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Report to the Voter Access and Modernized Elections Commission

Approach to Voting Equipment and Certification Studies Required by House Bill 13-1303

June 24, 2013

Attachments:

**Uniform Voting System Advisory Committee County by County Results of Equipment Needs Survey
April/May 2013**

Request for Information document, February 15, 2013 and summary of respondents by category by vendor

Report to the Voter Access and Modernized Elections Commission

Introduction and Overview

The 2013 Colorado Legislative Assembly passed House Bill 13-1303 which created the Colorado Voter Access and Modernized Elections Commission and assigned it the task of preparing two reports, one addressing voter registration systems and the other voting systems.

Section 5, (IV)((6)(b) requires the Commission to conduct: “AN INDEPENDENT NEEDS ASSESSMENT THAT ASSESSES THE CURRENT STATE OF TECHNOLOGY, INCLUDING VOTING SYSTEMS, CERTIFICATION OF VOTING SYSTEMS, AND REPLACEMENT OF VOTING SYSTEMS. THE REPORT SHALL INCLUDE AN ANALYSIS OF ELECTION-RELATED TECHNOLOGICAL COSTS AND FUNDING SOURCES. THE REPORT MUST BE PRESENTED ON OR BEFORE SEPTEMBER 2, 2013.”

Discussion

The language calls for assessment of the current state of technology relating to:

1. Voting Systems
2. Certification of Voting Systems
3. Replacement of Voting Systems

The report must also include an analysis of costs and funding sources related to elections technology.

We take the “current state of technology” to mean what is currently in place, as well as what is available on the market to replace what is currently in place.

This report will identify what voting equipment and systems are currently in place in Colorado, as well as speculate on what is available in the marketplace. This information has been collected for the Uniform Voting System Advisory Committee.

Current Voting Systems in Place in Colorado

- Current Colorado vote capture and vote tabulation equipment is aging.
- Much of the equipment in Colorado was bought with the implementation of HAVA in 2002-2006 and is, or will be, ready for replacement in the near future.
- Mergers and changes in vendors have resulted in existing companies supporting products created and previously supported by their competitors.
- Vendor and internal capacity for support for various system components varies by county.

Voting Equipment

- 1. Report to the Colorado Uniform Voting System Advisory Committee: Overview of Voting and Vote Tabulation Related Equipment for State of Colorado - January 2013**
- 2. Equipment Type and quantities in service by equipment vendor**
- 3. County by County Results of Equipment Needs Survey – April/May 2013 by Uniform Voting Systems Advisory Committee**

Report to the Colorado Uniform Voting System Advisory Committee
Overview of Voting and Vote Tabulation Related Equipment for State of Colorado
January 2013

The State of Colorado, with 64 counties responsible for conducting elections has a wide array of equipment for voting, vote tabulation, voter registration entry, voter registration scanning, ballot scanning and signature verification. Counties are responsible for the purchase and maintenance of such equipment.

Voting Machines and Vote Tabulation Equipment

The equipment in Colorado for voting and vote tabulation is provided by four voting equipment vendors. There are more than a dozen different combinations of equipment from these vendors in place in counties throughout the state.

The vendors supplying equipment in Colorado are:

- Election Systems and Software (ES&S)
- Hart
- Sequoia/Dominion
- Premier (Serviced by both ES&S and Dominion)

The total number of identified pieces of voting and tabulation equipment, based on reporting from the Counties to CDOS is 9,908.

ES&S represents	5% of the Counties 15% of Colorado Voters 4% of the voting and tabulation equipment
Hart Represents	70% of the Counties 25% of Colorado Voters 36% of the voting and tabulation equipment
Sequoia/Dominion Represent	6% of the Counties and 26% of Colorado Voters 37% of the voting and tabulation equipment
Premier Represents	19% of the Counties 34% of Colorado Voters 22% of the voting and tabulation equipment

Equipment identified includes electronic voting machines (DRE), optical scan ballot readers (central count and precinct count) voter authorization equipment, DRE printers and computer units used exclusively for voting and vote tabulation. It does not include laptops or computers used to access the electronic pollbook during Early Vote and from Vote Centers on Election Day.

We have not yet gathered equipment information for equipment used for signature verification processes, whether performed by individuals or via an automated system. Equipment used by the Counties to perform SCORE functions is not considered to be a part of the Uniform Voting System project.

**Summary of Voting and Ballot Tabulation Related Equipment by Vendor
State of Colorado
January 2013**

Equipment Vendor	Equipment Type	Quantity	Leased Units included
ES&S	DRE	386	3
	Optical Scan M650	7	2
	PC	5	
Vendor Total		398	
Hart	DRE	1,123	
	Judge's Booth Controller	634	
	DRE Printers	1,459	
	Optical Scanner	209	
	PC	167	
Vendor Total		3,592	
Premiere	DRE	1,314	
	DRE Card encoders	595	
	AccuVote Optical Scanners	288	
	PC	19	
Vendor Total		2,216	
Sequoia	DRE	944	411
	DRE Printers	1,463	
	Card Activators	1,158	
	400 Optical Scanners	11	
	Insight Optical Scanners	74	
	PC	52	
Vendor Total		3,702	
STATE TOTAL		9,908	416

NOTE: The attached report "County by County Results of Equipment Needs Survey", conducted in April and May of 2013 for the Uniform Voting System Advisory Committee provides additional details on the current state of equipment in Colorado counties.

Equipment Certification

- 1. Voting Equipment Certified by the State of Colorado**
- 2. Voting Equipment Certified by the Federal Elections Assistance Commission (EAC)**
- 3. Certification of System or Components of Uniform Voting System**

State of Colorado Certified Voting Equipment

ES&S

Component Name	System Function	Version Number
Unity	Software Application – includes only the following modules (for use with MS Windows XP Professional - Service Pack 2): Audit Manager Election Data Manager ESS Image Manager iVotronic Image Manager Optech Image Manager Hardware Programming Manager Election Reporting Manager	3.0.1.1 7.3.0.0 7.4.4.0 7.4.2.0 2.0.1.0 4.0.0.0 5.2.4.0 7.1.2.1
M100	Precinct Optical Scanner	5.2.1.0
M650	Central Count Optical Scanner	2.1.0.0 (Green Light Only)
iVotronic ADA w/ 3-button	Direct Record Electronic Device	9.1.6.2
iVotronic non-ADA	Direct Record Electronic Device	9.1.6.2

Hart

Component Name	System Function	System 6.0 Version Number	System 6.2.1 Version Number
System Software (EMS)	Software Application which includes (for use with MS Windows 2000 Professional - Service Pack 4): Boss Tally Rally SERVO eCM Manager	4.2.13 4.2.8 2.2.4 4.1.6 1.1.7	4.3.13 4.3.10 2.3.7 4.2.10 1.1.7
Ballot Now	Software Application for Central Count Scanners which includes the following three scanners (for use with MS Windows 2000 Professional - Service Pack 4): Kodak i800 Series Kodak i600 Series Kodak i200 Series	3.2.4	3.3.11
eScan	Precinct Optical Scanner	1.1.6	1.3.14
eSlate (with and without audio – DAU)	Direct Record Electronic Device which also includes: JBC Units VBO Units	4.0.19 4.0.19 1.7.5	4.2.13 4.3.1 1.8.3

Premier

Component Name	System Function	Version Number
GEMS	Software Application (for use with MS Windows 2000 - Service Pack 4, MS Windows XP Professional Version 2002 - Service Pack 2, and Windows Server 2003)	1.18.24
Accuvote OS Model "D"	Precinct Optical Scanner	1.96.6
Accuvote OS Model "D"	Central Count Optical Scanner	2.0.12
Accuvote TSx Model "C" & "D" w/ V-VPAT	Direct Record Electronic Device	4.6.4
VC Programmer	Voter Card Activation Interface for DRE.	4.6.1
Voter Card Encoder	Hand held Voter Card Activation unit for DRE.	1.3.2
Key Card Tool	Software application used for managing secure keys between DRE voting Devices	4.6.1

Sequoia

Component Name	System Function	Version Number
WinEDS	Software Application (for use with MS Windows XP - Service Pack 2 and MS Windows Server 2003 - Service Pack 1)	3.1.074
Optech Insight / Insight Plus	Precinct Optical Scanner which includes: Insight Memory Pack Receiver	HPX K1.44/APX 2.12 2.15
Optech 400-C	Central Count Optical Scanner which includes (for use with MS Windows 2000, Service Pack 4): WinETP Software	3.00 1.14.3
AVC Edge II	Direct Record Electronic Device which includes: Card Activator VeriVote Edge Audio Unit	5.0.31 5.0.31 4.3 5.0 Rev. C
AVC Edge II Plus	Direct Record Electronic Device which includes: HAAT Model 50	1.2.33 2.1.18

Currently there are no new voting systems being tested in Colorado. However, Hart has requested certification of the Hart 6.2.1 software on Windows 7, which is being reviewed by our office.

Colorado law prohibits purchasing equipment that was certified after the 2002 standards, though 2005 standards have been adopted. Because the Election Assistance Commission is without Commissioners, no standards after the 2005 standards have been adopted.

1-5-601.5. Compliance with federal requirements. All voting systems and voting equipment offered for sale on or after May 28, 2004, shall meet the voting systems standards that were promulgated in 2002 by the federal election commission. At his or her discretion, the secretary of state may require by rule that voting systems and voting equipment satisfy voting systems standards promulgated after January 1, 2008, by the federal election assistance commission as long as such standards meet or exceed those promulgated in 2002 by the federal election commission. Subject to section 1-5-608.2, nothing in this section shall be construed to require any political subdivision to replace a voting system that is in use prior to May 28, 2004.

Systems Certified By the Federal Election Assistance Commission June 2013

Certified Systems		
Manufacturer	Voting System (Name/Version)	Testing Standard
Dominion	Democracy Suite 4.0	2005 VVSG
Dominion (Premier)	Assure 1.3 (Modification)	2002 VSS
ES&S	Unity 3.4.0.0 (Modification)	2002 VSS
ES&S	Unity 3.2.1.0 Previously Unity 3.0.1.0 & Unity 3.0.1.1 w. ATS 1.3	2002 VSS
ES&S	Unity 3.2.0.0 Rev. 3 (Modification)	2002 VSS
ES&S/ Dominion (Premier)	Assure 1.2	2002 VSS
ES&S	EVS 5.0.0.0	2005 VVSG
MicroVote	EMS Ver. 4.0B (Modification)	2005 VVSG
MicroVote	EMS Ver. 4.0	2005 VVSG
Unisyn	OpenElect v.1.1 (Modification)	2005 VVSG
Unisyn	OpenElect v.1.0.1 (Modification)	2005 VVSG
Unisyn	OpenElect 1.0	2005 VVSG

Systems Under Test by the Federal Election Assistance Commission June 2013

Systems Under Test		
Manufacturer	Voting System (Name/Version)	Testing Standard
Dominion	Democray Suite 4.14 (Modification)	2005 VVSG
Hart	Verity Voting 1.0	2005 VVSG
Unisyn	OpenElect 1.2 (Modification)	2005 VVSG

Certification of the Certifiable Components of the Uniform Voting System

At this point we don't know what type of system(s) will be proposed and selected, we must plan that some certification process maybe necessary.

Scenario 1 represents selection of a "traditional" election system that has been certified by the Elections Assistance Commission or a state.

Scenario 2 represents selection of a "non-traditional" system or a traditional system not certified by the EAC or a state.

In Scenario 1 the first determination is whether to accept the testing of the EAC, a Voting Systems Testing Laboratory (VSTL) or another state. If accepted, the level of testing in Colorado can range from none to very extensive. The timeframe would reflect the level of testing required by the Colorado Department of State.

In Scenario 2 the process would take significantly longer.

In either scenario the following procedures must be followed:

- Vendor must submit application and documentation as required in Rule 45.4 and 45.5.2.4.
- Vendor must provide a product demonstration as required by Rule 45.6.1.

Testing

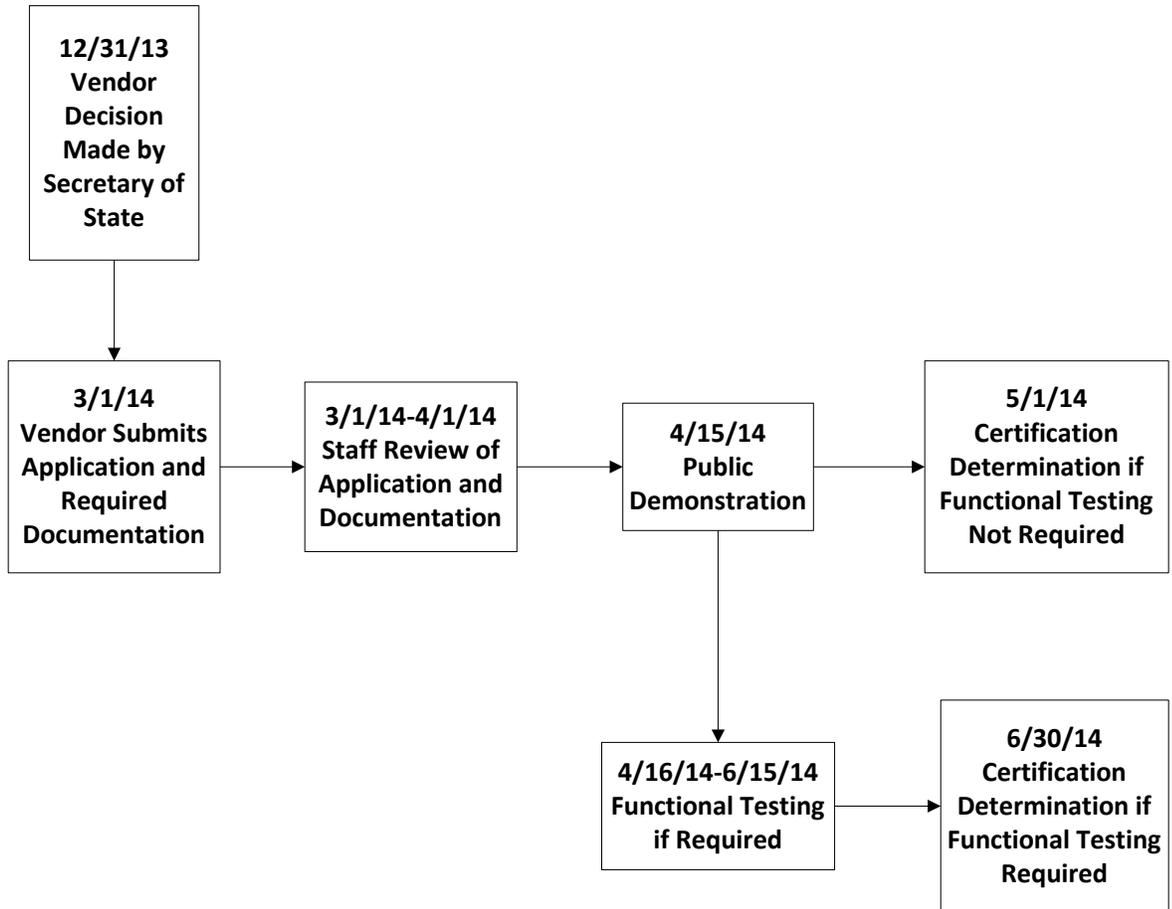
In Scenario 1 any additional testing is determined by the Secretary of State. If additional testing is required Rule 45.6.2 applies. The system must meet or exceed the Voting System Standards identified in Rule 45.5.

In Scenario 2 the testing requirements of Rule 45.6.2 are mandatory. However, if the system is non-traditional, the standards in Rule 45.5, to which the system will be tested, may not be applicable, in which case the rulemaking process may be needed. This can take up to four months to complete after the new rules with revised standards are drafted. Estimate 30-60 days to draft new voting system standards.

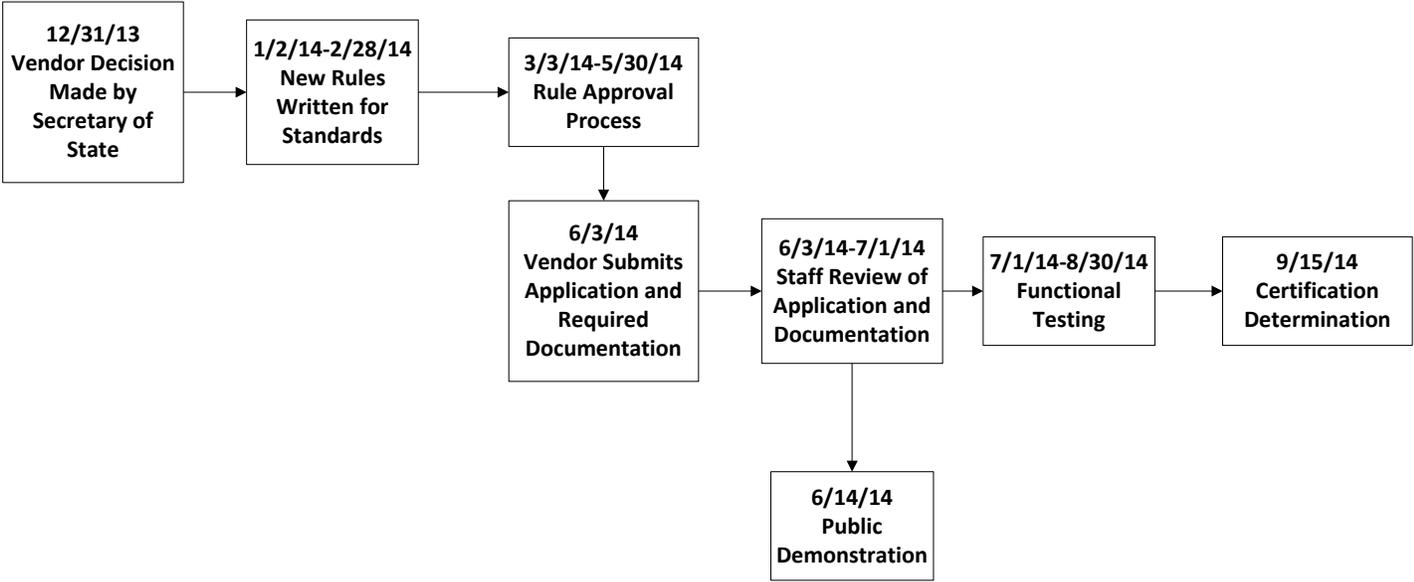
A temporary rule could possibly be adopted but not before the standards are written.

System certification can take from four months to two years, depending upon the system, the testing needed and the availability of a Voting Systems Testing Laboratory (VSTL) to assist in the testing if necessary.

Scenario 1
Best Case Scenario for Certification if System Certified by EAC or Another State



Scenario 2
Best Case Scenario for Certification if System Not Certified by EAC or Another State



Note: Depending upon the amount of testing required, amount of software code to be analyzed, etc. this process could take significantly longer.

Cost and Funding Source

Cost and Funding Source Discussion

Counties are currently responsible for purchasing voting equipment. In considering moving to a State selected Uniform Voting System, the UVC Advisory Committee has centered on a matching funds approach. The most widely supported by the Advisory Committee Members is an 80% state funding and 20% county match. The State Treasurer and the Secretary of State are working to develop a fund from which counties can borrow for purchases at an attractive interest rate and terms. There is currently no state money allocated for purchase voting equipment.

We won't know what these expenditures might be until we get an analysis from a survey of the counties as to what equipment needs are anticipated under the new Colorado elections model. That survey will be conducted the first part of July.

Another issue impacting cost analysis is we don't know what system(s) will be proposed and selected in the Uniform Voting System Request for Proposal process. (RFP to be issued 8/1/13)

We know what current equipment costs, and could estimate based on what may be valid if we choose a traditional type of voting system as the Uniform System, however; based on the Request for Information issued earlier this year (attached), we could select a software based voting systems with much different costs..

A high speed central paper ballot scanner, essential to large counties in a mail ballot environment, will cost about \$100,000 with another \$100,000 for the operating system. Minimally, the nine largest counties would need this level of ballot scanning capacity and with redundancy that could be an estimated 22 units, for \$2.2 million, plus \$900,000 for the operating system for a total of \$3.1 million.

One can assume that smaller counties would likely use a smaller central count unit or some variation of the precinct level scanner which average about \$7,000-\$10,000 each. Most counties would need multiple units for a central count environment.

Under the new Colorado election model, many counties may opt for electronic voting for the Voter Service and Polling Centers. Traditional units generally cost between \$6,000 and \$8,000 each. Most counties would need multiple units for each Voter Service and Polling Center, some equipped for voters with disabilities.

There are also costs for "ballot on demand" printers which may be used by many counties in the Voter Service and Polling Centers. The current model selected by the State in 2012 costs approximately \$12,000 each. Counties would need at least one for each Voter Service and Polling Center as well as redundancy for failures.

Other costs may include ballot opening and sorting equipment, automated signature verification equipment, computers and paper scanning equipment.

Summary and Suggestions

The charge of the legislation requires an assessment of the current state of technology

The work done and in progress by the Uniform Voting System Advisory Committee can be of assistance to the contractor in development of that report.

Suggestions:

1. The Commission use the work done by the UVSAC as the base for the needs assessment on the existing status of voting systems.
2. The Commission coordinate with the UVSAC and the UVS Public Participation Panel in the planned early July survey of County Clerks regarding equipment needs under the new Colorado election model. Questions of importance to all three bodies can be included.
3. The Commission use the previously gathered survey information from the UVSAC concerning equipment replacement needs as a starting point for examining this part of the charge.
4. The Commission use the responses to the UVSAC Request for Proposal to analyze the potential for equipment replacement.