shall imitate the process used by sighted voters with the exception of the audio interface.</p>	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Accessibility	D-18	Support an enlarged-print ballot screen image for voters with visual impairments. Following the casting of a vote or the printing of a marked ballot, the machine must reset to its initial state to accommodate the next voter.	5	
Accessibility	D-19	Accommodate voters regardless of their ability to read.	5	
Accessibility	D-20	Allow for connection of personal auxiliary devices, such as sip/puff or jelly switch devices. <b>Note:</b> Please describe such capabilities provided by your system.	5	
Ease of Use	D-21	Be designed so that actions performed by the voter, such as making a vote selection or changing a vote, are easily understood so that errors are prevented to the maximum extent possible, and so that recovery from an erroneous action is facilitated by the features of the system prior to casting the ballot or printing a marked ballot. <b>Note:</b> Please explain how your proposed system facilitates voter actions prior to casting a ballot or printing a marked ballot.	5	
Ease of Use	D-22	Accommodate font sizes that are adjustable for ease of sight.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ease of Use	D-23	During the voting process or prior to casting the vote, display (visually or using audio, as applicable) a summary indicating the choices made or skipped.	5	
Ease of Use	D-24	Allow the voter the ability to change a selection until the voter is satisfied with the choice at any time prior to the final casting of a ballot or printing a marked ballot. <b>Note:</b> Please explain here how your proposed voting system allows the voter to review and/or modify his/her selections before final casting of the vote or printing of the marked ballot.	5	
Ease of Use	D-25	Provide a method for the voter to confirm the choices before casting the ballot or printing a marked ballot, signifying to the voter that casting or printing the ballot is irrevocable and directing the voter to confirm his/her intention to cast or print the ballot, and shall further signify to the voter that the ballot has been cast or printed after the voting session is complete..	5	
Ease of Use	D-26	Provide a means to demonstrate the operation of the electronic voting device to the voters.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ease of Use	D-27	<p>Disallow a voter to overvote a contest and will enable the voter to correct the selections.</p> <p><b>Note:</b> Please explain how your proposed system shall not allow a voter to overvote a contest and enable the voter to correct his or her selections.</p>	5	
Ease of Use	D-28	<p>Warn voters that they have undervoted a contest and permit them to correct or accept the undervote.</p> <p><b>Note:</b> Please explain here how your proposed system shall warn voters that they have undervoted a contest and permit them to correct or accept the undervote.</p>	5	
Ease of Use	D-29	<p>Provide a means of recording the votes cast for write-in candidates for any contest that allows write-in candidates. This capability shall allow the entry of as many names of candidates as the voter is entitled to select for each contest in compliance with Colorado's Election Law.</p> <p><b>Note:</b> Please explain how your proposed system allows for write-in votes for any authorized contest.</p>	5	
Ease of Use	D-30	<p>During election setup, provide an option to provide the voter with a list of certified write-in candidates.</p>	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ease of Use	D-31	Provide a screen response that will allow a voter to request a list of certified write-ins if the election setup provided that option.	5	
Ease of Use	D-32	Allow authorized users the ability to modify the voter instructions for an electronic or audio voting session.	5	
Ease of Use	D-33	Provide an authorized user an ability to reset screen calibration, including between uses in an election. <b>Note:</b> Please explain if your electronic voting equipment logs such calibration and produces any warnings when calibration needs to be reset.	5	
Uninterrupted Operation	D-34	Provide, in case of power interruption, a means for voting operations to continue. This feature shall consist of either an uninterruptible power supply (UPS) or other means to keep electronic voting equipment active. <b>Note:</b> Please specify how your system will provide notice of power loss or low-battery state, so that election judges or election officials can take appropriate steps.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Uninterrupted Operation	D-35	Provide for continuous uninterrupted operation for a minimum of two hours in case of power failure. <b>Note:</b> Please specify how long your system will operate without an external power source and under what conditions. If the device does not have a battery backup, what size of UPS will be required to maintain operation for two hours?	5	
Uninterrupted Operation	D-36	In the event of the failure of an electronic voting unit, retain a record of all votes cast prior to the failure. <b>Note:</b> Please explain how your system retains and reports votes cast in the event of a loss of power.	5	
Voter Verifiable Paper Trail	D-37	Include, with each voting device, the functionality of a Voter-Verified Paper Audit Trail (VVPAT) that meets all Federal and State Certification requirements. <b>Note 1:</b> Please explain how your proposed voting device complies with this requirement. <b>Note 2:</b> Explain if your proposed system has an alternate means of counting a non-ballot type of VVPAT for audit purposes. The alternative means can include but is not limited to the availability of bar codes and readers for the VVPAT.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM D – ELECTRONIC VOTING EQUIPMENT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Voter Verifiable Paper Trail	D-38	Provide a means for voters with disabilities (visually impaired or unable to read) to review the VVPAT.  <b>Note:</b> The review of the VVPAT by voters that cannot see or read the VVPAT requires a feature that enables read-back from the physical VVPAT.	5	
Voter Verifiable Paper Trail	D-39	Have the capability, if proposing a VVPAT solution that is not an official marked ballot, for the print on the VVPAT to be large enough and dark enough for voters to verify and for election judges to read easily during a recount.  <b>Note:</b> Please explain the type of paper used to record the VVPAT and the characteristics of the paper impression to ensure ease of reading and fade resistance. For instance; 18 point font, bold and double spaced would be preferred.	5	
Transportability	D-40	Be easily transported.  <b>Note:</b> Describe the transportability characteristics of your electronic voting equipment (e.g. weight, width, height, wheels).	5	



The Clear Ballot Group is not responding to this requirement.

<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM</b>				
<b>E – AUTOMATED BALLOT ENVELOPE SCANNING AND SIGNATURE VERIFICATION</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Mail Ballot Envelope Processing	E-1	<p>Provide hardware with the capability to scan mail ballot envelopes and perform the following functions:</p> <ul style="list-style-type: none"> <li>a. Scan and capture voter ID barcode</li> <li>b. Scan and capture envelope and signature images</li> <li>c. Log envelope as received</li> <li>d. Endorse (customizable) &amp; date/time stamp envelope</li> <li>e. Separate envelopes that may need manual intervention</li> </ul> <p><b>Note 1:</b> Please provide information about your ballot envelope sorting equipment, including what versions are available for counties with various volumes of envelopes. Can your equipment perform all these above functions in a single pass? If not, please explain the number of passes required and the actions taken on each pass.</p> <p><b>Note 2:</b> Please indicate if your solution has the capability, assuming envelope and ballot are designed properly, to determine the ballot style of the enclosed ballot.</p>	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM E – AUTOMATED BALLOT ENVELOPE SCANNING AND SIGNATURE VERIFICATION				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Mail Ballot Envelope Processing	E-2	Be capable of generating an output file, with voter ID and voter’s envelope signature, to be matched with SCORE voter registration data and used in the Automated Signature Verification process.	5	
Mail Ballot Envelope Processing	E-3	Be capable of updating the mail ballot envelope output file with status values (e.g. received, accepted, rejected) so that the SCORE system can use the output file to update voter registration records. <b>Note:</b> Please provide a list of code values your system assigns for ballot envelope processing status.	5	
Mail Ballot Envelope Processing	E-4	Allow an authorized user the ability to update the disposition code for an envelope (e.g. from “challenged” to “good”).	5	
Mail Ballot Envelope Processing	E-5	Be configurable for ballot envelope size and design.	5	
Mail Ballot Envelope Processing	E-6	Be configurable for thickness detection.	5	
Mail Ballot Envelope Processing	E-7	Automatically separate envelopes when voter ID required into a separate stack or identify them electronically for easy separation.	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM E – AUTOMATED BALLOT ENVELOPE SCANNING AND SIGNATURE VERIFICATION</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Mail Ballot Envelope Processing	E-8	<p>Have an option for sort/pass with the ability to customize sorting definition (e.g. style, precinct, district, unaccepted envelope, signature discrepancy and no signature).</p> <p><b>Note:</b> Please explain the sort options available in your system.</p>	5	
Mail Ballot Envelope Processing	E-9	<p>Provide a high-volume solution for counties with a large voter population.</p> <p><b>Note 1:</b> Please specify the throughput capacity on your high-volume envelope processor.</p> <p><b>Note 2:</b> County size by registered voter population is as follows:            Large = Over 25,000 voters            Medium = 10,000 – 25,000 voters            Small = Fewer than 10,000 voters</p>	5	
Mail Ballot Envelope Processing	E-10	<p>Provide a low-volume solution for counties with a small or medium voter population (see E-9 requirement Note 2).</p> <p><b>Note:</b> Please specify the throughput capacity on your low-volume envelope processor.</p>	5	
Mail Ballot Envelope Processing	E-11	<p>Provide configurable reports for tray id, tray count and pieces status.</p>	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM E – AUTOMATED BALLOT ENVELOPE SCANNING AND SIGNATURE VERIFICATION				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Automated Signature Verification	E-12	Provide tested/proven Automated Signature Verification (ASV) software, which can automatically compare a voter’s ballot envelope signature with the SCORE voter registration signature based on a customer selected confidence determination.  <b>Note:</b> Please provide any information about your system that might be an alternative to manual removal of the signature security tab on mail ballot envelopes.	5	
Automated Signature Verification	E-13	Be configurable to meet or exceed a state established acceptance threshold for signature acceptance.	5	
Automated Signature Verification	E-14	Provide user activity log records that include full description of all human intervention during the ASV process.	5	
Automated Signature Verification	E-15	Provide an audit function to verify the accuracy of machine accepted signatures.	5	
Automated Signature Verification	E-16	Extract returned ballot envelopes for manual review when the signature does not meet the acceptance threshold level, is unreadable, or is missing.	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM E – AUTOMATED BALLOT ENVELOPE SCANNING AND SIGNATURE VERIFICATION</b>				
<b>Requirement Sub- Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Automated Signature Verification	E-17	<p>Create a record when the signature does not meet the acceptance threshold level. This record will be used to generate a letter when the signature cannot be manually verified.</p> <p><b>Note:</b> Please explain your process for creating and using these records.</p>	5	



The Clear Ballot Group is not responding to this requirement.

SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM F – MAIL BALLOT TRACKING				
Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Mail Ballot Tracking	F-1	Track a mail ballot envelope from the time it is prepared for the voter in an elections office or by a vendor, through every stage of the U.S. Postal Service mail delivery system.	5	
Mail Ballot Tracking	F-2	Track a mail ballot through stages of the ballot acceptance process after return to the County by the voter. <b>Note:</b> Explain which processes within the Elections Office can be tracked by your system after the ballot envelope is received in that office.	5	
Mail Ballot Tracking	F-3	Provide sufficient report capability for the election officials to ascertain the status of any and all mail ballots in each stage of the mail ballot process tracked by the system.	5	
Mail Ballot Tracking	F-4	Provide a system whereby voters can “opt in” to receive messages about their ballot’s status in the process.	5	
Mail Ballot Tracking	F-5	Provide a system whereby voters who have chosen to “opt in” to receive messages about their ballot’s status in the process can choose to “opt out”.	5	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM F – MAIL BALLOT TRACKING</b>				
<b>Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Mail Ballot Tracking	F-6	Provide a messaging system that delivers messages via a website to voters who have requested notification about their ballot's status.	5	
Mail Ballot Tracking	F-7	Provide a messaging system that delivers messages via email to voters who have requested notification about their ballot's status.	5	
Mail Ballot Tracking	F-8	Provide a messaging system that delivers messages via text messaging to voters who have requested notification about their ballot's status.	5	
Mail Ballot Tracking	F-9	Have sufficient capacity to provide the same level of service to as few as one or as many as 64 counties at the same time. (Estimate up to 4 million records if all counties are participating.)	5	
Mail Ballot Tracking	F-10	Be able to utilize all email and text messaging vendor systems in use in Colorado.	5	
Mail Ballot Tracking	F-11	Provide each individual county the ability to personalize messages to its voters based on its elections setup, processes, etc.	5	



SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM G – VENDOR TRAINING & SUPPORT				
Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Hardware & Software Support	G-1	Include availability of vendor support personnel to assist in hardware and software installation and setup onsite.	1	On-site installation support is available at the rate specified in Appendix C.
Hardware & Software Support	G-2	Include availability of vendor support personnel to assist in hardware and software installation and setup from a remote help desk.	1	
Training	G-3	Include availability of vendor supported onsite training personnel to train CDOS and County users.	1	On-site training support is available at the rate specified in Appendix C
Training	G-4	Include availability of self-study user training via the Internet or electronic media.	1	
Voting Period Support	G-5	Provide 24-hour available technical support for all system components beginning sixty days prior to an election and continuing until the completion of the official canvass (generally twenty days after an election).  <b>Note:</b> Please describe your capability to provide extended support, beyond twenty days after and election, for circumstances such as a recount.	1	In circumstances such as a recount, Clear Ballot can provide extended remote and / or onsite support at the rate specified in Appendix C



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM G – VENDOR TRAINING &amp; SUPPORT</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Hardware Parts and Supplies	G-6	<p>Include hardware solutions for the UVS that are supported by a supply chain contingency plan.</p> <p><b>Note:</b> Please provide an explanation of your supply chain contingency planning. The intent of this requirement is to assess the risk to Colorado of one or more of your suppliers not being able to provide needed components. Identify the depth of your supply chain (e.g. one, two, or more suppliers deep).</p>	1	<p>One of the strengths of the system is that all of the hardware required is COTS and easily obtainable from various retailers, preventing the reliance on one vendor. If a county is unable to source a specific model, the county can substitute hardware of a different model that also meets the specifications</p> <p>Clear Ballot will work with Fujitsu to ensure that there appropriate scanning options are available. Fujitsu current controls over 60% of the market for commercial scanners in the United States and has expressed its support for Clear Ballot. Should this relationship be terminated, Clear Ballot will incorporate additional scanning models into its system</p>



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM G – VENDOR TRAINING &amp; SUPPORT</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Hardware Parts and Supplies	G-7	Make equipment parts and supplies available through December 31, 2020.	1	Clear Ballot uses entirely COTS hardware. It is expected that many of the components used will be discontinued before December 31, 2020. Clear Ballot will test and request certification for new equipment as older equipment reaches the end of its lifecycle, ensuring that the system hardware continues to improve as the technology improves.
Hardware Parts and Supplies	G-8	Not require royalty fees, user fees, or other charges or limitations on the printing of ballots designed or printed on vendor devices. Similarly, no fee or limitation shall be placed on any electronic file, report or representation of the vote produced by vendor devices or software.	1	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM H – MISCELLANEOUS REQUIREMENTS</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
	H-1	<p>Store sufficient data in an unalterable system audit log file to allow the auditing of all operations related to election setup, ballot creation, ballot tabulation, results consolidation and report generation. The audit log file shall contain:</p> <ul style="list-style-type: none"> <li>a. An identification of the program and version being run.</li> <li>b. An identification of the election file being used.</li> <li>c. A record of all options entered by the operator, including operator ID.</li> <li>d. A record of all actions performed by a subsystem of the system.</li> <li>e. A record of all tabulation and consolidation input.</li> <li>f. Audit log records that are created and maintained in the sequence in which operations were performed, with date/time stamps.</li> </ul>	1	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Auditing	H-1	<p><b>Note 1:</b> Please explain what audit trail techniques and audit reports are incorporated in your proposed system.</p> <p><b>Note 2:</b> Please provide a list of all audit log files, the file location within the voting system, and the procedures to navigate to and retrieve them from the voting system.</p> <p><b>Note 3:</b> Please describe steps needed to protect the audit logs from possible unintentional or intentional erasure or alteration.</p> <p><b>Note 4:</b> Please provide a sample set of audit reports (system logs, etc.) from an election in a county with 200,000 or more registered voters (not necessarily in Colorado).</p>	1	<p>Note 1: Logs are maintained in the election tabulation database, and are not modifiable by any user.</p> <p>Note 2: Auditability is provided through two logs: 1) the Web Event Log which records all non-Election specific events (e.g. failed logins) and 2) the Election Database Log, which records all Election specific events (e.g. Tabulation events, report access, etc.). Logs can be easily displayed by a browser client connected to the election database server. Full-text filtering is supported.</p> <p>Note 3: Logs are stored on a protected server that uses access controls and remote connections to provide security. When an Election database is backed up, all election specific records are saved with the backup; all non-election specific records that happened between the creation time of the election database and the backup time are also saved in the backup. A “Delete Election” operation removes all election specific log data from the repository. A “Restore Election” operation restores all election specific log data to the repository.</p> <p>Note 4: Log files can be exported to an external file in CSV format for analysis.</p> <p style="text-align: right;"><b>(CF Sample formats to be supplied)</b></p>



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Auditing	H-2	Accommodate random audits on electronic voting and tabulation devices.	5	Clear Ballot does not supply electronic voting devices.
Auditing	H-3	Accommodate random audits on paper vote capture and tabulation devices.	1	Single ballot cast vote records can be produced,
Auditing	H-4	Log all activity on voting equipment including: when turned on/off, any errors, power failure, power restoration, when an error occurred and when an error was resolved.	1	A central count system should be plugged into a UPS and gracefully shut down in the event of a power failure.
Auditing	H-5	Run real time reports, when needed.	1	
Auditing	H-6	Run post-election diagnostics on all auditable equipment in a manner that does not endanger the integrity of the election record. <b>Note:</b> Please explain your system's post-election diagnostic capabilities.	1	Clear Ballot does not supply proprietary equipment. Any diagnostics performed on COTs computers will, by design, not affect the integrity of the election record or, for that matter, any user-created file on the computer.
Auditing	H-7	Provide for adequate information to facilitate a recount under Colorado law.	1	Clear Ballot has participated in a double recount in El Paso County. The pilot showed the Clear Ballot system easily identify and segregate physically the ballots to be recounted under Colorado law.



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Auditing	H-8	Have a permanent paper record of each vote for audit purposes.	1	The paper ballot provides a permanent record of each vote.  Electronic voting is not supported.
Auditing	H-9	Support a Risk Limiting Audit, as defined in section 1-7-515(5)(b), C.R.S. sufficient to audit the functionality of electronic and paper vote capture as well as vote tabulation devices.	1	ClearVote™ was designed to support a Risk Limiting Audit from the start. Note 1: Administrators have the ability to: a. Efficiently examine, correct and record changes to the cast vote record vote targets that, in the judgment of the Canvassing Board, were misclassified (i.e. Votes that should be undervotes, hesitation marks that should be overvotes, and undervotes with marginal marks that should be declared votes) by ClearVote™. b. Export a Ballot Manifest showing the physical location of every ballot cast on paper in the election. c. Export (i.e. commit) a single ballot Cast Vote Record for every ballot in the entire election showing the votes for selected contests.



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM H – MISCELLANEOUS REQUIREMENTS</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Auditing	H-9	<p><b>Note 1:</b> Please describe how your proposed system supports the execution of a Risk Limiting Audit.</p> <p><b>Note 2:</b> Does your solution place unique identifying numbers on ballots as they are scanned?</p> <p><b>Note 3:</b> Section 1-7-515, C.R.S. stated that Colorado must begin risk-limiting audits in 2014, but was revised in the 2013 session to extend the start of the requirement to 2017.</p>	1	<p>Note 1: Retrieve a physical ballot corresponding to a randomly selected entry in the Ballot Manifest or the Cast Vote Record.</p> <p>Note 2: Each ballot is named with a unique ballot identifier; the physical paper ballots are not marked in any way.</p> <p>Note 3: Clear Ballot successfully demonstrated a single-ballot risk-limiting audit in Arapahoe County in Nov. 2013.</p>
Auditing	H-10	Incorporate a real time clock as part of the system hardware and all audit log record entries shall include a date/time stamp.	1	
Auditing	H-11	Use a real time clock that will continue to run during a power loss.	1	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Auditing	H-12	<p>Print audit reports on the standard system hardcopy output device when the following conditions are met:</p> <ul style="list-style-type: none"> <li>a. The generation of an audit trail report does not interfere with the production of other output reports.</li> <li>b. The entries can be identified so as to facilitate their recognition, segregation and retention.</li> <li>c. The physical security of the audit record entries can be ensured.</li> </ul>	1	
Auditing	H-13	<p>Create audit records during the election definition and ballot preparation phases showing completion of the baseline ballot layouts and any modifications to them, a description of the modifications and a date/time stamp.</p>	1	See Section A
Auditing	H-14	<p>Create audit records during the pre-election phase that include electronic and manual data entered and maintained by election personnel, election definitions, instances of all final ballot layouts and the ballot preparation edit event log.</p>	1	See Section A



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM H – MISCELLANEOUS REQUIREMENTS</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Auditing	H-15	Create audit records prior to the initiation of ballot counting to verify hardware and software status. These particular audit records shall include the identification of the software release, the identification of the election to be processed and the results of hardware and software diagnostic tests.	1	See Section A



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

Requirement Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Auditing	H-16	<p>Create in-process audit records containing data documenting system operation during diagnostic routines and any machine generated error and exception messages. Examples of these audit records include:</p> <ul style="list-style-type: none"> <li>a. System startup diagnostic and status messages.</li> <li>b. Checks that pre-count reports show zeroes.</li> <li>c. The source and disposition of system interrupts resulting in entry into exception handling routines.</li> <li>d. All messages generated by exception handlers.</li> <li>e. The identification code and number of occurrences for each hardware and software error or failure.</li> <li>f. All operator actions.</li> <li>g. Notification of system login or access errors, file access errors and physical violations of security.</li> <li>h. Other exception events such as power failures, failure of critical hardware components, data transmission errors, and other types of operating anomalies.</li> </ul>	1	



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM H – MISCELLANEOUS REQUIREMENTS</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Auditing	H-17	Provide an in-process audit report, for post-election use, consisting of data containing a record when each vote is initiated and each ballot is cast.	1	The data is recorded and displayed in the Ballot Provenance block on each ballot image showing the adjudication. Included in this block are the BallotID (which maps to its physical location), the date and time the ballot was scanned and tabulated, and everything ClearVote knows about the ballot.
Auditing	H-18	Print reports necessary to assist election officials in performing a manual count as required by Colorado election law and rules.  <b>Note 1:</b> Please explain how your proposed system can create the reports necessary to allow election officials to perform and validate a manual count.  <b>Note 2:</b> Please explain how, in the case of a recount, the election can be reconstructed ballot by ballot, while still maintaining voter privacy.	1	(To be supplied)
Auditing	H-19	Record audit log entries onto durable non-volatile storage.	1	
Auditing	H-20	Export audit logs in formats suitable for use by elections officials and the public including common electronic formats (PDF, Excel, CSV, TXT, EML).	2	Support export of all formats except EML.



<b>SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM H – MISCELLANEOUS REQUIREMENTS</b>				
<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Certification	H-21	<p>Be certified or certifiable by the EAC, another state, or Colorado.</p> <p><b>Note 1:</b> If not certified, please explain.</p> <p><b>Note 2:</b> See section 1-5-601.5, C.R.S. for Colorado voting system certification compliance with federal regulations. RFP section 5.3.11 has a question on certification status of vendor proposed solutions.</p>	1	Not yet certified by the EAC, but in the process of being certified by NY.
Testing  <b>WIP</b>	H-22	<p>Be configurable so as to be capable of performing the following functions on all system hardware/software, in compliance with current Colorado statutes and rules:</p> <ul style="list-style-type: none"> <li>a. Hardware test</li> <li>b. Logic and Accuracy Test</li> <li>c. Post-Election Audit</li> <li>d. Pre-Recount Logic and Accuracy Test</li> <li>e. And capable of performing the Colorado Risk Limiting Audit commencing no later than 2017.</li> </ul>	1	<p>Notes</p> <ul style="list-style-type: none"> <li>a. All computing and scanning equipment routinely performs diagnostic tests upon system boot.</li> <li>b. L&amp;A tests will initially be performed according to past procedures. Once ClearVote™ is certified, L&amp;A procedures will become easier as scanner functionality can be tested with a single card and tabulation functionality can be tested automatically with machine marked ballot images with a known Statement of Votes Cast.</li> <li>c. Extensive capabilities exist to support a Post-Election Audit.</li> <li>d. See b above.</li> <li>e. See H-9 above</li> </ul>



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Testing	H-23	Allow authorized user creation of scripted simulation Logic and Accuracy tests with various patterns (e.g. 1,2,3 or 1,1,1 or 1,2,3,4,5...). <b>Note:</b> Please explain how your system allows for pre-determined simulation for creating test ballots and electronic voting equipment test input.	3	This is a feature Clear Ballot will be adding at no cost.  Note: Electronic voting is not supported.
Testing WIP	H-24	Have the capability to test ballot layouts to verify the allowable number of votes for a contest or question and the combinations of voting patterns permitted or required by the using jurisdiction.	1	
Testing	H-25	Provide capability to permit diagnostic testing of all the major components within each electronic vote capture device.	5	Electronic voting is not supported.
Testing	H-26	Ensure non-contamination of voting data through tests of all data paths and memory locations to be used in actual vote recording.	1	It has been our experience that legacy voting systems allow for violations of “referential integrity” especially to manual edits to the election database. All writes to the database support referential integrity.
Testing	H-27	Provide evidence in an audit record that test data has been expunged.	1	



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Testing	H-28	Allow the ability to load and test audio ballots in electronic vote capture equipment.	5	
Testing	H-29	Provide the ability to print all necessary reports for proofing the results of logic and accuracy testing.	1	
Security	H-30	<p>Provide an environment whereby all databases and data are maintained with provisions for operational security, access control and auditability.</p> <p><b>Note 1:</b> Please describe the authentication protocols for access to the EMS database and your system’s processes for providing operational security and auditability.</p> <p><b>Note 2:</b> System security must not obstruct authorized access to event or audit logs, and printing or exporting of reports.</p>	1	Note 1: Authentication is performed using usernames/passwords, with no passwords ever being transmitted “in the clear” on the network. Auditability is provided through two logs: 1) the Web Event Log which records all non-Election specific events (e.g. failed logins) and 2) the Election Event Log, which records all Election specific events (e.g. Tabulation events, report access, etc.)
Security	H-31	Require two factor authentication for access to the EMS and all tabulation equipment. This means an authorized user will need a physical device (e.g. token, card) and something memorized (e.g. password) to access the software or equipment.	1	This feature, if required, is supported by purchasing COTS laptops equipped with a fingerprint authentication feature.



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Security	H-32	<p>Allow tamper evident seals to be placed on all equipment doors, openings, and data access points such that unauthorized access is either prevented or clearly indicated by the damage to or destruction of a seal.</p> <p><b>Note:</b> Please describe the security offered by your proposed system relating to tamper evident seal placements.</p>	1	<p>As a central count system, physical security is assumed.</p> <p>Clear Ballot has designed a COTS lockable case for each piece of equipment (laptops, scanners, network equipment, etc)</p> <p>During storage, each piece of equipment can be secured in a locked container and further secured with a tamper-evident seal.</p>
Security	H-33	<p>Allow all access points to equipment to be visible and subject to oversight of seals, unless the access point is behind doors or a cover. Access points that are not visible should also accommodate tamper evident seals.</p>	3	<p>See H-32.</p> <p>As a central count system, physical security is assumed.</p>
Security	H-34	<p>Report unauthorized modifications to audit data or audit logs.</p> <p><b>Note:</b> Please explain your system's capabilities to restrict user authorizations and access rights for creating, reading, modifying, and deleting audit data or logs.</p>	1	<p>Audit logs cannot be modified.</p> <p>See H30 above</p>
Security	H-35	<p>Allow for installation and auditing of a Trusted Build per Colorado Election Rules.</p>	3	<p>Once Clear Ballot's software is certified, a Trusted Build will be supplied at no additional cost.</p>



**SYSTEM REQUIREMENTS TABLE for the COLORADO UNIFORM VOTING SYSTEM  
H – MISCELLANEOUS REQUIREMENTS**

<b>Requirement Sub-Category</b>	<b>Req. ID</b>	<b>UVS Requirement (The System will ...)</b>	<b>Response Code</b>	<b>Vendor Response</b>
Documentation	H-36	Include a clear set of documented instructions for election judges to set up voting equipment. These instructions should be modifiable by county personnel.	1	
Documentation	H-37	Include documented instructions for troubleshooting any voting equipment issues that may arise.	1	
Documentation	H-38	Include a complete set of User and Technical documentation.	1	
Documentation	H-39	Include current certification documentation and VSTL and/or state test reports.	?	(To be supplied)



**APPENDIX A - GAP ANALYSIS**

Response Code Legend

- AA. Feature will be added at no cost
- BB. Feature will be added; cost is in Cost Proposal
- CC. Feature requested is supported in a different way

Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-10	<p>Be able to import electronically from the Secretary of State and counties in an agreed-upon format that contains, at a minimum, the following data:</p> <ul style="list-style-type: none"> <li>i. Full candidate name</li> <li>j. Candidate sequence, title and text of ballot questions, and voting language options</li> <li>k. Office name</li> <li>l. Contest name, including candidate name in case of retention contest</li> <li>m. Maximum number to vote for each office</li> <li>n. Party affiliation</li> <li>o. Number of eligible registered voters at the precinct</li> <li>p. Number of active registered voters at the precinct.</li> </ul>	<p>3</p> <p>AA</p>	<p>The requirements for this functionality are similar to other import requirements and will be added at no additional cost.</p>



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Election Creation	A-11	<p>Be able to export electronically to the Secretary of State and counties in an agreed-upon format that contains, at a minimum, the following information:</p> <ul style="list-style-type: none"> <li>j. Full candidate name</li> <li>k. Office name</li> <li>l. Contest name</li> <li>m. Number of votes for each candidate and ballot question</li> <li>n. Number of votes against each ballot question</li> <li>o. Number of undervotes in each contest</li> <li>p. Number of overvotes in each contest</li> <li>q. Number of people voting by precinct and by party affiliation (if applicable)</li> <li>r. Number of registered voters at the precinct level (by party affiliation, if applicable)</li> </ul>	<p>3 AA</p>	<p>The requirements for this functionality are similar to other import requirements and will be added at no additional cost.</p>
Ballot Creation	A-21	<p>Have the capability to reprogram, download, and reinstall a ballot for an electronic voting device or paper ballot optical scanner.</p> <p><b>Note:</b> Please explain the process and procedure, with time frames, required to reprogram, download, and reinstall a ballot on the voting device in the event that there is a change to a name or contest on the ballot in the final few weeks before an election.</p>	<p>2 AA</p>	<p>This will be added to the system. The system will only download to the central count tabulating system.</p> <p>The procedures to support ballot programming changes, for example, with distributed ADA tablet devices will be developed in concert with the ADA tablet vendor. Clear Ballot has worked with Clemson University, operating under a grant from the EAC, to program tablet devices.</p>



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Ballot Creation	A-26	<p>Provide for all voting options and specifications as provided for in the Colorado Revised Statutes, including the requirements for a recall election and instant runoff voting (IRV) (section 1-7-1003, C.R.S.).</p> <p><b>Note:</b> Ranked Voting Methods, including IRV, are currently features used in local jurisdiction elections and not at the State or County level. However; since counties often conduct elections for local jurisdictions, please explain the capabilities of your system to create and process a ballot that contains one or more contests requiring a ranked voting and tabulation process.</p>	3  AA	IRV will be supported in a future release
Vote Results Reporting	A-46	<p>Import election night voter registration counts for Active and Total voters and report percent turnout relevant to vote tally for both Active and Total registrations.</p>	3  AA	The requirements for this functionality are similar to other import requirements and will be added at no additional cost.
Vote Results Reporting	A-47	<p>Report and export each report in either PDF, XLS, TXT, EML, or CSV formats.</p> <p><b>Note:</b> Please identify the formats available in your system.</p>	2  BB	We can export in PDF, XLS, CSV, TXT formats. 3 <sup>rd</sup> party EML export utilities are readily available.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-49	Allow the capability to select any combination of reports to be run and logged at any time permissible.	3 AA	Batch reporting for state-required reports can be added at no development cost. Certification costs are estimated in the Cost Proposal.  A reporting capability as described will be added at no cost in Version 2.0 of ClearVote.
Vote Results Reporting	A-52	When the total number of votes cast by voters on a specific ballot style/precinct or with a particular voting method or at a particular voting location is less than the currently allowed threshold of ten, the vote tallies for all such subgroups are to be reported in aggregations such that each category always contains at least ten, per section 1-8-308(b), C.R.S.  This is also applicable to property owner ballots.  <b>Note:</b> Please explain how your system will accommodate this requirement for all reports to maintain voter privacy.	3	We do not currently support this requirement, but could, based on requirements for how aggregations are to be performed.  This functionality could be added relatively easily as a post-processing step between the time a SQL query is executed and the time the report is displayed in an HTML browser. Clear Ballot requires input as to who (county or state) would set the thresholds and the text message that would be displayed in the event the ballot count was less than the legal threshold.
Vote Results Reporting	A-53	Allow the minimum threshold number of votes to be changed if the legal requirement changes. This requirement refers to section 1-8-308(b), C.R.S.	3 AA	See A-52  Requires input from CDOS



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Vote Results Reporting	A-54	Be able to include or exclude property owner ballot results from reports.	3 AA	We not currently support this requirement, but could, based on requirements.  Support for this feature will be added at no cost.
Vote Results Reporting	A-55	Provide an option to suppress a race or candidate from all reports, when either is withdrawn from the ballot.	3 AA	We not currently have this feature, but could easily, based on requirements.  Support for this feature will be added at no cost.
Import/Export	A-58	Import/export ballot information and voter registration information files to be exchanged from/to Colorado's centralized statewide voter registration database (SCORE).	3 AA	The requirements for this functionality are similar to other import requirements and will be added at no additional cost.
Scanning	C-4	Allow the authorized user to verify ballot quantities counted to ballots provided by batch prior to saving to the system.	3 CC	Scanning to the database is done in continuous mode. A very efficient "delete batch" capability exists to back out a batch that does not match the expected ballot count.
Scanning	C-11	Identify and segregate, for adjudication, ballots or ballot images that are read as blank.	3 AA	Clear Ballot does not currently have this feature, but will add it at no charge.
Auditing	H-2	Accommodate random audits on electronic voting and tabulation devices.	3	Clear Ballot does not supply electronic voting devices.
Auditing	H-4	Log all activity on voting equipment including: when turned on/off, any errors, power failure, power restoration, when an error occurred and when an error was resolved.	2	A central count system should be plugged into a UPS and gracefully shut down in the event of a power failure.  COTS hardware does not typically record power failures.



Sub-Category	Req. ID	UVS Requirement (The System will ...)	Response Code	Vendor Response
Auditing	H-20	Export audit logs in formats suitable for use by elections officials and the public including common electronic formats (PDF, Excel, CSV, TXT, EML).	1 and 5	Support export of all formats except EML.  ClearVote has no functionality that requires an EML export. All other formats can be sent by email as an attachment.
Certification	H-21	Be certified or certifiable by the EAC, another state, or Colorado. <b>Note 1:</b> If not certified, please explain. <b>Note 2:</b> See section 1-5-601.5, C.R.S. for Colorado voting system certification compliance with federal regulations. RFP section 5.3.11 has a question on certification status of vendor proposed solutions.	3	Not yet certified by the EAC, but in the process of being certified as a central count tabulation system by New York State.
Security	H-33	Allow all access points to equipment to be visible and subject to oversight of seals, unless the access point is behind doors or a cover. Access points that are not visible should also accommodate tamper evident seals.	3  CC	See H-32.  As a central count system, physical security is assumed.
Security	H-35	Allow for installation and auditing of a Trusted Build per Colorado Election Rules.	3	Once Clear Ballot's software is certified, a Trusted Build will be supplied at no additional cost.



## APPENDIX B - SUPPLEMENTARY MATERIAL

### A. Resumes

#### Larry V. Moore

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#### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Provides oversight on the overall organization and personnel across the team. Ensures that the cross-functional team performs to Clear Ballot high standards, complies with all state requirements, and meets all time, budget and quality goals. Partners closely with state agencies, testing firms and CDOS through the certification process and the entire project.

#### SUMMARY

Executive strategic and tactical manager, with over 25 years' experience in the development, launch, marketing and implementation of mission critical software products that require broad distribution and where customer support is critical.

Election Experience: Demonstration of Risk Limiting Audit in El Paso County, CO (April 2013); First single ballot cast vote record at Risk Limiting Audit in Arapahoe County, CO (November 2013); Audit of a recall in El Paso County (September 2013); Participated in the recount election in El Paso County (November 2013).

Oversaw more than 35 full election pilots of a post-election election audit system from 2009-2013 in Florida, Connecticut, New York, and Colorado conducted with Premier, ES&S Unity, ES&S ElectionWare, Dominion, Sequoia and Hart Intercivic technology.

Designed the overall technical approach to the nation's first automated, independent audit system, designed and tested algorithms to accurately adjudicate voter intent, created the concept of MatchPoints to accurately assess the accuracy of certified voting systems, designed report layouts to identify and diagnose discrepancies between reported and audited results. Larry provided oversight and direction to Election Assistance Commission (EAC) grants for the states of Colorado and New York ([NYSBOE Post Election Audit Report](#)).

#### EXECUTIVE MANAGEMENT & INNOVATION:

2009- **CLEAR BALLOT GROUP**  
present *Founder and CEO*  
MA

Boston,

- The company was founded to provide a new class of tools to election officials to lower the cost and improve the speed, accuracy and transparency of elections
  - Software conceptualization, design and development



- Business development
- Legislative and regulatory liaison – to achieve passage of the nation’s first automated, independent audit law. Oversaw the successful implementation of rules and procedures necessary for county deployment
- Project management to oversee the pilots
- Finance and administration

2006- **TEGO INC.**

2008 *Vice President of Marketing and Strategy*

- Company produces high capacity RFID chips for primary use in aerospace and medicine.
- Established strategic relationships with Boeing and Airbus

2003- **THINGMAGIC**

2006 *Vice President of Marketing and Strategy*

- Company developed RFID readers
- Established strategic relationships with Intel, Zebra Technologies (RFID printers) and Avery Dennison
- Product management for the first credit card sized UHF RFID reader

2001- **SAILING**

- 2002
- Joined a team for an around the world race for 7 one design boats (cancelled due to the economy)
  - Trained from March to October 2001, then with 7 people sailed a 67 foot racing boat from San Francisco to Plymouth, England ‘round Cape Horn.

1997- **CEO OF VENTURE BACKED COMPANIES**

2000 **SOURCEGATE (1999-2000):** raised \$11 million to design and develop ad-supported tools to enable internet service providers to offer free online access to their customers

**BRIGHT TIGER (1997-1998):** raised \$6 million to develop a software approach to load-balancing for internet service providers (ISPs). Company purchased by Allaire

1986- **IBM & LOTUS DEVELOPMENT CORPORATION**

1997 *Senior Vice President (IBM) and Senior Vice President of Emerging Applications and General Manager (Lotus Development)*

Cambridge, MA

- Led Lotus Notes from its launch in 1989 to 1991, and was the key figure responsible for the commercial success of Lotus Notes

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**REFERENCES:**

See Confidential References Document

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**EDUCATION**

**GEORGETOWN UNIVERSITY , M.S., ECONOMETRICS**

Washington, DC

**GEORGETOWN UNIVERSITY , B.S., BUSINESS ADMINISTRATION**



## Tim Halvorsen

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Senior Technical Manager. Overall leader of technology development and chief architect of Clear Ballot's tabulation and reporting software. Works closely with county and state officials in Colorado as needed, to ensure the success of the ClearVote technology.

### SUMMARY

A continually successful innovator and proven leader in the software industry, Mr. Halvorsen was one of a small number of key designers and implementers of Lotus Notes, the initial groupware application to transform business operations worldwide. Mr. Halvorsen served as the CEO, CTO and Chief Architect of Iris Associates which was the inventor and creator of the Lotus Notes product, and has managed over 500 engineers. Iris Associates and Lotus Development merged in 1994. The combined company further merged with IBM in 1995.

### EXPERIENCE

- 2011- present     **CLEAR BALLOT GROUP**     Boston, MA  
*Chief Technology Officer*
- Responsible for product design and development activities
  - Designed and developed Clear Ballot tabulation and visualization software, which were employed in an 18 month pilot project across 7 counties and 30 elections to inform product development, design, integration and implementation, such that Clear Ballot already has been selected by 2 states to pilot an innovative post-election audit system
- 2001-2011     **SELF-EMPLOYED**     Boston, MA  
*Patent Lawsuit Expert Witness*
- Served as expert witness on a number of patent lawsuits



- 1984 - **IRIS ASSOCIATES, LOTUS NOTES/DOMINO**  
2001 **Chief Technology Officer** Westford, MA
- Co-founder of Iris Associates (with Ray Ozzie, Leonard Kawell Jr., and Steven Beckhardt) that developed Lotus Notes, and which was purchased by Lotus in 1994. By 2000, Lotus Notes/Domino had more than 56 million users worldwide and today its descendant IBM Notes has over 260 million users.
- 1977- **DIGITAL EQUIPMENT CORPORATION (DEC)**  
1984 **Project Leader and Architect** Nashua, NH
- Virtual Memory System (VMS), DECnet/VMS, and the VMS VAXStation.
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#### REFERENCES

See Confidential References Document

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#### EDUCATION

1976 **UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN , B.S., Computer Science** Champaign, IL



## Talbot (Tab) Iredale

(604) 417-4734 • Talbot.Iredale@ClearBallot.com

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Chief Architect for ClearEMS, Clear Ballot's revolutionary new election management system. Responsible for designing the election management product and managing the team of engineers that implement and test the product.
- An experienced knowledge resource about the election industry, including election processes, certification processes, and election security, for others in the company.

### SUMMARY

Recognized industry leader in state of the art electronic voting systems programming, with decades of experience developing election management and reporting software across several companies, including Electronic Systems & Software, Premier Election Solutions, Diebold Election Systems and Global Election Systems. Directly involved with implementing voting system products in several states. Registered professional engineer.

### EXPERIENCE

- 2013- present    **CLEAR BALLOT GROUP**    Boston, MA  
*Chief Architect*
- Chief Architect for the Clear Ballot EMS system. Responsible for designing the election management product and managing the team of engineers that implement and test the product.
- 2009-2013    **ELECTION SYSTEMS & SOFTWARE**    Vancouver, BC  
*Director Software Development*
- Directed a team of software engineers focused on new election results and results reporting product.
- 2006-2009    **PREMIER ELECTION SOLUTIONS**    Vancouver, BC  
*Director Product Development*
- Directed the team of software and hardware engineers developing the election management and reporting software, the central tabulating software, the precinct tabulating software, and the scanning and tabulating hardware.
  - Directed the team of project managers, engineers, quality assurance testers, and documentation writers who successfully completed one of the first major EAC



voting system certifications.

2002- **DIEBOLD ELECTION SYSTEMS**

2006 *Director Software Development*

- Directed the team of software engineers developing the election management and reporting software, the central tabulating software, and the precinct tabulating software.
- Directly involved with the implementation of the voting system products in the states of Alaska, Maryland, and Georgia.

1992- **GLOBAL ELECTION SYSTEMS**

2002 *Directory Product Development*

- Directed the team of software and hardware engineers developing the state of the art election management and reporting software, the precinct tabulating software, and the scanning and tabulating hardware.

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**REFERENCES**

See Confidential References Document

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**EDUCATION**

1982 **UNIVERSITY OF BRITISH COLUMBIA, B.A.SC.**

Vancouver, BC



## Jordan Esten

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Account/Finance Manager/Change management. Works with counties to clarify and implement the Clear Ballot transition plan.
- Financial lead from Clear Ballot working closely with the CDOS and the county's financial manager. Structures all software licensing deals with the counties.

### SUMMARY

Financial director providing logistical management, negotiations and inter-governmental communications. Previously an investment banker at Robert W. Baird, and has significant familiarity with project finance activities and extensive experience managing client relationships during lengthy and complicated processes.

### EXPERIENCE

2012 - **CLEAR BALLOT GROUP**

Present *Director of Business Development* Boston, MA

- Responsible for leading all business development activities at Clear Ballot, including customer acquisition, partnership relations, corporate strategy, and finance efforts
- Directs all account management efforts, including ongoing and new customer relationships and projects

2011 **XOJET, INC. (Portfolio Company of Texas Pacific Group)**

*Corporate Strategy MBA Intern* San Francisco, CA

- Created aircraft utilization schedule to minimize flight hour penalties. Analyzed price/quantity variance for budgetary controls and development

2006-  
2010 **ROBERT W. BAIRD & CO.**

*Investment Banking, Technology Group* San Francisco, CA, London UK,  
Milwaukee, WI

- Led communication between clients, attorneys, investors and team members for projects within the Technology Group
- Managed analysts in the US and Europe; prepared memoranda for cross-border mergers and acquisitions; built financial models for M&A and Equity Offerings



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**REFERENCES**

See Confidential References Document

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**EDUCATION**

2010-2012     **TUCK SCHOOL OF BUSINESS AT DARTMOUTH COLLEGE, M.B.A.**  
Hanover, NH

2002-2006     **CARNEGIE MELLON UNIVERSITY, B.S., Finance, with Honors**  
Pittsburgh, PA



## James Arthur George Craig

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Technical Hardware Project Manager, providing training expertise on scanners; training the trainers, users, and CDOS officials
- Hardware and scanner support in Colorado, for all counties, coordinating Fujitsu field engineers across the state, and at national headquarters

### SUMMARY

Thirty years providing consistent high quality image capture, including providing conversion services to 36 out of the 67 Florida for Florida Clerks of the Courts, plus numerous city and county local governments, and elected offices; school boards, water management districts, Federal corps of engineers. Served on ANSI standards committees through AIIM. Board member, and President, of local ARMA, AIIM chapters. Active participation on PRIA, and other related professional records and historical associations. Captured permanent local, and state government minutes, land, court, student, HR records, as prescribed by state and federal administrative rules and regulations.

### EXPERIENCE

- |                  |  |                 |
|------------------|--|-----------------|
| Date             | <b>CLEAR BALLOT GROUP</b>  |                 |
| 2009-<br>present | <b>Contractor</b>  | Boston, MA      |
|                  | • Provide support, sales, maintenance and education on the use of Fujitsu scanner technology, including pre-release coordination of new equipment and drivers with Clear Ballot software designers   |                 |
| 1983-<br>present | <b>MICROGRAPHICS, INC.</b>   | Gainesville, FL |
|                  | <b>Director</b>  |                 |
|                  | • Information Management service company specializing in document conversion; microfilm and electronic images, and records management consulting.  |                 |
| Mid-<br>1980s    | Converted permanent records from the state of Florida, both polling book and cemetery records, to digital images using microfilm, working with the Clerk of the Courts and several counties. Provided on-site image capture of parochial records, private archives and government archives, for National Geographic, and various Academic Foundations. |                 |
| 1981-<br>1982    | With an interest sparked by studies of voting behavior at university, jumped at opportunity to participate for 6 months in the national election voting process in the Netherlands. Culminated in vote tabulation in City Hall, Kapella, Zeeland.  |                 |



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**REFERENCES**

See Confidential References Document

See Confidential References Document

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**EDUCATION**

**1990 B.A., POLITICAL SCIENCE, COLLEGE OF SOCIAL SCIENCES AT Tallahassee,  
FLORIDA STATE UNIVERSITY, B.A., POLITICAL SCIENCE FL**



## Ana Maria Quevedo

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Assistant Project Manager. Supports Clear Ballot's lead project manager.
- Assist with project planning, resource management, system delivery and public relations
- Work closely with the project manager and company principals to ensure that the project timely line and budget meet contractual basis
- Collaborate with CDOS, and Clear Ballot project management to ensure that systems implemented are in compliance with Colorado State UVS requirements
- Works closely with the CDOS to develop a training model and timing to best fit state requirements. As a leader of the Clear Ballot training team, runs geographic training sessions, county and statewide, in collaboration with county officials.
- Assistant training coordinator
  - Plan Clear Ballot training schedule and manage training resources
  - Provide adequate training material to CDOS and County officials
  - Organize special training sessions, if requested

### SUMMARY

Bilingual expert in the election automation field; trainer and coordinator with extensive experience implementing voting systems and providing training in Florida, Texas, Nebraska, California and Venezuela.

### EXPERIENCE

- 2013-present **CLEAR BALLOT GROUP** Miami, FL  
*Sales Engineer, Training and Implementation Lead*
- Leads Clear Ballot's training and support infrastructure, designing optimal plans for counties of varying sizes
  - Works closely with customers in Florida, to provide implementation and product support services
  - Performed implementation and training at 2013 Recount in El Paso County, CO
- 2011-2013 **MODCOMP SYSTEMS AND SOLUTIONS** Deerfield Beach, FL  
*Account Manager*
- Market and sell IT infrastructure solutions including network security, wired/wireless networks, data storage, virtualization, content delivery, VoIP, and professional services.



- 2007-2009 **PREMIER ELECTION SOLUTIONS (FORMERLY DIEBOLD)**  
*Latin America Sales Manager* Allen, TX
- Market and sell election management hardware, software, supplies and services in Latin America and Puerto Rico including preparation of marketing materials and delivery of sales presentations
  - Provide strategic market, product and competitive input to management
  - Rendered assistance with development of systems in accordance with local requirements
  - Frequent contact with local business representatives and election officials throughout Latin America
  - Coordinate international sales consultants' strategy, support and training
  - Monitor sales strategies and manage budget for assigned territory
  - Negotiation of sale and lease contracts for hardware, software, and support services
- Account manager* for two electronic voting projects in Colombia
- 2005-2007 **SEQUOIA VOTING SYSTEMS, INC.**  
*Sales Representative* Boca Raton, FL
- Territory included Florida, Central America and the Caribbean
  - Drafting of RFP responses, conducting sales presentations in two languages, monitoring compliance with procurement requirements and deadlines
  - Election support duties throughout the United States. Rendered assistance in California and Florida certification events
- 1998-2005 **ELECTION SYSTEMS AND SOFTWARE (ES&S)**  
*Lead Project Manager, Miami-Dade County, 7,2000 touch screen units (2002-2005)*  
Omaha, NE
- Conducted election programming software training for Elections Department IT personnel and warehouse staffers
  - Trained and managed temporary election preparation employees who assisted the County with election's coding logic and accuracy testing, equipment warehouse preparation, help-desk support on election day, pollworker training and election day field support
  - Functioned as on-site specialist for hardware and software
  - Conducted warehouse review and provided recommendations for touch screen preparation and testing
  - Assisted the development of election day procedure manuals for the use of precinct officials



- Performed key election tabulation and results data transmission role for County elections
- Developed, in coordination with the Supervisor of Elections, training and related documents and procedures pertaining to the pre-election, election day procedures including testing protocols and timetables
- Performed quality control of the programming and tests for over 150 official elections conducted with the touch screen tabulators – iVotronic – to ensure accuracy
- Assisted with project accounting, resource management and collections

***Technical Support Specialist (2000-2002)***

- Placer County, CA, project manager: coordinated hardware and software preparation, election programming, ballot layout, pollworker training, election day field support, precinct data transmission and election night tabulation and reporting
- Handled technical and site support responsibilities in numerous automated elections in Texas, California, Missouri, West Virginia, and Louisiana and Broward, Sarasota, Lee, Pasco, and Martin counties in Florida
- Responsible for Unity (Election Management Software) and iVotronic quality assurance testing

***International Sales Director/Lead Project Manager (2000-2002)***

- Assisted implementation: 7,300 precinct counters throughout 5,800 polling locations countrywide
  - Responsible for development and implementation of precinct voting equipment
  - Responsible for marketing and sales for most of South and Central America

1989-  
1998

**UNISYS CORPORATION VENEZUELA**

***Electronic Voting Technical Specialist,  
Field Engineer and Sales Representative***

Venezuela

- Nine-year experience in installation, configuration and maintenance of open system servers and peripherals including software, hardware and networking. Served as Unix server specialist (1995-1997). Named 1995 Technician of the Year. Addressed the Venezuelan National Electoral Council and the electoral tribunals of Panama, Ecuador and Costa Rica.
- Received on-site training resulting in familiarity with Brazilian electoral system and touch screen technology.



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**REFERENCES**

See Confidential References Documents

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**EDUCATION**

<b>2013</b>	<b>MIAMI DADE COLLEGE, B.S.</b> , Electronic Engineering Technology	Miami, FL
<b>2011</b>	<b>UNIVERSITY OF CALIFORNIA</b> , Team for Research in Ubiquitous Secure Technology (TRUST) – Research in auditing of electronic voting. Publication at USENIX conference	Berkeley, CA
<b>1986</b>	<b>POINT PARK UNIVERSITY, ASSOCIATE.</b> , Electrical Engineering Technology	Pittsburgh, PA



## Brian J. Meyers

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Project Oversight and Quality Assurance Lead. Brian will work closely with all parts of the team and have oversight to confirm all necessary standards and rules are met at each stage of the process.
- Works with Fujitsu representatives in Colorado and nationally to ensure that scanners are delivered on time during implementation and testing, and are working in accordance with Clear Ballot, Fujitsu and State of Colorado Standards.

### SUMMARY

Extensive experience in project oversight, as an Associate Consultant at L.E.K. Consulting, one of the most distinguished management consulting firms in the world. Brian has led the technical implementation and scanning processes at over 20 full election pilots. Additionally, he led the implementation and training of election department staff, during Recount and Recall elections in El Paso County, CO, and a Risk Limiting Audit pilot in Arapahoe County CO.

### EXPERIENCE

- 2012- present    **CLEAR BALLOT GROUP**    Boston, MA  
*Director of Product Management*
- Trained election officials in Colorado, New York, and Florida on the use of the ClearAudit system
  - Led team for certification and state approval efforts in Florida and New York
  - Created and implemented training and support plans and documentation for ClearAudit and ClearCount Systems
  - Worked with election officials to improve usability of ClearAudit system and implement new features
- 2011    **BRISTOL-MYERS SQUIBB**    Plainsboro, NJ  
*Summer MBA Marketing Intern, ORENCIA Payer Marketing*
- Built acquisition & reimbursement solutions and training materials for launch of therapeutic medical device, managing external vendors and internal team members to develop and produce training modules
  - Performed economic analysis of potential strategic partnerships
- 2007-2010    **L.E.K. CONSULTING**    San Francisco, CA  
*Associate Consultant*
- Managed junior associates and reviewed their findings



- Created market model for an international pharmaceutical firm to forecast sales, including dynamic adjustments for competitor entries and possible additional F.D.A.-approved indications
- Provided in-depth data analysis to determine causes of unexpected increase in hospital admissions
- Performed commercial due diligence for private equity and venture capital firms across several markets, including technology, manufacturing, and healthcare services companies
- Developed strategic initiatives and gauged viability of potential new markets for call center firm
- Forecasted consumer preferences for diagnostic testing platforms

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**REFERENCES**

See Confidential References Document

See Confidential References Document

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**EDUCATION**

2012	<b>TUCK SCHOOL OF BUSINESS AT DARTMOUTH, M.B.A.</b>	Hanover, NH
2007	<b>DARTMOUTH COLLEGE, A.B.,</b> Economics and Classical Archeology	Hanover, NH



## Al Eldridge

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Leading Clear Ballot's design and development of the highest levels of security features and capabilities in the industry.
- Work closely with county technical teams, the CDOS, and other vendors during the integration process, to ensure the success of all election security measures

### SUMMARY

Set the industrial standard for internet security at DEC and Lotus Notes. Committed to quality improvement of security systems integrated with new architecture.

### EXPERIENCE

2013- **CLEAR BALLOT GROUP**

present *Senior Engineer, Security*

Boston, MA

- In charge of software security across all aspects of Clear Ballot technology
- Integrates optimal security for Clear Ballot software and Fujitsu scanning hardware to meet and exceed state-of-the-art industry guidelines

1985- **LOTUS NOTES**

2013 *Engineer*

Westford, MA

- Project leader, architect and implementer of Lotus Notes wide-area network and security architecture
- Developer of the Lotus Notes Public Key Infrastructure

1978- **DIGITAL EQUIPMENT CORPORATION (DEC)**

1985 *Engineer*

Nashua, NH

- Sole designer and implementer of DECnet, the equivalent of what is now the TCP/IP layers of the Internet
- Project leader, designer, and implementer of the VAXcluster Ethernet project

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### REFERENCES

See Confidential References Document

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### EDUCATION

1970 **STEVENS INSTITUTE OF TECHNOLOGY , B.S., MATHEMATICS**

Hoboken, NJ

1976 **UNIVERSITY OF CONNECTICUT, M.S., COMPUTER SCIENCE**

Storrs, CT



## Christine Marini Sigman

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Documentation and Training Lead, working with the tech team and CDOS to develop documentation for the training and support of the counties. Actively involved in the certification process.

### SUMMARY

Award-winning, expert technical documentation manager with comprehensive experience delivering industry-specific documentation for business, technical users and consumers.

### EXPERIENCE

- |              |   |                        |
|--------------|---|------------------------|
| Date         | <b>CLEAR BALLOT GROUP</b>   |                        |
| 2012-present | <b>Senior Technical Writer</b>  | Boston, MA             |
|              | • Write and update technical documentation for Clear Ballot products. Help create training materials for Clear Ballot products. Assist in Clear Ballot certification efforts by writing supporting documents  |                        |
| 2002-2012    | <b>ENDECA TECHNOLOGIES</b>  |                        |
|              | <b>Documentation Manager</b>  | Cambridge, MA          |
|              | • Documentation manager with writing responsibilities for search and business intelligence software company. Team won the STC Excellence for Online Documentation Award in 2006   |                        |
| 2011-present | <b>NORTHEASTERN UNIVERSITY</b>  |                        |
|              | <b>Adjunct Lecturer in Technical Communications</b>   | Boston, MA             |
|              | • Part-time Instructor in online Master's program; Peer reviewer for the academic journal <i>Technical Communication</i>  |                        |
| 1997-2002    | <b>C-BRIDGE INTERNET SOLUTIONS (EXELON); I2 TECHNOLOGIES; PILOT SOFTWARE</b>  |                        |
|              | <b>Senior Technical Writer</b>  | Boston & Cambridge, MA |
|              | • For these 3 successful start-up companies, provided documentation lead, writing, and technical editing for industry-specific software products in web applications, steel mill production scheduling, analytical processing and business intelligence |                        |

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### REFERENCES

See Confidential References Document                      See Confidential References Document

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### EDUCATION

- |             |   |                 |
|-------------|---|-----------------|
| <b>2009</b> | <b>NORTHEASTERN UNIVERSITY , M.S.,</b> Technical Communications | Boston, MA      |
| <b>1987</b> | <b>OXFORD UNIVERSITY,</b> Graduate Certificate in English       | Oxford, England |
| <b>1985</b> | <b>UNIVERSITY OF MASSACHUSETTS, B.A.,</b> English with Honors   | Amherst, MA     |



## Don Nolin

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Testing Lead for the team that develops test plans and standards. Generates test scripts, plans and develops methods of execution. Will work both in Clear Ballot lab in Boston and with CDOS and Clear Ballot officials in Colorado to execute the test plan.

### SUMMARY

Software and QA professional experienced in heterogeneous interconnected computing platforms, process automation, User Interface, and human and mechanical data acquisition systems. Client server platforms and Web enabled technologies.

### EXPERIENCE

2013- **CLEAR BALLOT GROUP**

present *Senior QA Engineer*

Boston, MA

- Build Automated Ballot Marking Tool for internal and external use to create sample test decks for Logic and Accuracy Testing, testing automation and Windows Tabulator for performance testing

2011- **AKIBAN INC., RUE LALA INC.**

2012 *QA Engineer and Network Administration*

- Maintained production environment assets with “four nines” uptime
- Designed and wrote test plans and performed manual and automated testing

2008- **WAAV, INC.**

2010 *Software Engineer*

First Wi-Fi hotspot for any mobile vehicle, the first multiple connection cellular router, and the ability to broadcast standard definition video over cellular networks

- Interfaced with primary customer contact in client site installations
- Designed and conducted field test and interfaced with testing facilities

2004- **DATAUPIA; BLADELOGIC; AMMASSO INC.**

2008 *Software Quality Assurance Engineer*

Cambridge and Lexington, MA

- For these 3 data management companies, developed test automation, test procedures and individual tests

1991- **MULTIPLE SOFTWARE TECHNOLOGY COMPANIES**

2004 *Software Quality Assurance Engineer*

Boston Area and Bar Harbor, ME

- Provided maintenance infrastructure to scripted interface
- Performed risk analysis on code modifications and regression testing



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**REFERENCES**

See Confidential References Document

See Confidential References Document

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**EDUCATION**

**UNIVERSITY OF MAINE, B.S.,** Computer Engineering

Orono, ME





## Marlboro Breeden Moore III

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### RESPONSIBILITIES FOR THE COLORADO UNIFORM VOTING SYSTEM

- Creates Clear Ballot's technology to read and tabulate ballots from all certified voting systems, allowing Colorado to have a smooth transition from their current voting systems. Leads the ongoing creation of ballot definition files.

### SUMMARY

Expert programmer and creative designer, experienced with election audit design.

### EXPERIENCE

- |                  |  |
|------------------|--|
| 2012-<br>present | <b>CLEAR BALLOT GROUP</b><br><i>Senior Engineer</i><br>Boston, MA  |
|                  | <ul style="list-style-type: none"><li>• Develop technology to extract contest and candidate information from election ballots</li><li>• Produce Ballot Definition Files used as part of the process of tabulating elections from scanned ballots</li><li>• Develop tools for automatic marking of paper ballots for such tasks as Logic and Accuracy (L&amp;A) testing</li></ul> |
| 2002-<br>2011    | <b>INDEPENDENT ANIMATOR AND DEVELOPER</b><br>Cambridge, MA   |
|                  | <ul style="list-style-type: none"><li>• Developed PERL code to analyze election data for South Carolina/League of Women Voters project auditing 2010 South Carolina elections</li><li>• Award winning film producer and animator.</li></ul>  |
| 1992-<br>2002    | <b>DRAGON SYSTEMS</b><br><i>Research Engineer</i><br>Newton, MA  |
|                  | <ul style="list-style-type: none"><li>• Researched, designed and wrote modules in C++ to reduce the word error rate in Dragon NaturallySpeaking. Designed algorithms for US patent number 7120582, expanding the Effective Vocabulary of a Speech Recognition System</li></ul>   |
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### REFERENCES (Supervisors at Dragon Systems)

See Confidential References Document

See Confidential References Document

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### EDUCATION

<b>HARVARD UNIVERSITY , M.A., C.A.S.,</b> Computer Science	Cambridge, MA
<b>UNIVERSITY OF MASSACHUSETTS, B.A.,</b> Philosophy	Amherst, MA
<b>MASSACHUSETTS COLLEGE OF ART,</b> Course Work in Animation	Boston, MA



**B. Fujitsu letter of support**



04 December 2013

Dear Colorado Department of State,

As a leading technology company offering a full range of technology, products, and services, Fujitsu would like to contribute its affiliation with Clear Ballot. Having worked with many of the same customers, who use Clear Ballot and Fujitsu products together, we have seen first hand how our products offer a combination of advanced software and hardware, providing faster and more efficient solutions for the election industry.

While Clear Ballot and Fujitsu each has its own services and guarantees the highest level of support for it's customers, the products collectively provide a fast, cost efficient and accurate solution for Election Officials.

The speeds of Fujitsu's commercial off-the-shelf scanners allow the process to be efficient and fast. The election process happens quickly and Clear Ballot's software delivers digital images immediately. Election Officials have the ability to quickly review ballots with links within the software to instantly determine an election. Fujitsu and Clear Ballot work together to make sure each stage in the election process is done quickly and efficiently.

Clear Ballot's solution is substantially less expensive for counties than current proprietary hardware due to Fujitsu's options. Currently most vote tabulation equipment is large, expensive, and proprietary and has remained relatively unchanged for over 20 years. Not only are Fujitsu scanners affordable but also faster and scalable to each county size. Small counties may need one small, affordable, central count scanner, while larger counties have the ability to network scanners together allowing for customized speed at a lower cost than proprietary equipment.

With Clear Ballot technology, Election Officials have a compelling, cost-effective solution for validating the accuracy of vote totals. Additionally with a highly experienced support team of approximately 170,000 and customers in more than 100 countries, Fujitsu has the ability to ship products quickly and support every county's needs.

Fujitsu has worked closely with Clear Ballot in counties of every size across many different states, verifying elections in less than half the time it has taken previously and with complete confidence given the accuracy and transparency of Clear Ballot technology. We hope you will consider Clear Ballot's proposal as Fujitsu can attest, working with Clear Ballot has been beneficial for us as well as each county who has benefitted from their services.

Sincerely,

Scott Steiner  
Fujitsu, South East Account Executive



## C. Sample Project Artifacts

### Project Management Plan Example

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#### A. Introduction

The Introduction provides a high level overview of the project and what is included in this Project Management Plan. This should include a high level description of the project and describe the projects deliverables and benefits. Excessive detail is not necessary in this section as the other sections of the project plan will include this information.

This project will result in the implementation of Uniform Voting System for the State of Colorado. Clear Ballot Group led successful election projects through strong project management and personnel to support those projects. Best practices and lessons learned have refined the Clear Ballot approach in delivering product quality, ease of use, flexibility, and customer service.

#### B. Project Management Approach

This section outlines the overall management approach for the project. This section should describe, in general terms, the roles and authority of project team members. It should also include which organizations will provide resources for the project and any resource constraints or limitations. If there are any decisions which must be made by specific individuals—for example authorizing additional funding by the project sponsor—this should also be stated here.

This is the Executive Summary for the Project Management Plan.

The Project Manager has the overall authority and responsibility for managing and executing this project according to this Project Plan and its Subsidiary Management Plans. The project team will consist of personnel from the coding group, quality control/assurance group, technical support, technical writing group, training specialists, and testing group. The project manager will work with all resources to perform project planning. All project and subsidiary management plans will be reviewed and approved by the project sponsor. All funding decisions will also be made by the project sponsor. Any delegation of approval authority to the project manager should be done in writing and be signed by both the project sponsor and project manager.

The project team will be a matrix in that team members from each organization continue to report to their organizational management throughout the duration of the project. The project manager is responsible for communicating with organizational managers on the progress and performance of each project resource.

#### C. Project Scope



The scope statement from the project charter (there is no charter) should be used as a starting point; however, the project plan needs to include a much more detailed scope than the charter. This detail should include what the project does and does not include. The more detail included in this section, the better the product. This will help to clarify what is included in the project and help to avoid any confusion from project team members and stakeholders.

**D. Milestone List**

The chart below lists the major milestones for the Uniform Voting System Project. This chart is comprised only of major project milestones such as completion of a project phase or gate review. There may be smaller milestones that are not included on this chart but are included in the project schedule and WBS. If there are any scheduling delays that may impact a milestone or delivery date, the project manager must be notified immediately so proactive measures may be taken to mitigate slips in dates. Any approved changes to these milestones or dates will be communicated to the project team by the project manager.

Milestone	Description	Date
Complete Requirements Gathering		x/xx/xx

**D. Schedule Baseline and Work Breakdown Structure**

The WBS for the UVS Project is comprised of work packages which do not exceed 40 hours of work but are at least 4 hours of work. Work packages will be developed through close collaboration among project team members and stakeholders with input from functional managers and research from past projects.

The WBS Dictionary defines all work packages for the UVS Project. These definitions include all tasks, resources, and deliverables. Every work package in the WBS is defined in the WBS Dictionary and will aid in resource planning, task completion, and ensuring deliverables meet project requirements.



The schedule is to be completed, reviewed by the Project Sponsor, and approved and base-lined. The schedule will be maintained as a MS Project on the Colorado Secretary of State Project Website. Any proposed changes to the schedule will follow the change control process. The Project Manager and team will determine the impact of all change requests on the schedule, cost, resources, scope, and risks. If it is determined that the impacts will exceed the boundary conditions and jeopardize project success, then the change will be forwarded to the Project Sponsor for review and approval.

If the change is approved by the Project Sponsor then it will be implemented by the Project Manager who will update the schedule and all documentation and communicate the change to all stakeholders in accordance with the Change Control Process.

E. Change Control Plan

Please refer to the attached Change Control Plan

F. Communications Management Plan & Stakeholder Management

See Organizational Change Management Plan attached

G. Cost Management Plan

The Cost Management Plan clearly defines how the costs on a project will be managed throughout the project's lifecycle. It sets the format and standards by which the project costs are measured, reported, and controlled. Working within the cost management guidelines is imperative for all project team members to ensure successful completion of the project. These guidelines may include which level of the WBS cost accounts will be created in and the establishment of acceptable variances. The Cost Management Plan:

- Identifies who is responsible for managing costs
- Identifies who has the authority to approve changes to the project or its budget
- How cost performance is quantitatively measured and reported upon
- Report formats, frequency and to whom they are presented

For complex or large projects the Cost Management Plan may be included as an appendix to the Project Management Plan or as a separate, stand-alone document.

The Project Manager will be responsible for managing and reporting on the project's cost throughout the duration of the project. The Project Manager will present and review the project's cost performance during the monthly project status meeting. All budget authority and decisions, to include budget changes, reside with the UVS Project Sponsor.

H. Procurement Management Plan



The Procurement Management Plan should be defined enough to clearly identify the necessary steps and responsibilities for procurement from the beginning to the end of a project. The project manager will work with the project team, contracts/purchasing department, and other key players to manage the procurement activities.

For larger projects or projects with more complicated procurement management requirements, you can include the Procurement Management Plan as a separate document apart from the Project Management Plan.

The Project Manager will provide oversight and management for all procurement activities under this project. The procurement of Fujitsu scanners, servers and workstations, etc. should be part of this plan or noted in separate document as stated above.

The Project Manager will be responsible for management any selected vendor or external resource. The Project Manager will also measure performance as it relates to the vendor providing necessary goods and/or services and communicate this to the purchasing and contracts groups.

#### I. Project Scope Management Plan

Scope management for the UVS Project will be the sole responsibility of the Project Manager. The scope for this project is defined by the Scope Statement, Work Breakdown Structure (WBS) and WBS Dictionary. The Project Manager, Sponsor, and Stakeholders will establish and approve documentation for measuring project scope which includes deliverable quality checklists and work performance measurements.

Proposed scope changes may be initiated by the Project Manager, Stakeholders or any member of the project team. All change requests will be submitted to the Project Manager who will then evaluate the requested scope change. Upon acceptance of the scope change request the Project Manager will submit the scope change request to the Change Control Board and Project Sponsor for acceptance. Upon approval of scope changes by the Change Control Board and Project Sponsor the Project Manager will update all project documents and communicate the scope change to all stakeholders. Based on feedback and input from the Project Manager and Stakeholders, the Project Sponsor is responsible for the acceptance of the final project deliverables and project scope.

The Project Sponsor is responsible for formally accepting the project's final deliverable. This acceptance will be based on a review of all project documentation, testing results, beta trial results, and completion of all tasks/work packages and product functionality.

#### J. Schedule Management Plan



This section provides a general framework for the approach that will be taken to create the project schedule. Effective schedule management is necessary for ensuring tasks are completed on time, resources are allocated appropriately, and to help measure project performance. This section should include discussion of the scheduling tool/format, schedule milestones, and schedule development roles and responsibilities.

Project schedules for the UVS Project will be created using MS Project 2010 or a version coordinated with the CDOS starting with the deliverables identified in the project's Work Breakdown Structure (WBS). Activity definition will identify the specific work packages that must be performed to complete each deliverable. Activity sequencing will be used to determine the order of work packages and assign relationships between project activities. Activity duration estimating will be used to calculate the number of work periods required to complete work packages. Resource estimating will be used to assign resources to work packages in order to complete schedule development.

Once a preliminary schedule has been developed, it will be reviewed by the project team and any resources tentatively assigned to project tasks. The project team and resources must agree to the proposed work package assignments, durations, and schedule. Once this is achieved the project sponsor will review and approve the schedule and it will then be base lined.

In accordance with organizational standard, the following will be designated as milestones for all project schedules:

- Completion of scope statement and WBS/WBS Dictionary
- Base lined project schedule
- Approval of final project budget
- Project kick-off
- Approval of roles and responsibilities
- Requirements definition approval
- Completion of data mapping/inventory
- Project implementation
- Acceptance of final deliverables

Roles and responsibilities for schedule development are as follows:

The project manager will be responsible for facilitating work package definition, sequencing, and estimating duration and resources with the project team. The project manager will also create the project schedule using MS Project 2010 and validate the schedule with the project team, stakeholders, and the project sponsor. The project manager will obtain schedule approval from the project sponsor and baseline the schedule.



The project team is responsible for participating in work package definition, sequencing, duration, and resource estimating. The project team will also review and validate the proposed schedule and perform assigned activities once the schedule is approved.

The project sponsor will participate in reviews of the proposed schedule and approve the final schedule before it is base lined.

The project stakeholders will participate in reviews of the proposed schedule and assist in its validation.

#### J. Quality Management Plan

This section discusses how quality management will be used to ensure that the deliverables for the project meet a formally established standard of acceptance. This section should include quality roles and responsibilities, quality control, quality assurance, and quality monitoring.

For larger or more complex projects, the Quality Management Plan may be included as an appendix or separate document. A detailed Quality Management Plan is available for use on our website.

All members of the UVS project team will play a role in quality management. It is imperative that the team ensures that work is completed at an adequate level of quality from individual work packages to the final project deliverable. The following are the quality roles and responsibilities for the UVS Project:

The Project Sponsor is responsible for approving all quality standards for the UVS Project. The Project Sponsor will review all project tasks and deliverables to ensure compliance with established and approved quality standards. Additionally, the Project Sponsor will sign off on the final acceptance of the project deliverables.

The Project Manager is responsible for quality management throughout the duration of the project. The Project Manager is responsible for implementing the Quality Management Plan and ensuring all tasks, processes, and documentation are compliant with the plan. The Project Manager will work with the project's quality specialists to establish acceptable quality standards. The Project Manager is also responsible for communicating and tracking all quality standards to the project team and stakeholders.

The Quality Specialists are responsible for working with the Project Manager to develop and implement the Quality Management Plan. Quality Specialists will recommend tools and methodologies for tracking quality and standards to establish acceptable quality levels. The Quality Specialists will create and maintain Quality Control and Assurance Logs throughout the project.

The remaining member of the project team, as well as the stakeholders will be responsible for assisting the Project Manager and Quality Specialists in the establishment of acceptable quality



standards. They will also work to ensure that all quality standards are met and communicate any concerns regarding quality to the Project Manager.

**K. Quality Baseline**

This section should include the quality baseline for the project. The purpose of this baseline is to provide a basis for ensuring that quality can be measured to determine if acceptable quality levels have been achieved. It is important for all projects to clearly define and communicate quality standards and the quality baseline serves this purpose.

The UVS Project must meet the quality standards established in the quality baseline. The quality baseline is the baseline that provides the acceptable quality levels of the UVS Project. The software must meet or exceed the quality baseline values in order to achieve success.

Item	Acceptable Level	Comments
Generating and testing BDFs	At least 99% recognition level with 1% or less errors in text	Using standard TSI English language databases
Compatibility	No errors associated with running software with compatible applications	Server and Workstation are compatible with Clear Scan software

**L. Risk Management Plan**

See Risk Management Plan and Risk Register (b)

**M. Risk Register**

The Risk Register for this project is attached.

**N. Staffing Management Plan**

Discuss how you plan to staff the project. This section should also include how resources will be procured and managed as well as the key resources needed for the project

The UVS Project will consist of a matrix structure with support from various internal organizations. All work will be performed internally. Staffing requirements for the UVS Project include the following:

Project Manager (1 position) – responsible for all management for the UVS Project. The Project Manager is responsible for planning, creating, and/or managing all work activities, variances, tracking, reporting, communication, performance evaluations, staffing, and internal coordination with functional managers.



Senior Programmer (1 position) – responsible for oversight of all coding and programming tasks for the UVS Project as well as ensuring functionality is compliant with quality standards. Responsible for working with the Project Manager to create work packages, manage risk, manage schedule, identify requirements, and create reports. The Senior Programmer will be managed by the Project Manager who will provide performance feedback to the functional manager.

Programmer (1 position) – responsible for coding and programming for the UVS Project. All coding and programming tasks will be reviewed by the Senior Programmer prior to implementation. Responsibilities also include assisting with risk identification, determining impacts of change requests, and status reporting. The Programmer will be managed by the Project Manager and feedback will be provided to the functional manager for performance evaluations by the Project Manager and Senior Programmer.

Senior Quality Specialist (1 position) – responsible for assisting the Project Manager in creating quality control and assurance standards. The Senior Quality Specialist is also responsible for maintaining quality control and assurance logs throughout the project. The Senior Quality Specialist will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

Quality Specialist (1 position) – responsible for assisting the Project Manager and Senior Quality Specialist in creating and tracking quality control and assurance standards. The Quality Specialist will have primary responsibility for compiling quality reporting and metrics for the Project Manager to communicate. The Quality Specialist will be managed by the Project Manager who will provide feedback, along with the Senior Quality Specialist to the functional manager for performance evaluations.

Technical Writer (1 position) – responsible for compiling all project documentation and reporting into organizational formats. Responsible for assisting the Project Manager in Configuration Management and revision control for all project documentation. Responsible for scribing duties during all project meetings and maintaining all project communication distribution lists. The Technical Writer will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

Testing Specialist (1 position) – responsible for helping establish testing specifications for the UVS Project with the assistance of the Project Manager and Programmers. Responsible for ensuring all testing is complete and documented in accordance with CDOS standards. Responsible for ensuring all testing resources are coordinated. The Testing Specialist will be managed by the Project Manager who will also provide feedback to the functional manager for performance evaluations.

The Project Manager will negotiate with all necessary TSI functional managers in order to identify and assign resources for the UVS Project. All resources must be approved by the appropriate functional manager before the resource may begin any project work. The project



team will not be co-located for this project and all resources will remain in their current workspace.

O. Resource Calendar

The UVS Project will require all project team members for the entire duration of the project although levels of effort will vary as the project progresses. The Project is scheduled to last one to three years with standard 40 hour work weeks. If a project team member is not required for a full 40 hour work week at any point during the project, their efforts outside of the UVS Project will be at the discretion of their Manager.

P. Cost Baseline

This section contains the cost baseline for the project upon which cost management will be based. The project will use earned value metrics to track and manage costs and the cost baseline provides the basis for the tracking, reporting, and management of costs.

The cost baseline for the UVS project includes all budgeted costs for the successful completion of the project.

Project Phase	Budgeted Total	Comments
Planning		Includes work hours for all project team members for gathering requirements and planning project
Design		Includes work hours for all project team members for work on Clear Ballot conceptual design
Coding		Includes all work hours for coding of Clear Ballot
Testing		Includes all work hours for testing (including beta testing) of Clear Ballot software
Installation and Training		
Transition and Closeout		Includes all work hours for transition to operations and project closeout
Supporting Documentation		Includes hours for technical writer

Q. Sponsor Acceptance  
Acquire sign-off on plan.



## Project Status Report Example

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### PROJECT STATUS SUMMARY

Percent Complete: xx%

Scope	Schedule	Cost	Risks	Quality
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This section provides a quick executive overview of the status of the project. It is intended for high level management so it should not get too much into the details of the project. However, it should highlight anything specific that should be brought to their attention. The Scope/Schedule/Cost/Quality table above is a quick way to present a color coded dashboard for the status report. Typically a variance of +/- 5% will warrant a yellow cautionary color and +/- 10% will warrant a red warning color. For a project which needs tighter control +/- 2% and +/- 5% are used for these thresholds; whereas, other projects with less strict control may use 10% and 20% variances. The percent complete here should be the percent completion of the entire project. For any constraint that is yellow or red this section should contain brief explanation the reason why.

#### 1.0 Work Planned for Last Month

Copy the "Worked Planned for Next Week" section from last week's status report and paste it into this section.

#### 2.0 Work Completed Last Week

Provide a highlight of work performed and milestones and/or deliverables met during the past week.

#### 3.0 Work Planned For Next Week

Provide an overview of the work being performed during the next week and any milestones or deliverables expected.

#### 4.0 Open Issues

List open issues along with their status from the issue log.

#### 5.0 Open Risks

List of all open risks (risks which have occurred, or are on the verge of occurring for this timeframe).

#### 6.0 Deliverables and Milestones

This section is a quick table which shows the status of the project milestones and deliverables.

The first column is for the name of the Milestone or Deliverable as it's in the project plan. The next column is the WBS number; this makes it easier to find the milestone/deliverable in the



project plan. Planned is the planned date according to the approved project plan, the forecasted is the date you expect and actual is the actual date the milestone was met or deliverable was delivered. The status is a simple one or two word status such as; completed, on schedule, behind schedule, accepted, etc.

Milestone	WBS	Planned	Forecasted	Actual	Status
Deliverable	WBS	Planned	Forecasted	Actual	Status

### 7.0 Open Change Requests

Track all changes to the project and report the status of those changes. Tracking of changes starts with the request for the change, tracks the approval status. It ends when the change is added to the project, the project plan, and schedule update and it has become a part of the project. Example:

Change Request Name	Change Number	Request	Request Date	Current Status
Add Functionality	CR55043		3/31/20xx	In Review by Change Control Board
Add Redundant Servers	CR55012		3/31/20xx	Approved and Being Added to the Project Plan

### 8.0 Key Performance Indicators (KPI's)

Performance indicators provide a clear view of the status of the project according the earned value metrics. Determine which metrics to monitor. The example below tracks SV, SPI, CV and CPI. Next to the schedule and cost headings you should state whether the project is ahead of or behind schedule and over or under budget.

#### **Schedule** - Project is Ahead of/Behind Schedule

Schedule Variance (SV): \$xxxx

Schedule Performance Index (SPI): x.xx

#### **Cost** - Project is Over/Under Budget

Cost Variance (CV): \$xxx

Cost Performance Index (CPI): x.xx



### Issue Log Example

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Accountability must be established so the project team and stakeholders understand who is responsible for the work to be performed. If tasks are not specifically assigned and managed, they will sit idle and may significantly impact the overall project performance.

The issue log is used throughout a project’s lifecycle to capture any issues brought forward, communicate the issues to the project team and stakeholders, establish categories and priorities of all issues, assign responsibility to each issue, and ensure that each issue is resolved with minimal impact to the project’s performance. The issue log should be reviewed by the project team regularly to ensure issues are being resolved.

#### Sample Issue Log with Explanations:

Issue Log								
Project:							Date:	
Issue	Description	Priority (H, M, L)	Category	Reported By	Assigned To	Status	Date Resolved	Resolution/ Comments
This should--1 be a standard numbering system.	Detailed description of the issue.	High, Medium or Low priority.	Assign to a category.	Who reported the issue?	Who is the issue assigned to?	What is the status of the issue?	What date was the issue resolved?	What was the resolution or what is being done to resolve the issue?



Issue Log								
Project: UVS							Date: 03/03/2014	
Issue	Description	Priority (H, M, L)	Category	Reported By	Assigned To	Status	Date Resolved	Resolution/ Comments
001								
002								
003								
004								
005								
006								

## Sample Communications Report

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### A. Introduction

This Communications Management Plan sets the communications framework for this project. It will serve as a guide for communications throughout the life of the project and will be updated as communication needs change. This plan identifies and defines the roles of persons involved in this project. It also includes a communications matrix that maps the communication requirements of this project. An in-depth guide for conducting meetings details the communications rules and how the meetings will be conducted, ensuring successful meetings. A project team directory is included to provide contact information for all stakeholders directly involved in the project.

### B. Communications Management Approach

The Project Manager will take a proactive role in ensuring effective communications on this project. The communications requirements are documented in the Communications Matrix presented in this document. The Communications Matrix will be used as the guide for what information to communicate, who is to do the communicating, when to communicate it and to whom to communicate.

As with most project plans, updates or changes may be required as the project progresses or changes are approved. Changes or updates may be required due to changes in personnel, scope, budget, or other reasons. Additionally, updates may be required as the project matures and additional requirements are needed. The project manager is responsible for managing all proposed and approved changes to the communications management plan. Once the change is approved, the project manager will update the plan and supporting documentation and will distribute the updates to the project team and all stakeholders. This methodology is consistent with the project's Change Control Plan and ensures that all project stakeholders remain aware and informed of any changes to communications management.

### C. Communications Management Constraints

All project communication activities will occur within the project's approved budget, schedule, and resource allocations. The project manager is responsible for ensuring that communication activities are performed by the project team and without external resources that will result in exceeding the authorized budget. Communication activities will occur in accordance with the frequencies detailed in the Communication Matrix in order to ensure the project adheres to schedule constraints. Any deviation of these timelines may result in excessive costs or schedule delays and must be approved by the project sponsor.



Organizational policy states that where applicable, standardized formats and templates must be used for all formal project communications. The details of these policy requirements are provided in the section titled “Standardization of Communication” in this document.

Organizational policy also states that only a higher level employee may authorize the distribution of confidential information. The project manager is responsible for ensuring that approval is requested and obtained prior to the distribution of any confidential information regarding this project.

#### D. Stakeholder Communication Requirements

As part of identifying all project stakeholders, the project manager will communicate with each stakeholder in order to determine their preferred frequency and method of communication. This feedback will be maintained by the project manager in the project’s Stakeholder Register. Standard project communications will occur in accordance with the Communication Matrix; however, depending on the identified stakeholder communication requirements, individual communication is acceptable and within the constraints outlined for this project.

In addition to identifying communication preferences, stakeholder communication requirements must identify the project’s communication channels and ensure that stakeholders have access to these channels. If project information is communicated via secure means or through internal company resources, all stakeholders, internal and external, must have the necessary access to receive project communications.

Once all stakeholders have been identified and communication requirements are established, the project team will maintain this information in the project’s Stakeholder Register and use this, along with the project communication matrix as the basis for all communications.

#### E. Roles

##### *Project Sponsor*

The project sponsor is the champion of the project and has authorized the project by signing the project charter. This person is responsible for the funding of the project and is ultimately responsible for its success. Since the Project Sponsor is at the executive level communications should be presented in summary format unless the Project Sponsor requests more detailed communications.

##### *Key Stakeholders*

Normally Stakeholders includes all individuals and organizations that are impacted by the project. For this project we are defining a subset of the stakeholders as Key Stakeholders. These are the stakeholders with whom we need to communicate with and are not included in the other



roles defined in this section. The Key Stakeholders includes executive management with an interest in the project and key users identified for participation in the project.

#### *Change Control Board*

The Change Control Board is a designated group which reviews technical specifications and authorizes changes within the organizations infrastructure. Technical design documents, user impact analysis and implementation strategies are typical of the types of communication this group requires.

#### *Customer*

The customer for this project is <Target County>. As the customer who will be accepting the final deliverable of this project they will be informed of the project status including potential impacts to the schedule for the final deliverable or the product itself.

#### *Project Manager*

The Project Manager has overall responsibility for the execution of the project. The Project Manager manages day to day resources, provides project guidance and monitors and reports on the projects metrics as defined in the Project Management Plan. As the person responsible for the execution of the project, the Project Manager is the primary communicator for the project distributing information according to this Communications Management Plan.

#### *Project Team*

The Project Team is comprised of all persons who have a role performing work on the project. The project team needs to have a clear understanding of the work to be completed and the framework in which the project is to be executed. Since the Project Team is responsible for completing the work for the project they played a key role in creating the Project Plan including defining its schedule and work packages. The Project Team requires a detailed level of communications that is achieved through day-to-day interactions with the Project Manager and other team members along with weekly team meetings.

#### *Steering Committee*

The Steering Committee includes management representing the departments that make up the organization. The Steering Committee provides strategic oversight for changes that impact the overall organization. The purpose of the Steering Committee is to ensure that changes within the organization are effected in such a way that it benefits the organization as a whole. The Steering Committee requires communication on matters that will change the scope of the project and its deliverables.

#### *Technical Lead*

The Technical Lead is a person on the Project Team who is designated to be responsible for ensuring that all technical aspects of the project are addressed and that the project is implemented in a technically sound manner. The Technical Lead is responsible for all technical



designs, overseeing the implementation of the designs and developing as-build documentation. The Technical Lead requires close communications with the Project Manager and the Project Team.

F. Project Team Directory

The following table presents contact information for all persons identified in this communications management plan. The email addresses and phone numbers in this table will be used to communicate with these people.

Role	Name	Title	Organization/ Department	Email	Phone
<b>Project Sponsor</b>					
<b>Program Manager</b>					
<b>Project Manager</b>					
<b>Project Stakeholders</b>	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register	See Stakeholder Register
<b>Customer</b>					
<b>Project Team</b>					
<b>Technical Lead</b>					

G. Communication Methods and Technologies

The project team will determine, in accordance with ABC Corp. organizational policy, the communication methods and technologies based on several factors to include: stakeholder communication requirements, available technologies (internal and external), and organizational policies and standards.



H. Communications Matrix

Communication Type	Objective of Communication	Medium	Frequency	Audience	Owner	Deliverable	Format
Kickoff Meeting	Introduce the project team and the project. Review project objectives and management approach.	<ul style="list-style-type: none"> <li>• Face to Face</li> </ul>	Once	<ul style="list-style-type: none"> <li>• Project Sponsor</li> <li>• Project Team</li> <li>• Stakeholders</li> </ul>	Project Manager	<ul style="list-style-type: none"> <li>• Agenda</li> <li>• Meeting Minutes</li> </ul>	Project web site County Clerks' area
Project Team Meetings	Review status of the project with the team.	<ul style="list-style-type: none"> <li>• Face to Face</li> <li>• Conference Call</li> </ul>	Weekly	<ul style="list-style-type: none"> <li>• Project Team</li> </ul>	Project Manager	<ul style="list-style-type: none"> <li>• Agenda</li> <li>• Meeting Minutes</li> <li>• Project schedule</li> </ul>	Project web site County Clerks' area
Technical Design Meetings	Discuss and develop technical design solutions for the project.	<ul style="list-style-type: none"> <li>• Face to Face</li> </ul>	As Needed	<ul style="list-style-type: none"> <li>• Project Technical Staff</li> </ul>	Technical Lead	<ul style="list-style-type: none"> <li>• Agenda</li> <li>• Meeting Minutes</li> </ul>	Project web site County Clerks' area
Monthly Project Status Meetings	Report on the status of the project to management.	<ul style="list-style-type: none"> <li>• Face to Face</li> <li>• Conference Call</li> </ul>	Monthly	<ul style="list-style-type: none"> <li>• PMO</li> </ul>	Project Manager	<ul style="list-style-type: none"> <li>• Project updates</li> <li>• Project schedule</li> </ul>	Project web site County Clerks' area
Project Status Reports	Report the status of the project including activities, progress, costs, and issues.	<ul style="list-style-type: none"> <li>• Email</li> </ul>	Monthly	<ul style="list-style-type: none"> <li>• Project Sponsor</li> <li>• Project Team</li> <li>• Stakeholders</li> <li>• PMO</li> </ul>	Project Manager	<ul style="list-style-type: none"> <li>• Project Status</li> <li>• Project schedule</li> </ul>	Project web site County Clerks' area



## I. Meeting Guidelines

### **Meeting Agenda**

Meeting Agenda will be distributed 5 business days in advance of the meeting. The Agenda should identify the presenter for each topic along with a time limit for that topic. The first item in the agenda should be a review of action items from the previous meeting.

### **Meeting Minutes**

Meeting minutes will be distributed within 2 business days following the meeting. Meeting minutes will include the status of all items from the agenda along with new action items and the Parking Lot list.

### **Action Items**

Action Items are recorded in both the meeting agenda and minutes. Action items will include both the action item along with the owner of the action item. Meetings will start with a review of the status of all action items from previous meetings and end with a review of all new action items resulting from the meeting. The review of the new action items will include identifying the owner for each action item.

### **Meeting Chair Person**

The Chair Person is responsible for distributing the meeting agenda, facilitating the meeting and distributing the meeting minutes. The Chair Person will ensure that the meeting starts and ends on time and that all presenters adhere to their allocated time frames.

### **Note Taker**

The Note Taker is responsible for documenting the status of all meeting items, maintaining a Parking Lot item list and taking notes of anything else of importance during the meeting. The Note Taker will give a copy of their notes to the Chair Person at the end of the meeting as the Chair Person will use the notes to create the Meeting Minutes.

### **Time Keeper**

The Time Keeper is responsible for helping the facilitator adhere to the time limits set in the meeting agenda. The Time Keeper will let the presenter know when they are approaching the end of their allocated time. Typically a quick hand signal to the presenter indicating how many minutes remain for the topic is sufficient.

### **Parking Lot**

The Parking Lot is a tool used by the facilitator to record and defer items which aren't on the meeting agenda; however, merit further discussion at a later time or through another forum. A parking lot record should identify an owner for the item as that person will be responsible for ensuring follow-up. The Parking Lot list is to be included in the meeting minutes.



## J. Communication Standards

For this project, Clear Ballot will utilize standard organizational formats and templates for all formal project communications. Formal project communications are detailed in the project's communication matrix and include:

Kickoff Meeting – project team will utilize Clear Ballot standard templates for meeting agenda and meeting minutes.

Project Team Meetings – project team will utilize Clear Ballot standard templates for meeting agenda and meeting minutes.

Technical Design Meetings - project team will utilize Clear Ballot standard templates for meeting agenda and meeting minutes

Monthly Project Status Meetings - project team will utilize Clear Ballot standard templates for meeting agenda and meeting minutes.

Project Status Reports – project team will utilize Clear Ballot standard templates for meeting agenda and meeting minutes.

Informal project communications should be professional and effective but there is no standard template or format that must be used.

## K. Communication Escalation Process

Efficient and timely communication is the key to successful project completion. As such, it is imperative that any disputes, conflicts, or discrepancies regarding project communications are resolved in a way that is conducive to maintaining the project schedule, ensuring the correct communications are distributed, and preventing any ongoing difficulties. In order to ensure projects stay on schedule and issues are resolved, Clear Ballot will use its standard escalation model to provide a framework for escalating communication issues. The table below defines the priority levels, decision authorities, and timeframes for resolution.



Priority	Definition	Decision Authority	Timeframe for Resolution
Priority 1	Major impact to project or business operations. If not resolved quickly there will be a significant adverse impact to revenue and/or schedule.	To be determined by CDOS	Within 4 hours
Priority 2	Medium impact to project or business operations which may result in some adverse impact to revenue and/or schedule.	Project Sponsor	Within one business day
Priority 3	Slight impact which may cause some minor scheduling difficulties with the project but no impact to business operations or revenue.	Project Manager	Within two business days
Priority 4	Insignificant impact to project but there may be a better solution.	Project Manager	Work continues and any recommendations are submitted via the project change control process

**L. Glossary of Communication Terminology**

Term	Definition
Communication	The effective sending and receiving of information. Ideally, the information received should match the information sent. It is the responsibility of the sender to ensure this takes place.
Stakeholder	Individuals or groups involved in the project or whose interests may be affected by the project's execution or outcome.
Communications Management Plan	Portion of the overall Project Management Plan which details how project communications will be conducted, who will participate in communications, frequency of communications, and methods of communications.
Escalation	The process which details how conflicts and issues will be passed up the management chain for resolution as well as the timeframe to achieve resolution.

## Stakeholder Management Strategy Example

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### 1. Introduction

The Stakeholder Management Strategy for the UVS Project will be used to identify and classify project stakeholders; determine stakeholder power, interest, and influence; and analyze the management approach and communication methodology for project stakeholders. This will allow us to identify key influential stakeholders to solicit input for project planning and gain support as the project progresses. This will benefit the project by minimizing the likelihood of encountering competing objectives and maximizing the resources required to complete the project.

Early identification and communication with stakeholders is imperative to ensure success by gaining support and input for the project. Some stakeholders may have interests which may be positively or negatively affected by the UVS implementation. By initiating early and frequent communication and stakeholder management, we can more effectively manage and balance these interests while accomplishing all project tasks.

### 2. Identify Stakeholders

The UVS Team will conduct a brainstorming session in order to identify stakeholders for the project. The brainstorming session will include the primary project team and project sponsor. The session will be broken down into two parts. The first part will focus on internal stakeholders within. These stakeholders may include functional managers, operations personnel, finance personnel, warehouse and material handlers, and any other employee who will be affected by the UVS project. The second part of the session will focus on external stakeholders. These may include suppliers, various vendors, printing companies, or any other individuals who reside outside of the CDOS or the target county.

The following criteria will be used to determine if an individual will be included as a stakeholder:

- 1) Will the person or their organization be directly or indirectly affected by this project?
- 2) Does the person or their organization hold a position from which they can influence the project?
- 3) Does the person have an impact on the project's resources (material, personnel, funding)?
- 4) Does the person or their organization have any special skills or capabilities the project will require?
- 5) Does the person potentially benefit from the project or are they in a position to resist this change?



Any individual who meets one or more of the above criteria will be identified as a stakeholder. Stakeholders from the same organization will be grouped in order to simplify communication and stakeholder management.

### 3. Key Stakeholders

As a follow on to Identify Stakeholders, the project team will identify key stakeholders who have the most influence on the project or who may be impacted the most by it. These key stakeholders are those who also require the most communication and management which will be determined as stakeholders are analyzed. Once identified, the Project Manager will develop a plan to obtain their feedback on the level of participation they desire, frequency and type of communication, and any concerns or conflicting interests they have.

Based on the feedback gathered by the project manager, the determination may be made to involve key stakeholders on steering committees, focus groups, gate reviews, or other project meetings or milestones. Thorough communication with key stakeholders is necessary to ensure all concerns are identified and addressed and that resources for the project remain available.

### 4. Stakeholder Analysis

Once all UVS Project stakeholders have been identified, the project team will categorize and analyze each stakeholder. The purpose of this analysis is to determine the stakeholders' level of power or influence, plan the management approach for each stakeholder, and to determine the appropriate levels of communication and participation each stakeholder will have on the project.

The project team will categorize stakeholders based on their organization or department. Once all stakeholders have been categorized, the project team will utilize a power/interest matrix to illustrate the potential impact each stakeholder may have on the project. Based on this analysis the project team will also complete a stakeholder analysis matrix which illustrates the concerns, level of involvement, and management strategy for each stakeholder.

The chart below will be used to establish stakeholders and their levels of power and interest for use on the power/interest chart as part of the stakeholder analysis.



Key	Organization	Name	Power (1-5)	Interest (1-5)
A				
B				
C				
D				
E				
F				
G				

**Sponsor Acceptance**

Approved by the Project Sponsor:

\_\_\_\_\_

<Project Sponsor>  
<Project Sponsor Title>

Date: \_\_\_\_\_

## **Risk Management Plan Example**

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### 1. Introduction

The purpose of the risk management plan is to establish the framework in which the project team will identify risks and develop strategies to mitigate or avoid those risks. However, before risks can be identified and managed, there are preliminary project elements which must be completed. These elements are outlined in the risk management approach.

Before risk management begins it is imperative that a foundation is established for providing structured project information, thus, the following project elements were completed and defined prior to developing this Risk Management Plan:

- Define work scope, schedule, resources, and cost elements
  - Develop project WBS/WBS dictionary
  - Develop master schedule and detailed schedules
  - Estimate project cost and finalize budget
  - Identify required and available resources
  - Establish performance measurement metrics
- Define minimum and maximum baseline thresholds
  - Schedule
  - Resources
  - Cost
- Baseline reporting requirements
  - Format
  - Frequency of distribution
  - Distribution list
- Define Risk Management Roles and Responsibilities
  - Project Manager chairs the risk assessment meetings
  - Project team participates in risk assessment meetings and members serve as meeting recorder and timekeeper
  - Key stakeholders participate in risk assessment meetings
  - Project Sponsor may participate in risk assessment meetings

### 2. Top Three Risks

The top three high probability and high impact risks to this project are: [EXAMPLES ONLY]

### **Delay in Server and Workstation Equipment**

Due to a manufacturer's production backlog, the servers are not available for large scale application testing causing a delay in the project schedule. The project manager will mitigate this risk by using servers from the backup data center if needed.

### **Delay in Fujitsu Scanners**

Due to construction delays in installing the fiber optic cable between the data center and the headquarters facilities users will not have a high speed connection between their site and the datacenter resulting in slow responses from the application making it unusable. The Project Manager will implement a site to site broadband Ethernet radio network between the data center and headquarters facility.

### **Operations Not Appropriately Staffed**

Due to lead times associated with hiring and training additional staff, there may not be the necessary staff to monitor the additional election setup associated with the project resulting in a delay to the project schedule. The project manager will mitigate this risk by working with the CDOS to create an alternate work schedule to compensate for the staffing shortage until additional staff hiring and training is complete.

## 3. Risk Management Approach

The approach we have taken to manage risks for this project included a methodical process by which the project team identified, scored, and ranked the various risks. The most likely and highest impact risks will be added to the project schedule to ensure that the assigned risk managers take the necessary steps to implement the risk response at the appropriate time during the schedule. Risk managers will provide status updates on their assigned risks in the bi-weekly project team meetings, but only when the meetings include their risk's planned timeframe. Upon the completion of the project, during the closing process, the project manager will analyze each risk as well as the risk management process. Based on this analysis, the project manager will identify any improvements that can be made to the risk management process for future projects. These improvements will be captured as part of the lessons learned knowledge base.

## 4. Risk Identification

For this project, risk identification will be conducted in the initial project risk assessment meeting. The project manager chaired the risk assessment meeting and distributed notepads to each member of the team and allowed 10 minutes for all team members to record as many risks as possible.

### **Risk Assessment Meeting**

A risk assessment meeting will be held with key team members and stakeholders. The risks identified during this meeting will be added to the project plan and Risk Register.

### **Historical Review of Similar Projects**

The project team reviewed the history of similar projects in order to determine the most common risks and the strategies used to mitigate those risks.

#### 5. Risk Qualification and Prioritization

In order to determine the severity of the risks identified by the team, a probability and impact factor will be assigned to each risk. This process allowed the project manager to prioritize risks based upon the effect they may have on the project. The project manager utilized a probability-impact matrix to facilitate the team in moving each risk to the appropriate place on the chart.

Once the risks were assigned a probability and impact and placed in the appropriate position on the chart, the recorder captured the finished product and the project manager moved the process on to the next step: risk mitigation/avoidance planning.

#### 6. Risk Monitoring

The most likely and greatest impact risks have been added to the project plan to ensure that they are monitored during the time the project is exposed to each risk. At the appropriate time in the project schedule a Risk Manager is assigned to each risk. During the bi-weekly project team meeting the Risk Manager for each risk will discuss the status of that risk; however, only risks which fall in the current time period will be discussed. Risk monitoring will be a continuous process throughout the life of this project. As risks approach on the project schedule the project manager will ensure that the appropriate risk manager provides the necessary status updates which include the risk status, identification of trigger conditions, and the documentation of the results of the risk response.

#### 7. Risk Mitigation and Avoidance

The project manager will led the project team in developing responses to each identified risk. As more risks are identified, they will be qualified and the team will develop avoidance and mitigation strategies. These risks will also be added to the Risk Register and the project plan to ensure they are monitored at the appropriate times and are responded to accordingly.

The risks for this project will be managed and controlled within the constraints of time, scope, and cost. All identified risks will be evaluated in order to determine how they affect this triple constraint. The project manager, with the assistance of the project team, will determine the best way to respond to each risk to ensure compliance with these constraints.



If necessary, funding may be needed in the project to allow for more resources in order to meet the time (schedule) and scope constraints. Time and scope are firm constraints and allow for no flexibility. Again, the cost constraint is flexible only in extreme cases where no other risk avoidance or mitigation strategy will work.

## **RISK REGISTER**

The Risk Register for this project is a log of all identified risks, their probability and impact to the project, the category they belong to, mitigation strategy, and when the risk will occur. The Risk Register also contains the mitigation strategy for each risk as well as when the risk is likely to occur.

Based on the identified risks and timeframes in the risk register, each risk has been added to the project plan. At the appropriate time in the plan—prior to when the risk is most likely to occur—the project manager will assign a risk manager to ensure adherence to the agreed upon mitigation strategy. The each risk manager will provide the status of their assigned risk at the bi-weekly project team meeting for their risk’s planned timeframe.

The Risk Register will be maintained as an appendix to this Risk Management Plan.

## **SPONSOR ACCEPTANCE**

Approved by the Project Sponsor:

\_\_\_\_\_

<Project Sponsor>  
<Project Sponsor Title>

Date: \_\_\_\_\_

## Change Management

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### 1. Introduction

The Change Control Plan was created for the UVS Project in order to set expectations on how the approach to changes will be managed, what defines a change, the purpose and role of the change control board, and the overall change management process. All stakeholders will be expected to submit or request changes to the UVS Project in accordance with this Change Control Plan and all requests and submissions will follow the Change Request process.

### 2. Change Control Approach

The Change Control approach for the UVS Project will ensure that all proposed changes are defined, reviewed, and agreed upon so they can be properly implemented and communicated to all stakeholders. This approach will also ensure that only changes within the scope of this project are approved and implemented.

The Change Control approach consists of three areas:

- Ensure changes are within scope and beneficial to the project
- Determine how the change will be implemented
- Manage the change as it is implemented

By using this approach methodology, the UVS Project Team will prevent unnecessary change from occurring and focus its resources only on beneficial changes within the project scope.

### 3. Definitions of Change

There are several types of changes which may be requested and considered for the UVS Project. Depending on the extent and type of proposed changes, changes to project documentation and the communication of these changes will be required to include any approved changes into the project plan and ensure all stakeholders are notified. Types of changes may include:

- **Scheduling Changes:** changes which will impact the approved project schedule. These changes may require fast tracking, crashing, or re-baselining the schedule depending on the significance of the impact.
- **Budget Changes:** changes which will impact the approved project budget. These changes may require requesting additional funding, releasing funding which would no longer be required, or adding to project or management reserves
- **Scope Changes:** changes which are necessary and impact the project's scope which may be the result of unforeseen requirements or defects which were not initially planned for.



These changes may also impact budget and schedule. These changes may require revision to WBS, project scope statement, and other project documentation as necessary.

The project manager must ensure that any approved changes are communicated to the project stakeholders. Additionally, as changes are approved, the project manager must ensure that the changes are captured in the project documentation where necessary. These document updates must then be communicated to the project team and stakeholders as well.

#### 4. Change Control Board

The Elections Change Control Board (CCB) is the approval authority for all proposed change requests pertaining to the UVS Project. The purpose of the CCB is to review all change requests, determine their impacts on the project risk, scope, cost, and schedule, and to approve or deny each change request. The following chart provides a list of the CCB members:

Name	Position	CCB Role
	Project Sponsor	CCB Chair
	CDOS UVS Project Manager	CCB Member
	Project Technical Lead	CCB Member
	Project Operations Lead	CCB Member
	CDOS Election Director	CCB Co-Chair
	Clear Ballot Project Manager	CCB Member

As change requests are submitted to the Project Manager by the project team/stakeholders, the Project Manager will log the requests on the change request form and the CCB will convene bi-weekly to review all change requests. For a change request to be approved, all CCB members must vote in favor. In the event more information is needed for a particular change request, the request will be deferred and sent back to the requestor for more information or clarification. If a change is deemed critical, an ad hoc CCB meeting can be called in order to review the change prior to the next scheduled bi-weekly CCB meeting.

#### 5. Roles and Responsibilities

The following are some roles and responsibilities for all change management efforts related to the UVS Project:

Project Sponsor:

- Approve all changes to budget/funding allocations
- Approve all changes to schedule baseline
- Approve any changes in project scope
- Chair the CCB



Project Manager:

- Receive and log all change requests from project stakeholders
- Conduct preliminary risk, cost, schedule, scope analysis of change prior to CCB
- Seek clarification from change requestors on any open issues or concerns
- Make documentation revisions/edits as necessary for all approved changes
- Participate on CCB

Project Team/Stakeholders:

- Submit all change requests on standard organizational change request forms
- Provide all applicable information and detail on change request forms
- Be prepared to address questions regarding any submitted change requests
- Provide feedback as necessary on impact of proposed changes

6. Change Control Process

The Change Control Process for the UVS Project will follow the organizational standard change process for all projects. The project manager has overall responsibility for executing the change control process for each change request.

- 1) Identify the need for a change (Stakeholders) – Change requestor will submit a completed change request form to the project manager.
- 2) Log change in the change request register (Project Manager) – The project manager will keep a log of all submitted change requests throughout the project’s lifecycle.
- 3) Evaluate the change (Project Manager, Team, Requestor) – The project manager will conduct a preliminary analysis on the impact of the change to risk, cost, schedule, and scope and seek clarification from team members and the change requestor.
- 4) Submit change request to CCB (Project Manager) – The project manager will submit the change request, as well as the preliminary analysis, to the CCB for review.
- 5) Obtain Decision on change request (CCB) – The CCB will discuss the proposed change and decide whether or not it will be approved based on all submitted information.
- 6) Implement change (Project Manager) – If a change is approved by the CCB, the project manager will update and re-baseline project documentation as necessary.

**SPONSOR ACCEPTANCE**

Approved by the Project Sponsor:

\_\_\_\_\_  
<Project Sponsor>  
<Project Sponsor Title

Date: \_\_\_\_\_